2013 & 2014

HIGH SCHOOL TECHNOLOGY ACTIVITIES

National TSA Conference Competitive Events Guide

With Correlations to Science, Technology, Engineering and Mathematics (STEM) Standards

TECHNOLOGY STUDENT ASSOCIATION®

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ACKNOWLEDGMENTS

TSA is grateful to many people for their advice and expertise in developing the competitive events program over the years. We especially appreciate the volunteer efforts of the members of the Competition Regulations Committee, who have written and refined the event specifications that appear in this guide.

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TSA, THE ORGANIZATION

The Technology Student Association (TSA) is the only student organization devoted exclusively to the needs of students who have a strong interest in technology. Open to those who are enrolled in or who have completed technology education courses, TSA has over 190,000 middle and high school student members in 2,000 schools spanning 48 states. TSA is supported by educators, parents, and business leaders who believe in the need for a technologically literate society. Our members learn through exciting competitive events, leadership opportunities, and membership activities.

You can explore what TSA has to offer your students by using this guide and by visiting **www.tsaweb.org** for information. With competitive events that range from video game design to structural engineering and much more, you'll find something to capture the imagination of and bring out the best in each of your students. We hope that, with your guidance, your students will enjoy the challenge of TSA's competitive events at local, state, regional, and national TSA conferences.

The competitions in this guide not only support a broad spectrum of goals related to science, technology, engineering and mathematics (STEM) curriculum, they also promote leadership skills and a focus on future career choices.

☑ For more information about becoming a TSA member, visit www.tsaweb.org and click on Join TSA.

TSA, INC. MISSION

The mission of the Technology Student Association, Inc. is to provide leadership and support to TSA through educational programs and services.

TSA MISSION

The Technology Student Association fosters personal growth, leadership and opportunities in technology, innovation, design and engineering. Members apply and integrate science, technology, engineering and mathematics (STEM) concepts through co-curricular activities, competitive events and related programs.

THE ROLE OF COMPETITIVE EVENTS

In order to achieve the goals noted in its mission statement, TSA offers stimulating competitive events and recognition in both technology and leadership arenas. We believe that by participating in carefully designed competitions, students learn to do their best, thereby becoming "winners" whether or not they place in competition. Many teachers find that TSA competitive events provide an excellent motivational tool in the academic environment.

Every two years TSA's competitive events are reviewed and revised by the Competition Regulations Committee (CRC), a standing group of technology educators with hands-on classroom experience. The *2013 & 2014 High School Technology Activities, National TSA Conference Competitive Events Guide* is the result of the work of the CRC, its competitive event coordinators, teachers, and the proposals of numerous TSA state and chapter advisors and students whose suggestions make TSA competitive events current and dynamic. The guide presents rules and regulations for all national TSA conference competitive events, as well as a comprehensive view of each event's connection to science, technology, engineering, and mathematics (STEM). Additionally, leadership skills, career choices (including connections to career clusters), and suggested careers are featured for each event. Relevant for all levels of competition (state delegations may choose to adopt the national guidelines for state-level competitions), the guide provides an excellent motivational tool for curricular activities in the classroom.

Thank you for your interest and support.

Tonya V. Childress, Ed.D
CRC Chairperson

Rosanne White, Ed.D
TSA Executive Director

☑ Each competitive event has an event coordinator who is responsible for answering questions about the event's guidelines. For your convenience, names and contact information can be found under Directory on the TSA website (www.tsaweb.org).

HIGH SCHOOL PROGRAM

EVENTS

The officially approved high school competitive events for the 2013 and 2014 national TSA conferences are as follows:

Animatronics
Architectural Renovation
Biotechnology Design
Career Preparation
Chapter Team
Computer-Aided Design (CAD) 2D, Architecture
Computer-Aided Design (CAD) 3D, Engineering
Computer Numerical Control (CNC) Production
Debating Technological Issues
Desktop Publishing
Digital Video Production
Dragster Design
Engineering Design
Essays on Technology
Extemporaneous Speech
Fashion Design
Flight Endurance
Future Technology Teacher
Manufacturing Prototype
Music Production
On Demand Video
Open Source Software Development
Photographic Technology
Prepared Presentation
Promotional Graphics
SciVis
Structural Engineering
System Control Technology
Technical Sketching and Application
Technology Bowl
Technology Problem Solving
Transportation Modeling
Video Game Design
Webmaster

LEVELS OF COMPETITION

A. The following breakdown of grades is used to designate categories for curricular event entries. Each level has its own unique competitive events guide.

   Middle School/Junior High School—Grades 6, 7, 8 and 9

   High School—Grades 9, 10, 11, and 12

   Ninth graders must compete at the level in which the chapter affiliates. For example, if the ninth grade is housed in a 9-12 high school, the student must compete in high school events. If the ninth grade is housed at a 6-9 or 7-9 school, ninth grade students must compete in middle school events.

B. If the school has a K-12 or a configuration other than the examples above, contact the CRC chairperson or national TSA for clarification and approval regarding the appropriate school designation.

☑ Don't miss these General Rules! They apply to all the events and are in addition to each event's specific guidelines.

GENERAL RULES AND REGULATIONS

A. It is the intent of TSA, Inc. to involve as many different TSA members as possible in competitive events and provide recognition in a setting of fair play practices using TSA event guidelines.

B. TSA members, advisors, and chapters must be currently affiliated with TSA in order to enter any competitive event.

C. TSA membership rights extend through the school year of graduation. It is permissible for students who graduate midyear to compete at the national conference that immediately follows the end-of-year graduation.

D. Students must be registered and be in attendance at all times at the national conference in order to enter and become a finalist in any event.

E. It is the individual responsibility of each participant to obtain all rules and guidelines for the events. Lack of knowledge or understanding about a particular event is neither reason nor excuse for an individual to request an adjustment or change.

F. The event limit is six (6) per conference participant, individual and team events combined.

G. Team members must be affiliated with the same chapter. To enter a team event, the chapter designates only that it is participating; names of the individual team members are not

necessary. Unless otherwise designated in a competition's eligibility guideline, the maximum size of a team is six (6) members.

H. Entries (projects and/or products) may be submitted for one (1) year, and one (1) competition, only. Unless otherwise noted, entries should be identified with a student or team ID# only, as applicable.

I. Entries must be started and completed during the current school year. All entries must be in English. Unless otherwise specified, no identifying information—other than an ID#—should be included on an entry.

J. Participants must provide—and bring to the test site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for any competition that involves a written test.

K. For all events that require a notebook/album, the following applies: the cover page is on the outside of the notebook/album, and the title page is the first page inside the notebook/album.

L. Unless otherwise noted, for all events that require a display, the size of the display may not exceed 15" deep x 3' wide x 4' high.

M. For all applicable competitive events, written work—including citations or references—must follow MLA (Modern Language Association) style.

N. All entries must be the original work of the student participant or student team. *All* ideas, text, images, and sound from other sources must be cited, including anything that is from the public domain. References and resources should be cited using the most current edition of MLA (Modern Language Association). If copyrighted material is used, proper written permission must be included. Failure to follow this procedure results in disqualification. Advisors: Please see the Student Copyright Checklist at the end of this section. For any applicable competition, your student participant in the competition must complete—and you must verify—the information on the checklist. The checklist MUST be submitted with the competition entry.

O. All competitive events with a semifinalist component will have a minimum of twelve (12) semifinalists. Semifinalists (individuals or teams, as applicable) will compete against one another to determine the top ten (10) finalists in an event.

P. Students must check in and pick up their event entries at the time and place stated in the conference program or announced at the national TSA conference.

☑ An Internet search about copyrighted materials and copyright fair use is recommended if ideas, text, images or sound from other sources may be incorporated into an event entry.

For information about the use of TSA's logo, go to the TSA website at www.tsaweb.org and search Trademark Policies.

☑ Rule (X) highlights what has always been true—student participants must be in attendance for the duration of the conference.

Q. TSA is not responsible or liable for any personal property, equipment, or materials brought to a national TSA conference for use by a participant or attendee.

R. In case of a scheduling conflict that prevents a member from participating in an event, the participant has the right to decide which event is eliminated.

S. In the case of a documented emergency in team events that involve written and semifinalist segments, team member substitution may be allowed if approved by the event manager and coordinator.

T. All events are judged in accordance with the stated criteria for each event as shown in this competitive events guide. Completed official rating forms are the property of TSA, and the information they contain may or may not be disclosed, as determined by TSA. Concern about any event during the national TSA conference should be submitted in writing to the Rules Interpretation Panel (RIP) as soon as possible and preferably during the conference. Whenever possible, the Rules Interpretation Panel renders a decision at the conference. The decisions of the RIP at the national conference are final. (For more information, please refer to Rules Interpretation Panel.)

☑ Buying TSA apparel is now a mouse click away on the TSA website at www.tsaweb.org. Just click on SHOP to purchase TSA official attire, as well as TSA hoodies, polo shirts and much more!

U. Hazardous materials, chemicals, lighted or open flames, combustibles, wet cell batteries, and other similar substances are not allowed at the national TSA conference.

V. Recording devices are not allowed in certain competitive events. CRC manager and event coordinator approval is required before any event may be recorded.

W. Out of courtesy to other competitors and to avoid any perception of impropriety, no electronic communication devices of any kind are permitted during competition. Cell phones, walkie-talkies, pagers, etc. must be turned off.

X. Everyone who wishes to attend the conference must complete conference registration. All student participants, adult advisors, and chaperones must be in attendance for the duration of the conference.

Y. Because of the possibility of the controversial nature of topics from which students may select, national TSA bears no responsibility for the content of entries. Topics are selected at the local level and entries are evaluated on the basis of the event's official rating form.

Z. Rules violations and disqualifications: A rules violation that gives a contestant an unfair advantage will result in a twenty percent

(20%) deduction of the total possible points. The manager of an event has the right to disqualify a contestant when such contestant violates the spirit or intent of a competition. The event manager must sign off on both a 20% deduction and a disqualification.

AA. TSA may choose to keep national TSA conference student entries. Such entries become the property of TSA and ultimately may be used by TSA for promotional purposes. Should that occur, credit for any such entry would be noted by TSA.

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

1) Does your solution to the competitive event integrate any music? YES _____ NO _____

If NO, go to question 2.

If YES, is the music copyrighted? **YES _____ NO _____**

If YES, move to question 1A. If NO, move to question 1B.

1A) Have you asked for author permission to use the music in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission (OR use royalty free/your own original music) and if permission is granted, include the permission in your documentation.

1B) Is the music royalty free, or did you create the music yourself? If YES, cite the royalty free music OR your original music properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any music into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of music is done so with proper permission and is cited correctly in the student's documentation.

2) Does your solution to the competitive event integrate any graphics? YES _____ NO _____

If NO, go to question 3.

If YES, is the graphic copyrighted, registered and/or trademarked? **YES _____ NO _____**

If YES, move to question 2A. If NO, move to question 2B.

2A) Have you asked for author permission to use the graphic in your solution and included that permission (letter/form) in your documentation? If YES, move to question 3. If NO, ask for permission (OR use royalty free/your own original graphic) and if permission is granted, include the permission in your documentation.

2B) Is the graphic royalty free, or did you create your own graphic? If YES, cite the royalty free graphic OR your own original graphic properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any graphics into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics is done so with proper permission and is cited correctly in the student's documentation.

3) Does your solution to the competitive event use another's thoughts or research? YES _____ NO _____

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? If YES, this is the end of the checklist.

If NO, properly cite the thoughts/research of others in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any thoughts/research of others into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation.

COMPETITIVE EVENTS ATTIRE

Chapter and state advisors, and parents and chaperones, are responsible for seeing that all TSA student members wear official TSA attire, professional TSA attire, or business casual TSA attire as occasions may require. TSA attire may be purchased online via the SHOP tab on the TSA website at www.tsaweb.org. Official TSA attire, professional TSA attire, and business casual TSA attire are considered appropriate dress for conference activities and public appearances. Since adults (advisors, parents, and guests) serve as role models at TSA conferences and activities, they are expected to dress appropriately for all related occasions they attend. Students must adhere to the TSA dress code requirements as listed below.

- During general sessions at the national conference, student members must wear official TSA attire, professional TSA attire, or business casual TSA attire. Adults must dress appropriately. No flip flops, halter tops, tank tops or shorts are permitted for anyone at the general sessions.
- TSA contestants must refer to the attire guidelines below and to those for each specific event in which they are participating.
- Students are allowed to dress more formally than specified for conference activities. Students who are dressed LESS formally than specified for an event in which they are competing are allowed to compete but lose twenty percent (20%) of the total possible points for that event.

Official TSA Attire (most formal)

Blazer: navy blue with official TSA patch
Tie: scarlet red imprinted with TSA logo (for males)
Shirt or blouse: white or blue button-up with turn down collar (option for 2013; see sidebar for 2014)
Pants or skirt: light gray
Socks: males only (black or dark blue)
Shoes: black dress shoes (unacceptable: athletic shoes, army boots, combat or work boots)
Sandals: females only may wear black open-toe shoes or sandals

Professional TSA Attire (less formal)

Shirt: button-up with turn-down collar (unacceptable: t-shirt, polo or golf shirt)
Blouse: females only
Tie: males only
Dress pants: (unacceptable: jeans, baggy pants, exterior pockets pants)

☑ During the 2013 national TSA conference, either a while shirt/blouse or the official royal blue shirt/blouse may be worn by participants when they compete in TSA competitions.

Beginning with the 2014 national TSA conference, the official royal blue shirt/blouse must be worn by participants when they compete in TSA competitions.

Females will wear the official royal blue blouse with an open collar (no tie or scarf). Males will wear the official royal blue shirt with the official TSA logo neck tie.

Dress/skirt: females only (length even with or longer than the tips of one's fingers)
Socks: males only (black or dark blue)
Shoes: dress shoes or dress boots (unacceptable: athletic shoes, combat, or work boots)
Sandals: females only may wear open-toe shoes or sandals

Business Casual TSA Attire (least formal)

This is the same as professional attire, however a tie is not required and the shirt or blouse may be a polo or golf shirt (unacceptable: t-shirt or shorts).

Registrants must wear conference identification badges at all times.

☑ The CRC is composed of dedicated technology teachers and education professionals from across the country who have made major commitments to create and maintain the high quality of TSA's competitive events. See who they are by clicking on TSA Directory on the national TSA website (www.tsaweb.org).

COMPETITION REGULATIONS COMMITTEE

The Competition Regulations Committee (CRC) is charged with reviewing TSA's competitive events, updating them as necessary, and presiding over the competitive events at the annual national TSA conference. Questions about a specific event can be addressed to the event coordinator, to the event manager, or if necessary to the CRC chairperson. *Please refer to the TSA website at* ***www.tsaweb.org*** *for complete contact information.*

Ideas and feedback to the CRC regarding events are always welcome. There are guidelines and forms at the end of this guide for proposing a new event or to suggest revisions in existing events.

RULES INTERPRETATION PANEL

The Rules Interpretation Panel (RIP), a group made up of at least three (3) CRC members, monitors and oversees the competitive events during a national TSA conference. The panel provides a means by which advisors may express grievances and concerns about on-site situations that pertain to events, and it maintains continuity from year to year in conducting the competitive events. It is the responsibility of the CRC chairperson to designate RIP members and to maintain the panel throughout national TSA conferences.

Immediately following the initial contact by an advisor with a concern about a rule, the panel meets to discuss and analyze the situation. Depending upon the severity of the problem, the advisor may be asked to submit his/her grievance in writing using the Rules Interpretation Panel grievance form (see Forms Appendix). It is the intent of the panel to resolve all grievances as soon as possible with a response in writing to the advisor.

EVENT COORDINATOR REMINDERS

TSA is very grateful for the support of its event coordinators, many of whom are teachers attending the conference with students from their own chapters. The busy schedules of these individuals prompt the reminders that follow.

A. Competitive event coordinators must be present for event check-in and check-out if they are coordinating an event in which those activities take place. Generally speaking, "check-in" is on the evening of registration day, and "check-out" is held on the day before the awards ceremony. Tentative schedule information is available before the conference on the TSA website.

B. The evaluators' totals on the official rating forms are averaged for each participant's final score.

C. For rules violations that result in a point deduction or disqualification, evaluators must record the specific rule that represents the violation. The rating form must be initialed by the evaluator, coordinator and event manager.

D. The Competition Regulations Committee, which consists of all the event managers, is available throughout the conference to support coordinators as they supervise events.

☑ Following the annual national TSA conference, the top ten (10) finalists in middle and high school competitions will be posted on the TSA website. Visit www.tsaweb.org shortly after the conference for this information.

AWARDS

A. At the awards ceremony, ten (10) finalists in each event are identified in random order and called to the stage for recognition.

B. From those ten (10) finalists, first, second, and third place awards are presented to the individual or to the team representative, as determined by each event.

C. Rankings beyond third place are not announced at the awards ceremony.

D. A list of the ten (10) finalists for each event is available on the national TSA website shortly after the conference.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) INTEGRATION

In recent years, not only educators, but also political, civic and industry leaders have pushed for a greater emphasis on science, technology, engineering and mathematics (STEM) education in our schools. These groups feel that in order for our nation to be competitive, healthy and vibrant, our young people must have competency in the 21st century skills afforded through the STEM fields. TSA promotes a vision of students literate in these fields, as well, and believes that the competitions within this guide help make that vision a reality.

STEM education is not just the isolated and discreet acquisition of knowledge and skills related to science, technology, engineering, and mathematics. Rather, STEM education demands the interweaving and application of these academic fields for the purpose of comprehending, communicating, and solving problems. Indeed, it is now commonly accepted that to understand (and apply) any one of these STEM areas, one must, at the same time, have a grasp of and apply the others. For example, to design and engineer with any degree of complexity, one also must be familiar with technology, mathematics and science; or to practice science, one must have a firm knowledge of mathematics and technology.

Beyond necessity, there is another reason for STEM education in our schools — and why the TSA program of activities inherently aligns with STEM goals. This reason revolves around teaching and learning, and what motivates students. STEM education is intrinsically exciting, rewarding and meaningful for instructors and students alike. It is our belief that, as with STEM education, TSA's activities provide the same kind of stimulation, challenge and relevancy for all involved.

Deserving of mention are two other essential areas imbedded in most of TSA's competitive events – those of art and ethics. It is difficult to design without considering aesthetics, and it is irresponsible to create without contemplating ethical consequences. When students participate in TSA competitions they find they must not only embrace the value of design when they compete, they also must envision and assess the effects of what they develop.

The competitions found in this guide provide a hands-on venue for learning about science, technology, engineering and mathematics. By participating in TSA's competitive events, students gain a broader understanding of these content areas, and at the same time experience the satisfaction that comes from applying them to real-life problem-solving situations.

This guide includes commonly accepted national standards for the areas of science, technology and mathematics, as well as ABET, Inc. criteria for accrediting higher education engineering programs. As you make use of these materials, keep in mind that their power and beauty lie in their synergistic nature.

SCIENCE CONTENT STANDARDS (GRADES 9-12)

A. Unifying concepts and processes
   1. Systems, order, and organization
   2. Evidence, models, and explanation
   3. Change, constancy, and measurement
   4. Evolution and equilibrium
   5. Form and function

B. Science as inquiry
   1. Abilities necessary to do scientific inquiry
   2. Understandings about scientific inquiry

C. Physical science
   1. Structure of atoms
   2. Structure and properties of matter
   3. Chemical reactions
   4. Motions and forces
   5. Conservation of energy and the increase in disorder
   6. Interactions of energy and matter

D. Life science
   1. The cell
   2. Molecular basis of heredity
   3. Biological evolution
   4. Independence of organisms
   5. Matter, energy, and organization in living systems
   6. Behavior of organisms

E. Earth and space science
   1. Energy in the earth system
   2. Geochemical cycles
   3. Origin and evolution of the earth system
   4. Origin and evolution of the universe

F. Science and technology
   1. Abilities of technological design
   2. Understanding about science and technology

G. Science in personal and social perspective
   1. Personal and community health
   2. Population growth
   3. Natural resources
   4. Environmental quality
   5. Natural and human-induced hazards
   6. Science and technology in local, national and global challenges

H. History and nature of science

1. Science as a human endeavor
2. Nature of scientific knowledge
3. Historical perspectives

The standards listed above are reprinted with permission from *National Science Education Standards, 1996,* by the National Academy of Sciences, courtesy of the National Academies Press, Washington, DC.

SCIENCE CONTENT STANDARDS

Event	Standard Number	A1	A2	A3	A4	A5	B1	B2	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6	H1	H2	H3
1. Animatronics		X	X			X						X													X	X									
2. Architectural Renovation			X	X		X			X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X
3. Biotechnology Design		X	X		X		X	X		X					X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X			
4. Career Preparation		X	X				X	X																	X	X									
5. Chapter Team		X	X	X																															
6. Computer-Aided Design (CAD) 2D, Architecture				X		X	X	X																	X						X				
7. Computer-Aided Design (CAD) 3D, Engineering				X		X	X	X																	X						X				
8. Computer Numeric Control (CNC) Production		X		X		X	X	X																	X	X									
9. Debating Technological Issues		X	X		X																				X	X	X	X	X	X	X	X	X	X	X
10. Desktop Publishing			X			X																			X										
11. Digital Video Production				X		X																			X	X									
12. Dragster Design			X	X	X	X	X	X				X	X	X											X	X									
13. Engineering Design			X		X	X	X	X	X				X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14. Essays on Technology		X		X	X		X	X																	X	X					X				
15. Extemporaneous Speech		X	X	X	X																						X	X	X		X				
16. Fashion Design			X	X	X	X																			X	X		X				X	X	X	X
17. Flight Endurance			X	X	X	X	X	X				X		X											X	X						X	X	X	X
18. Future Technology Teacher		X		X	X																				X	X									
19. Manufacturing Prototype			X	X	X	X	X	X																	X	X									
20. Music Production		X	X			X																			X	X									
21. On Demand Video		X	X																						X						X				
22. Open Source Software Development		X		X	X																				X	X	X								
23. Photographic Technology		X		X	X																				X	X									
24. Prepared Presentation		X	X		X																					X					X				
25. Promotional Graphics			X	X		X																			X	X									
26. SciVis		X	X		X	X	X	X																	X	X									
27. Structural Engineering			X		X	X	X	X		X		X													X	X				X	X				
28. System Control Technology		X	X			X	X	X				X		X											X	X						X	X	X	
29. Technical Sketching and Application			X	X		X																			X	X									
30. Technology Bowl			X		X																					X					X				
31. Technology Problem Solving			X		X	X	X	X																	X	X									
32. Transportation Modeling			X	X	X	X	X	X					X	X											X	X									
33. Video Game Design		X			X	X																			X					X					
34. Webmaster		X			X																				X	X					X				

TECHNOLOGY CONTENT STANDARDS

Standard 1: Students will develop an understanding of the characteristics and scope of technology.

Standard 2: Students will develop an understanding of the core concepts of technology.

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technologies and other fields of study.

Standard 4: Students will develop an understanding of the cultural, social, economic, and political aspects of technology.

Standard 5: Students will develop an understanding of the effects of technology on the environment.

Standard 6: Students will develop an understanding of the role of society in the development and use of technology.

Standard 7: Students will develop an understanding of the influence of technology on history.

Standard 8: Students will develop an understanding of the attributes of design.

Standard 9: Students will develop an understanding of engineering design.

Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Standard 11: Students will develop the abilities to apply the design process.

Standard 12: Students will develop the abilities to use and maintain technological products and systems.

Standard 13: Students will develop the abilities to assess the impact of products and systems.

Standard 14: Students will develop an understanding of and be able to select and use medical technologies.

Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.

Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.

Standard 18: Students will develop an understanding of and be able to select and use transportation technologies.

Standard 19: Students will develop an understanding of and be able to select and use manufacturing technologies.

Standard 20: Students will develop an understanding of and be able to select and use construction technologies.

These technology content standards are noted in *Standards for Technological Literacy: Content for the Study of Technology* (ITEEA/ITEA, 2000/2002/2007) and are used with permission. (www.iteea.org)

TECHNOLOGY CONTENT STANDARDS																					
Event	Standard Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Animatronics				X	X				X	X	X	X	X				X			X	
2. Architectural Renovation		X	X	X	X	X	X	X	X	X	X	X	X	X			X	X		X	X
3. Biotechnology Design					X	X	X			X	X	X			X	X					
4. Career Preparation															X	X	X	X	X	X	X
5. Chapter Team												X									
6. Computer-Aided Design (CAD) 2D, Architecture						X			X	X	X	X	X	X						X	X
7. Computer-Aided Design (CAD) 3D, Engineering						X			X	X	X	X	X	X						X	
8. Computer Numeric Control (CNC) Production		X	X	X			X	X	X	X	X	X	X								
9. Debating Technological Issues				X	X	X								X	X	X					
10. Desktop Publishing									X			X						X			
11. Digital Video Production				X					X		X	X	X	X				X			
12. Dragster Design		X	X	X					X	X	X	X	X					X		X	
13. Engineering Design		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14. Essays on Technology		X	X	X	X	X	X	X						X							
15. Extemporaneous Speech		X	X	X	X				X		X			X				X			
16. Fashion Design									X								X				
17. Flight Endurance				X					X	X	X	X							X		
18. Future Technology Teacher		X	X	X	X	X	X	X	X	X	X	X									
19. Manufacturing Prototype						X			X	X	X	X	X	X						X	
20. Music Production									X				X					X			
21. On Demand Video											X	X		X				X			
22. Open Source Software Development		X	X	X	X	X	X	X	X	X	X	X	X					X			
23. Photographic Technology		X	X		X		X	X	X			X	X					X			
24. Prepared Presentation		X	X		X													X			
25. Promotional Graphics		X	X	X	X		X		X			X						X		X	
26. SciVis		X		X					X			X						X			
27. Structural Engineering		X	X						X	X	X	X	X	X					X		X
28. System Control Technology				X					X	X	X	X	X					X	X	X	X
29. Technical Sketching and Application									X	X		X									
30. Technology Bowl														X	X	X	X	X	X	X	X
31. Technology Problem Solving									X		X	X									
32. Transportation Modeling		X	X	X					X	X	X	X	X					X		X	
33. Video Game Design									X	X	X	X	X					X			
34. Webmaster									X	X	X	X	X	X				X			

CRITERIA FOR ACCREDITING ENGINEERING PROGRAMS [Accreditation Board for Engineering and Technology (ABET, Inc.)]

Engineering programs must demonstrate that their students attain the following outcomes:

A. An ability to apply knowledge of mathematics, science and engineering
B. An ability to design and conduct experiments, as well as to interpret data
C. An ability to design a system, component, or process to meet desired needs
D. An ability to function on multi-disciplinary teams
E. An ability to identify, formulate and solve engineering problems
F. An understanding of professional and ethical responsibility
G. An ability to communicate effectively
H. The broad education necessary to understand the impact of engineering in global and social contexts
I. A recognition of the need for and an ability to engage in life-long learning
J. A knowledge of contemporary issues
K. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice

The outcomes listed above are found in *2008-2009 Criteria for Accrediting Engineering Programs* and used with permission from the Engineering Accreditation Commission of ABET, Inc.

(The outcomes were designed for higher education engineering programs but are relevant for middle school and high school level engineering-related courses.)

CRITERIA FOR ACCREDITING ENGINEERING PROGRAMS (ABET, INC.)

Standard	Event / Standard Letter	A	B	C	D	E	F	G	H	I	J	K
A. An ability to apply knowledge of mathematics, science and engineering B. An ability to design and conduct experiments, as well as to interpret data C. An ability to design a system, component, or process to meet desired needs D. An ability to function on multi-disciplinary teams E. An ability to identify, formulate and solve engineering problems F. An understanding of professional and ethical responsibility G. An ability to communicate effectively H. The broad education necessary to understand the impact of engineering in global and social contexts I. A recognition of the need for and an ability to engage in life-long learning J. A knowledge of contemporary issues K. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	1. Animatronics	X			X	X						X
	2. Architectural Renovation	X		X	X	X	X	X	X	X	X	X
	3. Biotechnology Design	X	X	X	X	X	X	X	X	X	X	X
	4. Career Preparation	X					X	X	X			
	5. Chapter Team								X	X		
	6. Computer-Aided Design (CAD) 2D, Architecture	X				X		X	X	X	X	X
	7. Computer-Aided Design (CAD) 3D, Engineering	X				X		X	X	X	X	X
	8. Computer Numeric Control (CNC) Production	X	X	X	X	X	X	X	X	X	X	X
	9. Debating Technological Issues						X	X	X			
	10. Desktop Publishing		X					X				
	11. Digital Video Production						X	X		X		
	12. Dragster Design	X	X	X		X	X	X				X
	13. Engineering Design	X	X	X	X	X	X	X	X	X	X	X
	14. Essays on Technology	X	X				X				X	
	15. Extemporaneous Speech						X	X	X			
	16. Fashion Design				X	X			X			
	17. Flight Endurance	X	X	X		X	X	X		X		X
	18. Future Technology Teacher	X		X			X	X			X	
	19. Manufacturing Prototype	X	X	X	X	X	X	X				
	20. Music Production							X				
	21. On Demand Video				X		X	X				
	22. Open Source Software Development	X	X	X	X	X	X	X	X	X	X	X
	23. Photographic Technology	X					X	X		X	X	X
	24. Prepared Presentation							X	X	X		
	25. Promotional Graphics	X					X	X				
	26. SciVis		X		X							X
	27. Structural Engineering	X	X	X	X	X	X	X	X	X	X	X
	28. System Control Technology	X	X	X	X	X	X	X	X	X	X	X
	29. Technical Sketching and Application					X	X	X				
	30. Technology Bowl	X	X	X		X			X		X	X
	31. Technology Problem Solving	X		X								
	32. Transportation Modeling	X	X	X		X	X	X				X
	33. Video Game Design			X	X		X	X		X		
	34. Webmaster			X	X			X				

PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS

1. Numbers and operations
   A. Understand numbers, ways of representing numbers, relationships among numbers and number systems
   B. Understand meanings of operations and how they relate to one another
   C. Compute fluently and make reasonable estimates
2. Algebra
   A. Understand patterns, relations, and functions
   B. Represent and analyze mathematical situations and structures using algebraic symbols
   C. Use mathematical models to represent and understand quantitative relationships
   D. Analyze change in various contexts
3. Geometry
   A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
   B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems
   C. Apply transformations and use symmetry to analyze mathematical situations
   D. Use visualization, spatial reasoning and geometric modeling to solve problems
4. Measurement
   A. Understand measurable attributes of objects and the units, systems and processes of measurement
   B. Apply appropriate techniques, tools and formulas to determine measurements
5. Data analysis and probability
   A. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them
   B. Select and use appropriate statistical methods to analyze data
   C. Develop and evaluate inferences and predictions that are based on data
   D. Understand and apply basic concepts of probability
6. Problem solving
   A. Build new mathematical knowledge through problem solving
   B. Solve problems that arise in mathematics and in other contexts
   C. Apply and adapt a variety of appropriate strategies to solve problems
   D. Monitor and reflect on the process of mathematical problem solving
7. Reasoning and proof
   A. Recognize reasoning and proof as fundamental aspects of mathematics
   B. Make and investigate mathematical conjectures
   C. Develop and evaluate mathematical arguments and proofs
   D. Select and use various types of reasoning and methods of proof
8. Communication
   A. Organize and consolidate mathematical thinking through communication
   B. Communicate mathematical thinking coherently and clearly to peers, teachers and others
   C. Analyze and evaluate the mathematical thinking and strategies of others
   D. Use the language of mathematics to express mathematical ideas precisely

9. Connections
    A. Recognize and use connections among mathematical ideas
    B. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole
    C. Recognize and apply mathematics in contexts outside of mathematics
10. Representation
    A. Create and use representations to organize, record, and communicate mathematical ideas
    B. Select, apply, and translate among mathematical representations to solve problems
    C. Use representations to model and interpret physical, social and mathematical phenomena

PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS																																				
Event	Standard Number	1A	1B	1C	2A	2B	2C	2D	3A	3B	3C	3D	4A	4B	5A	5B	5C	5D	6A	6B	6C	6D	7A	7B	7C	7D	8A	8B	8C	8D	9A	9B	9C	10A	10B	10C
1. Animatronics													X	X						X	X												X			
2. Architectural Renovation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X						
3. Biotechnology Design		X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X					X	X	X							
4. Career Preparation																																				
5. Chapter Team																																				
6. Computer-Aided Design (CAD) 2D, Architecture									X	X		X	X	X																			X			
7. Computer-Aided Design (CAD) 3D, Engineering									X	X		X	X	X																			X			
8. Computer Numeric Control (CNC) Production									X	X	X	X	X	X					X	X	X	X														
9. Debating Technological Issues				X																													X	X	X
10. Desktop Publishing													X	X																						
11. Digital Video Production				X									X	X																			X			
12. Dragster Design				X				X	X	X		X	X							X	X											X	X		X	X
13. Engineering Design		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14. Essays on Technology				X											X	X	X	X																		
15. Extemporaneous Speech																																				
16. Fashion Design													X	X																						
17. Flight Endurance			X	X	X				X			X	X	X			X	X	X	X	X	X			X		X	X	X				X			
18. Future Technology Teacher				X																X	X					X							X		X	
19. Manufacturing Prototype													X	X						X	X															
20. Music Production													X	X																						
21. On Demand Video													X	X																				X			
22. Open Source Software Development																			X	X	X	X	X	X	X	X	X	X	X	X						
23. Photographic Technology																					X						X		X							
24. Prepared Presentation																														X			X			
25. Promotional Graphics												X		X							X															
26. SciVis		X	X	X	X			X				X								X	X					X			X	X		X				X
27. Structural Engineering			X	X	X	X	X		X	X	X	X	X	X				X			X	X					X	X	X	X		X		X	X	
28. System Control Technology		X	X	X	X	X	X		X	X	X	X					X	X	X	X	X	X		X	X	X	X	X			X	X	X			
29. Technical Sketching and Application									X	X	X	X	X	X					X								X		X							
30. Technology Bowl									X	X		X	X	X						X	X									X		X	X			
31. Technology Problem Solving													X	X						X	X															
32. Transportation Modeling							X	X		X			X	X						X	X										X		X			X
33. Video Game Design			X									X	X	X																						
34. Webmaster																				X	X															

TSA AND THE LEADERSHIP COMPONENT

At one time, the art of learning and practicing leadership skills, such as good communication, teamwork, problem solving, etc. was designated for those students interested in running for or holding a TSA chapter, state, or national office.

Now, however, acquiring leadership skills in an important focus for all TSA members. By learning and absorbing core leadership skills, young people are empowered to succeed not only in school, but in their careers and in life. (See the *Core Leadership Skills* listed in the side bar.)

TSA has identified core leadership skills [as based on *Standards for Technological Literacy* [a publication of the International Technology and Engineering Educators Association (ITEEA/ITEA)] that students learn by participating in TSA's competitive events program. This effort resulted in the identification of ten leadership skills underlying in all TSA high school events. In the *2013 & 2014 High School TSA Competitive Events Guide*, three primary leadership skills (and a number of secondary skills) promoted in each competition are identified following the evaluation section of each event's regulations.

In order to bring these skills to the classroom and chapter, TSA has created leadership lessons based on the core leadership skills as they relate to TSA competitions. In this guide, two lessons are suggested for each of the primary skills learned in individual competitions. These lessons can be used during the school day or when chapter meetings occur. To realize the maximum benefit, use the leadership lessons in conjunction with TSA's competitions.

The high school leadership lessons section on the Total TSA CD provides five, easy-to-use, experiential lessons for each core leadership skill. These lessons enhance chapter dynamics, introduce new concepts, engage students in activities and, of course, promote leadership. Advisors may modify lessons to adapt to personal teaching style. Students are provided with a leadership portfolio that includes pre- and post-assessment tools that allow them to track their attainment of skills, and a page for recording important information, comments, etc. A glossary of leadership skills and a sample "Leadership Lesson" follow.

☑ Core leadership skills learned through TSA competitive events:

creative thinking

critical thinking

communication

decision making

ethics

evaluation

organization

problem solving

self-esteem

teamwork

TSA believes that acquiring leadership skills is critical to the success of young people in technology. The high school leadership lessons portion of this CD presents TSA advisors and students with a new venue for teaching and learning these all-important skills.

GLOSSARY OF LEADERSHIP SKILLS

PRIMARY LEADERSHIP SKILLS LEARNED THROUGH PARTICIPATION IN THE TSA COMPETITIVE EVENTS PROGRAM

The following leadership skills are derived from the Technology Content Standards of the International Technology and Engineering Educators Association (ITEEA/ITEA) publication: ***Standards for Technological Literacy, Content for the Study of Technology.***

Communication – The successful transmission of information through a common system of symbols, signs, behavior, speech, writing, or signals

Creative thinking – The ability or power used to produce original thoughts and ideas based upon reasoning and judgment

Critical thinking – The ability to acquire information, analyze and evaluate it, and reach a conclusion or answer by using logic and reasoning skills

Decision making – The act of examining several possible behaviors and selecting from them the one most likely to accomplish the individual's or group's intention. Cognitive processes such as reasoning, planning, and judgment are involved

Ethics – Conforming to an established set of principles or accepted professional standards of conduct

Evaluation – 1.The collection and processing of information and data in order to determine how well a design meets the requirements and to provide direction for improvements. 2. A process used to analyze, evaluate, and appraise a student's achievement, growth and performance through the use of formal and informal techniques

Organization – The act or process of organizing or being organized. Good organization will not only ensure success of a program, but without it, the success can be limited or fail to materialize at all

Problem solving – The process of understanding a problem, devising a plan, carrying out the plan, and evaluating the plan in order to solve a problem or meet a need or want

Self-esteem – Confidence and satisfaction in oneself; trusting one's ability and instincts

Teamwork – The process that allows individuals to pool their strengths in order to arrive at better solutions to problems with all subordinating personal prominence to the efficiency of the whole

DECISIONS, DECISIONS, DECISIONS

OBJECTIVE

Students will understand four types of group decision making processes and determine when to use each process appropriately.

TIME

45 minutes (10 minutes to discuss the four group decision making processes and provide instruction for the activity, 20 minutes for the activity, 15 minutes to review/discuss results)

MATERIALS

16 sheets large easel paper

4 markers for each station

masking or scotch tape to hang the sheets of easel paper in the room

ACTIVITY

Before students enter the room, prepare the easel paper by writing each of the four decision making processes on four sheets of paper (i.e., four sheets with "Autocratic" on top, four sheets with "Democratic" on top, and so forth for a total of 16 sheets). Hang one of the respective topic sheets in each corner of the room, with the three other same-titled sheets at a nearby table/desk.

When students enter the room, tell them that the purpose of this activity is for them to align the four decision-making processes with various situations. Discuss each of the four decision-making processes described below. Have students take notes in their leadership portfolios.

1. Autocratic – one person makes the decision on behalf of the group
2. Democratic – the group participates in the decision by voting to resolve their differences; each member has an equal say in the outcome
3. Consensual – after thorough discussion, the group arrives at a resolution that each member can endorse
4. Laissez-faire – decision making is left to the initiative of the group; if the group chooses to make a decision, it will, and if not, a decision will not be made

Divide the students into four teams of equal size, and have each team stand and move to a decision-making-process corner. Provide instructions to the group:

- At the word "go," students are to think of example situations and/or occupations for which a given group decision-making process is needed to be successful. (For example, a doctor may need to make an autocratic decision during surgery.)
- Students will have five minutes to record brief notes on the easel paper for each example, in order to provide specifics when going back to review.

- At the end of five minutes, students will remove their completed sheet of easel paper and replace it with a new sheet from the remaining pile of three. Students will move clockwise to the next station. Once the teams are in place, a new round will begin.
- This process will be repeated at each station.

DISCUSSION POINTS

When the activity is complete, each team will be responsible for presenting the notes (all four sheets) for one of the group decision-making processes. Encourage students to offer thoughts and examples related to their daily lives as students and leaders (Did the process used in a given situation gain the desired result? Did the process cause friction among the group members? Was the process that was used the obvious choice? etc.), and as participants in TSA's competitive events. Would the use of a different group decision making process have resulted in a better competition outcome? Knowing what you now know about group decision making, would you have chosen a different process? Have students share and record their thoughts and examples in their leadership portfolios.

Choosing a career is one of the more important decisions made in life. This section of the guide may help students focus on career areas that appeal to them in the world of work, as well as show them how their involvement in TSA's program of activities has the ability to guide them toward those areas.

Career clusters (categories) are groups of similar occupations and industries. *The 16 Career Clusters* chart, developed by the U.S. Department of Education to organize career planning and help schools better prepare learners for their futures, offers general information about career categories and the kinds of work opportunities prominent in those areas. The *TSA Competitions and the 16 Career Clusters* grid illustrates the interconnectedness between individual TSA competitions and the 16 career categories. Use these together as a starting point to help your students become informed about careers and develop a plan to reach their life goals.

The Career Clusters icons and definitions are being used with permission of the States' Career Clusters Initiative, 2009, www.careerclusters.org

The 16 Career Clusters

	The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. **(A)**
	Careers in designing, planning, managing, building and maintaining the built environment. **(B)**
	Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. **(C)**
	Business Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy. **(D)**
	Planning, managing and providing education and training services, and related learning support services. **(E)**
	Planning, services for financial and investment planning, banking, insurance, and business financial management. **(F)**
	Executing governmental functions to include Governance; National Security; Foreign Service; Planning; Revenue and Taxation; Regulation; and Management and Administration at the local, state, and federal levels. **(G)**
	Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development. **(H)**
	Hospitality & Tourism encompasses the management, marketing and operations of restaurants and other food services, lodging, attractions, recreation events and travel related services. **(I)**
	Preparing individuals for employment in career pathways that relate to families and human needs. **(J)**
	Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services. **(K)**
	Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services. **(L)**

	Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering. **(M)**
	Planning, managing, and performing marketing activities to reach organizational objectives. **(N)**
	Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services. **(O)**
	Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance. **(P)**

TSA COMPETITIONS AND THE 16 CAREER CLUSTERS

Event / Cluster letter	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Animatronics			X						X				X			
Architectural Renovation	X	X		X		X	X	X	X	X	X		X		X	
Biotechnology Design	X	X						X					X		X	X
Career Preparation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chapter Team:				X			X					X				
Computer-Aided Design (CAD) 2D, Architecture		X	X								X	X				
Computer-Aided Design (CAD) 3D, Engineering		X	X								X	X				
Computer Numeric Control (CNC) Production					X			X			X		X		X	X
Debating Technological Issues								X						X	X	
Desktop Publishing			X								X					
Digital Video Production			X						X		X				X	
Dragster Design										X						
Engineering Design	X	X	X	X	X	X	X	X	X			X	X	X	X	X
Essays on Technology			X	X												
Extemporaneous Speech			X	X	X		X							X		
Fashion Design			X										X			
Flight Endurance															X	
Future Technology Teacher					X						X					
Manufacturing Prototype	X	X		X	X				X				X		X	
Music Production			X								X			X		
On Demand Video			X								X			X		
Open Source Software Development			X								X	X	X		X	X
Photographic Technology	X		X		X			X	X		X		X	X	X	
Prepared Presentation			X	X			X									
Promotional Graphics			X							X						
SciVis			X								X				X	
Structural Engineering		X					X		X			X	X		X	X
System Control Technology													X		X	
Technical Sketching and Application		X											X			
Technology Bowl	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Technology Problem Solving	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Transportation Modeling										X						
Video Game Design			X								X					
Webmaster			X								X					

HIGH SCHOOL

National TSA Conference Competitive Events

Animatronics
Architectural Renovation
Biotechnology Design
Career Preparation
Chapter Team
Computer-Aided Design (CAD) 2D, Architecture
Computer-Aided Design (CAD) 3D, Engineering
Computer Numerical Control (CNC) Production
Debating Technological Issues
Desktop Publishing
Digital Video Production
Dragster Design
Engineering Design
Essays on Technology
Extemporaneous Speech
Fashion Design
Flight Endurance
Future Technology Teacher
Manufacturing Prototype
Music Production
On Demand Video
Open Source Software Development
Photographic Technology
Prepared Presentation
Promotional Graphics
SciVis
Structural Engineering
System Control Technology
Technical Sketching and Application
Technology Bowl
Technology Problem Solving
Transportation Modeling
Video Game Design
Webmaster

☑ New and updated events:

Architectural Renovation

Computer Numerical Control (CNC) Production

Open Source Software Development

Every two years the specifics of many events are changed, keeping the competitions dynamic!

THE OFFICIAL TSA COMPETITIVE EVENT RATING FORM/RUBRIC

The *2013 & 2014 High School Technology Activities, National TSA Conference Competitive Events Guide* contains a new feature: a revised rating form/rubric for each competition. Rubrics have been embraced by STEM educators because they provide a sure way to evaluate subjective assessments. The use of descriptors for each criterion being measured in rubrics allows them to impart consistency and greater understanding to the evaluation process.

The official TSA rating form/rubric is the initiative of the TSA Competition Regulations Committee (CRC) management team to 1) add universal rigor and relevance to TSA's competitive events, and 2) address the desire of students to have quality feedback about their performance in these events. Included for each competition in the guide, the new rating form/rubric provides a way for TSA members to better prepare for competitions, for advisors to carefully assist them in the process, and for judges to effectively evaluate participants and their entries with consistency.

The rating forms/rubrics in the guide are composed of clear and concise descriptors for three levels of performance (minimal, adequate and exemplary) for the evaluative criteria for each competitive event. It is the hope of national TSA that the CRC initiative and the new rating forms/rubrics will provide numerous benefits to the TSA community, not the least of which is an enhanced educational experience for our greatest asset – TSA student members.

OVERVIEW

Animatronics refers to a robotic device that emulates a human or an animal, or brings an inanimate object "to life." Disney and Six Flags theme parks use animatronics in some of their attractions. Participants will produce an animatronics device complete with an appropriate display. The animatronics device must use control technology in its performance. The device must not suggest anything that is inappropriate by language, sound or movements. Evaluation is based on performance, device artisanship, and documentation of design efforts.

PURPOSE

Students must work as part of a team to demonstrate knowledge of mechanical and control systems by designing, fabricating, and controlling an animatronics device that will communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject, or concept. Sound, lights and surrounding environment are to accompany the device.

ELIGIBILITY

A. One (1) team entry per chapter is permitted.

B. There is a limit of three (3) representatives per team for the presentation/interview.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Participants are given five (5) minutes to set up their presentation equipment prior to their presentation.

C. The presentation must last no longer than five (5) minutes.

D. The presentation time begins when students give background information about the project from their notebook and must conclude on or before the five (5) minute time limit. Five (5) points will be deducted for exceeding the time limit. The judges' interview is not considered part of the presentation time.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants will check in at the time and place stated in the conference program.

B. At check-in, each team will select a presentation/interview time from the available times posted. When selecting a demonstration time, teams should avoid conflicts with other events for which team members are registered.

C. Participants report for the presentation/interview at the selected demonstration time with the project, display and notebook. Only participants are allowed to set up equipment and present the project.

D. No more than two (2) team members pick up their entry from the display area at the time and place stated in the conference program.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. The display may not exceed 15" deep x 3' wide x 4' high.

B. The animatronics device must have three (3) or more separate movements. A skin or covering is required. The covering must be removable in order to show the judges the skeleton and mechanics of the project. Fluid power, gearing systems, linkages, and/or cabling systems, etc. should be incorporated to aid in the movement of the device.

C. Sound, lights and sensors must be incorporated in the project model.

D. The use of fluid power must be incorporated to aid in the movement of the animatronics device. If no fluid power is used, the animatronics device will lose ten (10) points. To be awarded points, the model must demonstrate movement provided by fluid power.

E. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

   1. Title page with the event title, the conference city and state, the year and the team/chapter ID number

(identification numbers are issued on site and therefore may be handwritten); one (1) page
2. Table of contents; pages as needed
3. Purpose of the animatronics device; one (1) page
4. Design and test log, including date, test duration, problems, redesigns and other comments; maximum five (5) pages
5. List of resources that includes materials, parts, software, hardware and sources of information used in the development of the project; one (1) page
6. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (See Plan of Work log); one (1) page
7. Permission letters for copyrighted material, if incorporated; pages as needed

F. The animatronics device may not contain a wet cell battery.

G. The animatronics device may use AC power, but the participant will only have access to an AC outlet during the demo/presentation.

H. Should the device suggest anything that is inappropriate by language, sound or movement, immediate disqualification will result.

I. A team that fails to appear for its demonstration forfeits judging.

EVALUATION

Teams are evaluated on their written work, model function, programming structure and efficiency. Refer to the official rating form for detailed information.

NOTES

You can learn more about animatronics by visiting the following:

www.animatronica.co.uk/default.asp
www.animalmakers.com
www.garnerholt.com
www.dreamation.com/Animatronics.htm

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CRITICAL THINKING — Students use prior knowledge to accomplish a task. Suggested leadership lessons: *And the Answer Is* and *Figure it Out*
- PROBLEM SOLVING — Students work out any animation design flaws. Suggested leadership lessons: *Finding the Right Way* and *Problem Solving Steps*
- TEAMWORK — Students delegate tasks based on individual skills. Suggested leadership lessons: *Effective Meetings* and *Restaurant Business Plan*

Additional leadership skills promoted in this event: communication, creative thinking, organization, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Amusement park robotics maintenance engineer
Electronic technician
Film industry special effects engineer
Industrial designer
Toy developer

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

ANIMATRONICS
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistant for check-in and notebook collection, one (1)

C. Evaluators, two (2) or more for the notebook evaluation and two (2) or more for the presentation/interview [preferably same two (2)]

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms, one (1) set for each event evaluator
   3. List of entries, with finalist report
   4. List of evaluators/assistants
   5. Extension cord (25' minimum length)
   6. One (1) stopwatch
   7. Pens for evaluators
   8. Notepads for evaluators
   9. Calculators, one (1) for each event evaluator
   10. Results envelope

B. Tables for presentation

C. Table and chairs for evaluators

☑ Be sure to seal the results in the envelope provided and return them to the CRC room.

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. At least one (1) hour before the event is to begin, meet with your evaluators and check-in personnel to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the CRC event manager before the event begins.

D. Check in all entries at the time stated in the conference program. The coordinator should have each team sign up for a specific time for its presentation/interview (within the time frame designated for the event). Once each team has scheduled a presentation/interview time, make sure that the participants understand that they are to return fifteen (15) minutes before their scheduled presentation time.

E. At a designated time evaluators individually evaluate and score entry notebooks prior to presentations.

F. Notify the event manager immediately of any team reporting for the presentation portion of the event that is not on the entry list. A team not on the entry list is permitted to participate, but the coordinator MUST confirm the team's eligibility. If it is found that the team is not registered for the event, the team is disqualified.

G. Evaluators independently assess a team's presentation/interview. Evaluators may take notes, but evaluation occurs only after all team members have left the event room.

H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

I. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

J. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

ANIMATRONICS

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Notebook (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation E (X1)	Notebook is unorganized and/or is missing three or more components.	Notebook is missing two components, and/or it is loosely organized.	Only one or no components are missing in the notebook, and content and organization are clearly evident.	
Purpose and description (X1)	Purpose and description of the animatronics design idea generation are unclear, and/or major grammatical errors are evident.	Purpose and description are explained appropriately, but some grammatical errors are evident, and/or the writing is not concise.	Purpose and description of the animatronics design are clear and concisely written; presentation interests the reader; no or few grammar mistakes are evident.	
Design and test log (X1)	Design and test log is illogical and/or shows no evidence of growth from the initial design to the final solution; log is unorganized and/or missing two or more of the following components: date of test(s), test duration, and/or problems/redesigns.	All components of the design and test log are incorporated; however, little evidence is shown that the log was used to shape the design of the animatronics device -- this is due to the log's illogical format.	The log is neat, organized, and concise; it includes all components and shows evidence that it was used to shape the animatronics design from conception through redesign(s) and then to completion.	
			SUBTOTAL (30 points)	

Presentation (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization and clarity (X1)	Team seems unprepared for the interview and is unorganized; team's presentation is full of illogical thoughts that lack understanding and clarity.	Team is prepared for the interview but is somewhat disorganized in its presentation to judges; team's presentation thesis is, for the most part, logical and/or clear.	Team's presentation and interview with judges are well organized; the interview is concise and logical, with a clear explanation of the thesis and pertinent issues.	
Knowledge (X1)	Team members seem to have little understanding of the concepts in their project; vague interview answers are provided.	Team members have a generalized understanding of the concepts discussed and answer questions well.	Evidence is clear that team members have a thorough understanding of the concepts discussed; they also seem to be truly considerate of the issues and the future.	
Team participation (X1)	Only one person in the group communicates with judges; there is no participation from other team members.	Team members participate but only one member seems to fully understand the concepts.	Team members seem to fully understand the concepts and share an equal role in the interview.	
			SUBTOTAL (30 points)	

ANIMATRONICS (continued)				
Model Appearance (30 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Creativity (X1)	Model lacks creativity; no or very few design principles are integrated in model.	Some elements of creativity are evident but essential design principles are missing or are not used effectively.	Model exudes creativity; essential design principles and elements are integrated.	
Aesthetics and artisanship (X1)	Work is unorganized and/or sloppy; model seems to be an afterthought and/or thrown together.	Evidence that some layout and design principles are integrated into the model, but the aesthetics could be improved with more effort.	There is exemplary use of layout and design principles; artistic and aesthetic values are incorporated.	
Originality (X1)	Model lacks imagination, originality and artistic detail.	Model is effective and innovative, but it lacks depth and imagination.	Model is inspiring, inventive, resourceful and very motivating.	
			SUBTOTAL (30 points)	
Model Function (60 points possible)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Skin and skeletal function	There is no point value for the skin and skeletal function of the animatronics model. The model's skin must be removable in order to reveal skeletal function and mechanics located beneath the skin. If the skin is not removable then a rules violation will occur.			
Movements (X1)	The model has no movements or only one separate movement.	The model has three movements, but they are not separate and/or the mechanics of each movement operate in the same way.	All movements are included; an exemplary use of movement mechanics permits a different range of motion for each movement.	
Sound inclusion (X1)	There is no sound included, or the design suggests that the inclusion of sound was an afterthought to the model.	Sound is included, but there is little evidence that its effect contributes to the overall function of the model.	The inclusion of sound is creative and effectively contributes to the design and performance of the model.	
Light inclusion (X1)	No light is included, or the design suggests that the inclusion of lights was an afterthought to the model.	Light is included, but there is little evidence that its effect contributes to the overall function of the model.	The inclusion of light is creative and effectively contributes to the design and performance of the animatronics model.	
Sensor inclusion (X1)	No sensors are included, or the design suggests that the inclusion of sensors was an afterthought to the model.	Sensors are included, but there is little evidence that their inclusion contributes to the overall function of the model.	The inclusion of sensors (and the interactivity that sensors allow for) in the model is creative and effectively contributes to its design and performance.	
Fluid power system inclusion (X1)	A fluid power system is included, but it doesn't function.	A fluid power system is included, but there is little evidence that it contributes to the overall function of the model.	The inclusion of fluid power system(s) and the fluidity of movement that these systems provide in an animatronics model are creative and effectively contribute to its design and performance.	
Use of gears, linkages, cabling, etc. (X1)	The use of gears, linkages, cabling, etc. is not apparent or is improperly incorporated into the model; the team shows little understanding of how to properly use these systems in the model.	Most gears, linkages, cabling systems, etc. are incorporated and used properly in the model; some systems should be redesigned for more efficient use of materials.	Efficient and varied use of gears, linkages, cabling systems, etc. is apparent and properly used in the model; there is evidence of a complete understanding of these systems.	
			SUBTOTAL (60 points)	

ANIMATRONICS (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
Time violation (a deduction of five points total will be incurred for exceeding the five-minute presentation time limit). Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (150 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

ARCHITECTURAL RENOVATION

OVERVIEW

Participants develop a set of architectural plans and related materials for an annual architectural renovation design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design. A specific design problem will be provided on the TSA website each year.

PURPOSE

Students must demonstrate an understanding of and aptitude for architectural design, the development of plans, LEED (Leadership in Energy and Environmental Design) applications through construction and renovation, and modeling techniques and practices.

ELIGIBILITY

Participants are limited to one (1) individual or team per chapter, one (1) entry per individual or team.

TIME LIMITS

Entries must be started and completed during the current school year.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants access the design problem for the specific year's national conference on the TSA website. They then work to complete their entry according to the event regulations.

B. Participants check in their entries at the time and place stated in the conference program. No more than two (2) team members set up the display.

C. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

☑ Participants in this event should concentrate their efforts on understanding all aspects of the design challenge prior to beginning the planning and design process.

Visit the U.S. Green Building Council website (www.usgbc.org) to become familiar with the council and its LEED green building programs.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

D. The individual semifinalist or two (2) representatives from each semifinalist team report to the event area at the time and place stated in the conference program. Semifinalists will sign up for an interview time and arrive for the interview at their specified time.

E. Semifinalists will use their models and documentation for reference during the interview process.

F. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

REGULATIONS

A. The architectural model must be placed on a site board no larger than 24" square.

B. A documentation notebook is required and must be submitted with the display. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. A description of how the team interpreted the design challenge and an explanation of the style and merits of the team's design concepts; one (1) page
4. Demolition plan for the existing structure; maximum of two (2) pages
5. List and describe how each of the following construction systems (any and all that apply) have been incorporated and applied to the team's solution: building codes, building permits, construction methods and materials, electrical wiring, plumbing, HVAC, and site requirements; maximum of six (6) pages.
6. A LEED assessment for the project, according to the USGBC standards for green building; one (1) or more pages
7. A schedule of finish materials for all exterior and interior surfaces of the architectural design (this is not a list of the model construction materials); one (1) page
8. A reproduction copy of original hand drawings and printer/plotter-generated copies of CAD drawings for the following required drawings [each drawing to be submitted on maximum drawing sheet cut size B—(11" x 17") with

☑ A model is neither a "miniature building," nor a mere illustration of a design concept. It serves as an assessment tool for the design. Too much detail can obscure important qualities, and not enough detail may generate an overly vague impression.

appropriate scale size noted on the drawing]; pages as needed
   a. original floor plan/s
   b. sectional detail drawing
   c. foundation plan
   d. roof plan
   e. landscape plan
9. Plan of Work log (teams only) that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (See Plan of Work Log); one (1) page
10. A 3-D modeling/rendering drawing of the team's final design with appropriate details included; drawing sheet size B, 11" x 17"; one (1) page
11. List of resources/references; pages as needed

C. Nothing that identifies the participant's name, school, chapter, or state can be included on the model or notebook.

D. Model construction concepts, materials, techniques and applications:
   1. Balsa wood, illustration board, or similar materials are suggested for (but not limited to) use as interior walls, exterior walls, and roof construction.
   2. Foam core board that is ½" thick or greater is recommended for use as the site board for the model.
   3. Dowels may be used to represent columns or circular components.
   4. Participants should pay close attention to the scale of all materials as they relate to the scale of the model.
   5. The model may not include any electrical or battery powered enhancements.

No glass or liquid may be used as part of any model.

☑ Model construction – All participants in this event are encouraged to contact a local architect or an architectural design school to research and observe actual models in order to gain a greater perspective on how to approach the construction and assembly of an architectural model.

EVALUATION

Evaluation is based on points earned for the notebook, the design process, the architectural model, and the semifinalist interview. For more specific information, please refer to the official rating form.

☑ Participants are encouraged to review all aspects of the official rating form to more clearly understand how their entry will be evaluated and judged.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students communicate ideas in order to develop a plan. Suggested leadership lessons: *Personality Types* and *Put It Together*
- CREATIVE THINKING — Students create original ideas based on specifications. Suggested leadership lessons: *HAT To Be Creative* and *The Leadership Chronicles*
- CRITICAL THINKING — Students research ideas and develop a plan. Suggested leadership lessons: *Critical Thinking Tips* and *The Hidden Message*

Additional leadership skills promoted in this event: evaluation, organization, problem solving, self-esteem, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Appraiser
Architect
Construction manager
Interior designer
Urban and regional planner

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

ARCHITECTURAL MODEL
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for check-in, two (2)

C. Evaluators for displays, two (2) or more

D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

A. Coordinator's notebook, containing
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries, with finalist report
   4. List of evaluators/assistants
   5. Pens for evaluators
   6. Notepads
   7. Semifinalist list for posting
   8. Results envelope

B. Tables for entries

C. Tables and chairs for evaluators

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number in the lower right-hand corner of each display and notebook. Position displays for evaluation and viewing. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Evaluators average their scores to determine the twelve (12) semifinalists.

I. Prepare a list of the twelve (12) semifinalists in random order and submit it to the CRC chairperson for posting.

J. Inspect the area in which the interviews are to take place. There should be tables and chairs for the evaluators.

K. Meet with your semifinalist evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the interviews begin.

L. Conduct semifinalist interviews.

M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

ARCHITECTURAL RENOVATION

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Documentation (120 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1, X2 or X3 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14points; and "adequate" score of 7 for an X3 criterion = 21 points.)				
Notebook components See Regulation B (X1)	Notebook is unorganized and/ or is missing three or more components.	Notebook is missing two components, and it is loosely organized.	Only one or no components are missing in the notebook; content and organization are clearly evident.	
Description of design interpretation (X1)	The description and merits of the design and the explanation of the style are lacking and/or contain major grammatical/spelling errors.	The description and merits of the design and explanation of the style are included, but they are unclear and/or contain some grammatical/spelling errors.	The description and merits of the design and explanation of the style are clear, effective and convincing, and without grammatical/spelling errors.	
Demolition plan (X1)	The demolition plan lacks key elements and explanation.	The demolition plan is included, but lacks clarity and relevance.	The demolition plan is completely detailed and is clear and effective.	
Construction systems See Regulation B5 (X1)	There is little or no evidence of attention to the various applicable construction systems.	Most, but not all, construction systems are addressed, but they are not well presented.	All applicable construction systems are addressed, clearly documented and well presented.	
Schedule of finish materials (X1)	Many elements of the interior and exterior finish schedules are missing or incomplete.	Most, but not all, elements of the interior and exterior finish schedules are included.	All interior and exterior finish schedules/materials are detailed and explained in an exemplary manner.	
LEED Assessment (X1)	A minor attempt has been made to incorporate a LEED assessment of the design.	Many, but not all, aspects of a LEED assessment of the design are provided and documented.	A complete and accurate LEED assessment of the design is included.	
Drawings Floor Sectional Foundation Roof Landscape (X2)	Two or more of the required drawings are missing and are not in the proper format.	Most, but not all, of the required drawings are included and are in the proper format.	All required drawings are included and are exemplary in format.	
3D modeling or rendering (X2)	The drawing is missing or poorly executed and does not use appropriate/necessary details of the design challenge.	The drawing is included but is missing some key elements and necessary details of the design challenge.	The drawing completely and effectively represents all aspects of the design challenge, including necessary details.	
Resources/references (X1)	There is little or no effort to provide resources and references.	Several resources and references are included.	There is clear evidence of the appropriate use of applicable resources and references.	
Plan of Work log (X1)	The Plan of Work log lacks major elements of the plan documentation.	The Plan of Work log is somewhat complete, but it lacks sufficient documentation.	The Plan of Work log is included and accurately reflects the time and work necessary for the project.	
			SUBTOTAL (120 points)	

ARCHITECTURAL RENOVATION (continued)				
Design Challenge (50points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Effectiveness of design (X2)	The design is ineffective in meeting the needs of the challenge.	The design is somewhat effective in meeting the needs of the challenge.	The design is exemplary and clearly effective in meeting the needs of the challenge.	
Access and flow (X1)	The design reflects an ineffective traffic flow pattern and use of space to gain access to the original structure and addition.	The design reflects a somewhat effective traffic flow pattern and use of space to access the structure and addition.	The design presents a clear, effective traffic flow pattern and full consideration of the use of space.	
Aesthetic appeal (X1)	There is little evidence of consideration of aesthetics and curb appeal in the design.	There is some evidence that aesthetics and curb appeal have been considered in the design.	There is clear evidence that aesthetics and curb appeal are fully and effectively integrated into the design.	
Creativity and innovation (X1)	The design lacks originality and exhibits few, if any, creative and/or innovative applications.	Some unique and innovative concepts are incorporated, but they lack effectiveness in the overall design.	Unique, creative and innovative approaches have met the challenges of, and have been incorporated into, the design.	
			SUBTOTAL (50 points)	
Model (50) points				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Quality of construction (X1)	Construction is of poor quality and appearance, with little or no attention to neatness.	Construction is somewhat neat and has appropriate quality and appearance.	Construction is of excellent quality and exemplary appearance.	
Use of materials (X1)	The choice of materials is ineffective and inadequate for the type and scale needed.	There is effective choice of materials but not enough attention to scale.	There is effective use of materials and accurate choice of scale.	
Representation of the design challenge (X3)	Attempts to meet the design challenge requirements are poor and ineffective.	There is a somewhat effective attempt to meet the requirements of the design challenge.	The design is complete and effective, and it incorporates and meets the requirements of the design challenge.	
			SUBTOTAL (50 points)	
Finalist Interview (60 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	Participants seem unorganized and unprepared for the presentation and interview.	Participants are generally prepared for the interview, but they are somewhat disorganized in their overall presentation.	Participants' presentation and interview are logical, well organized, and easy to follow.	
Clarity (X1)	The presentation and interview are full of illogical thoughts that lack understanding and clarity.	The presentation and interview are somewhat logical and easy to understand and follow.	The presentation and interview provide a clear, concise, and easy-to-follow description of the project.	
Articulation (X1)	Participants are verbose, and/or illogical in their presentation, and/or use many "uhs, ums, hmms,'" etc.	Participants are logical and fairly well spoken, with little use of "uhs, ums, hmms," etc.	Participants are logical, well-spoken, and distinct throughout the presentation.	

ARCHITECTURAL RENOVATION (continued)				
Finalist Interview (60 points) (continued)				
Team participation (X1)	Only one person on the team communicates and responds to questions.	Most members of the team participate, but only one member seems to fully understand the event.	All team members participate with mutual understanding of the event and respond effectively to questions.	
Knowledge (X2)	Participants seem to have little understanding of the concepts of their design challenge and offer vague answers to interview questions.	Participants have a general understanding of the concepts of the design challenge, and answer questions relatively well.	Participants show clear evidence of a thorough understanding of the design challenge and effectively communicate their responses to all questions.	
			SUBTOTAL (60 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (280 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

BIOTECHNOLOGY DESIGN

OVERVIEW

Participants select a contemporary biotechnology problem that relates to the current year's published area of focus and demonstrate understanding of it through documented research, the development of a solution, a display, and an effective multimedia presentation. If appropriate, a model or prototype of the solution may be included in the display. Participants may choose to recreate or simulate research that previously has been performed within the scientific community.

The biotechnology area of focus for 2013 is **Energy.**

The biotechnology area of focus for 2014 is **The Role of Biotechnology in Water and Waste Technology.**

☑ Biotechnology is defined as "any technique that uses living organisms, or parts of organisms, to make or modify products, improve plants or animals, or to develop microorganisms for specific purposes." from *Standards for Technological Literacy*, ITEEA/ITEA, p.149.

PURPOSE

Participants are encouraged to explore and gain an understanding of an area of biotechnology—a field of biology that involves the use of living things in engineering, technology, medicine, etc.

ELIGIBILITY

A. Participants are limited to three (3) teams per state, two (2) or more participants per team.

B. The semifinalist presentation is given by two (2) members of the team.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Semifinalists are given up to ten (10) minutes to give a presentation, which is followed with a few minutes for questions from evaluators.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Team members select and research a contemporary biotechnology issue related to the current year's designated area of focus. Resources may include but are not limited to books, interviews, websites, magazines, professional journals, etc. Team members then prepare their documentation, display, and multimedia presentation according to the regulations below.

B. Participants check in their entries at the time and place stated in the conference program. No more than two (2) team members set up the display.

C. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

D. Two (2) representatives from each semifinalist team report to the event area at the time and place stated in the conference program with their multimedia presentation.

E. Semifinalist team representatives give a brief presentation and answer questions from evaluators. Up to ten (10) minutes will be provided for the presentation, with a few minutes more for questions from evaluators.

F. No more than two (2) team members pick up their entry from the display area at the time and place stated in the conference program.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. All work must be completed during the current school year.

B. Students must understand the fundamental concepts and principles of the contemporary biotechnology issue the team has selected. Research should focus on significant impacts (opportunities *and* risks) on the environment, economy, and society, as well as any important ethical considerations.

C. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the title of the project/problem, event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Definition and explanation of the problem; one (1) page

4. An explanation of the chosen solution, and other possible solutions and why they were rejected; maximum three (3) pages
5. A scenario of possible real-life applications; one (1) page
6. Supplementary information such as logs, graphs, sketches, drawings, illustrations, photographs, etc.; maximum four (4) pages
7. A print-out of the accompanying multimedia presentation [printed with three (3) slides per page, recommended]; pages as needed
8. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Plan of Work log); one (1) page
9. MLA (Modern Language Association) style must be used for all citations, references and resources [a minimum of three (3) different types of resources must be used]; examples include, but are not limited to books, interviews, professional journals, websites, magazines, etc; pages as needed.
10. A CD or DVD of the team's multimedia presentation. The CD/DVD and the multimedia presentation become the property of TSA.

D. Display guidelines are as follows:

1. The size of the display may not exceed 15" deep x 3' wide x 4' high.
2. AC electricity may not be used. Dry cell or photo-voltaic cells may be used for power, if desired. Any power source used must fit within the maximum display area.
3. If operating instructions are necessary, they must be clearly displayed.
4. **No harmful or illegal substances, viruses, live plants, or animals may be used as a part of the display. No potentially dangerous processes may be demonstrated or included as part of the display.**

E. Each team must be prepared to send two (2) representatives to a semifinalist interview in which the representatives give a brief multimedia presentation. The presentation explains the team's selection of the problem and its solution and is not to exceed ten (10) minutes. Evaluators then ask questions.

F. The two (2) semifinalist team representatives MUST bring a laptop computer to show their multimedia presentation. Projection equipment will not be permitted. Only power will be provided.

☑ Don't forget!
Your documentation must not include any identifying information beyond your conference ID number.

EVALUATION

Evaluation is based on the documentation, the display, and the presentation/interview (semifinalists only). For more specific information, please refer to the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CRITICAL THINKING — Students analyze biotechnology problems. Suggested leadership lessons: *Critical Thinking Tips* and *Put Yourself in Their Shoes*
- PROBLEM SOLVING — Students will choose a problem and develop a solution. Suggested leadership lessons: *Debate It* and *Lend a Hand*
- COMMUNICATION — Students communicate within a group and to an audience. Suggested leadership lessons: *Listening Skills* and *Promote It.*

Additional leadership skills promoted in this event: creative thinking, decision making, evaluation, ethics, organization, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Bioinformatics processor
Food scientist
Microbiologist
Radiographer
Quality control analyst

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

BIOTECHNOLOGY DESIGN
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for check-in, two (2)

C. Evaluators for displays, two (2) or more

D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:

1. Event guidelines, one (1) copy for the coordinator and for each evaluator
2. Official rating forms
3. List of entries with finalist report
4. List of evaluators/assistants
5. Stick-on labels for numbering entries
6. Marking pens for evaluators
7. Semifinalist list for posting
8. Results envelope

B. Tape measure for evaluators

C. One (1) calculator for each evaluator

D. Stopwatch

E. Display tables for entries (minimum width 18")

F. Table and chairs for evaluators and two (2) semifinalist team representatives

G. A 50' extension cord AND a power strip (for semifinalist interviews)

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area in which the displays are being placed for appropriate set-up, including appropriate number and size of tables.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number in the lower right-hand corner of each notebook and display. Position entries for evaluation and viewing. Secure the entries in the designated area.

E. Meet with your evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Evaluators average their scores to determine the twelve (12) semifinalists.

I. Prepare a list of the twelve (12) semifinalists in random order and submit it to the CRC chairperson for posting.

J. Inspect the area in which the presentations are to take place. Ensure that there is a table and seating for the interviews.

K. Meet with your *semifinalist* evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

L. Conduct semifinalist presentations/interviews using the same official rating forms used by the first set of evaluators. Evaluators should be sure to ask questions.

M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

BIOTECHNOLOGY DESIGN

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Documentation (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation C (X1)	The notebook is unorganized and/or is missing three or more components.	The notebook is missing two components and/or is loosely organized.	The notebook has one or no components missing and is clearly well organized.	
Explanation of problem and solution (X1)	The explanation of the problem and/or the solution to the problem is missing or is unclear; major grammatical errors are evident.	An explanation of the problem, and/or the solution to the problem is included but may be overgeneralized and/or not concise; some grammatical errors are present.	The explanation of and solution to the problem are provided, with few or no grammatical errors.	
Research base (X1)	The works lacks an adequate research base and/or cites very few credible sources.	The research is conducted appropriately, but few credible sources are cited.	There is a comprehensive research base that includes credible sources.	
Supporting graphics and materials (X1)	The graphics and supporting materials do not clarify documentation, and/or they do not relate to the issue, and/or they may not be properly cited (MLA format).	The graphics and supporting materials are appropriate, properly cited (if needed), and supplement the documentation by providing clarity to issues.	The graphics and supporting materials are of excellent quality; graphics clearly clarify abstract concepts and, if not original, are properly cited.	
Quality and effectiveness (X1)	The work is sloppy and disorganized, as if thrown together.	The work is mostly organized and of sufficient quality.	The work is well organized and of exceptional quality.	
			SUBTOTAL (50 points)	

Display (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Communication of problem (X1)	The problem is difficult to understand as communicated and is presented in an illogical manner.	The problem is communicated, but thoughts are not organized and/or are not concise.	The problem is communicated in an organized, clear, and concise manner.	
Communication of solution (X1)	The solution is difficult to understand as communicated and is presented in an illogical manner.	The solution is communicated, but thoughts are not organized and/or are not concise.	The solution is communicated in an organized, clear, and concise manner.	
Creativity (X1)	The work lacks creativity, with little or no integration of design principles.	Some creative elements are included, but essential design principles are missing or are not used effectively.	The work exudes creativity, and essential design principles and elements are integrated.	

BIOTECHNOLOGY DESIGN (continued)				
Display (40 points) (continued)				
Aesthetics and Artisanship (X1)	The work is unorganized and sloppy, and the display seems to be an afterthought.	The presentation is organized, with essential issues given in a logical format.	The work reflects an exemplary use of layout and design principles to logically communicate important data.	
			SUBTOTAL (40 points)	
Semifinalist Interview (60 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	The team is unorganized in its presentation and seems unprepared for the interview.	The team is prepared for the interview, but the presentation is somewhat disorganized.	The team's presentation and interview are logical and well organized.	
Clarity (X1)	The presentation thesis is full of illogical thoughts and lacks clarity and understanding.	The presentation thesis is, for the most part, logical and/or clear.	There is a clear, logical explanation of the thesis, and pertinent issues are provided.	
Articulation (X1)	The team provides verbose and illogical interview responses that include many "uhs, ums, hmms," etc."	The team provides logical and well-spoken interview responses with few "uhs, ums, hmms," etc.	The team is well spoken and gives clear, logical interview responses, with no or very few "uhs, ums, hmms," etc.	
Team participation (X1)	Only one team member communicates with judges, with no participation from the other team member(s).	Team members participate equally, but only one seems to fully understand the concepts.	Team members seem to fully understand the concepts and share an equal role in the interview.	
Knowledge (X2)	Team members seem to have little understanding of the concepts in their project and provide vague answers to the interview questions.	Team members have a generalized understanding of the concepts discussed and answer most questions well.	It is clear that team members have an equally thorough understanding of the concepts discussed; they answer questions expertly.	
			SUBTOTAL (60 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (150 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

CAREER PREPARATION

OVERVIEW

During the school year participants research technology-related careers designated by the Bureau of Labor Statistics as falling in the top ten employment growth areas in the near future. Participants research and prepare a resume and cover letter for each of the careers noted. Semifinalists participate in an on-site job interview related to one of the careers.

Participants research each of the careers in the specified year.

2013: Computer software specialist
Film and video editor
Biomedical engineer

2014: Meteorologist
Software engineer
Construction project manager

PURPOSE

Participants research three (3) technology-related careers, prepare a resume and cover letter for each of the three (3) careers, and be prepared to participate in a mock interview about any of the three (3) careers as a semifinalist.

ELIGIBILITY

Participants are limited to (1) one individual per chapter.

TIME LIMITS

A. Participants report to the event area at the time and place stated in the conference program to submit three (3) sets of a resume and cover letter in separate and appropriately marked envelopes.

B. Semifinalist interviews are limited to ten (10) minutes.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. In preparation for this event, participants thoroughly research the three (3) given careers and gain enough understanding to answer job-specific questions, as well as complete a resume and cover letter for each career. Students enter this event with the scenario below in mind.

   1. You have graduated from high school and have the appropriate level of education and training [four (4)-year college, technical school, certification and training, etc.] that is required for successful employment in your selected career.
   2. Your training, education, and other qualifications are realistic for successful employment in your chosen career and are reflected in your resume and cover letter.

B. Participants report to the event area at the time and place stated in the conference program to turn in three (3) sets of a resume and cover letter in individual 9" x 12" envelopes. The envelopes should display a single computer address label (1" x 2⅝") with the career name and a place for inserting the student's identification number. Example below:

Biomedical engineer
Student ID#

C. Entries are reviewed by evaluators to determine the twelve (12) semifinalists. Neither students nor advisors are present at this time.

D. A semifinalist list in random order is posted. At this time the career position for which each semifinalist will be interviewed will be posted. All semifinalists will interview for the same position.

E. Semifinalists report to the event area at the time and place stated in the conference program to schedule and participate in a mock interview.

☑ Using your own identity is expected and highly recommended.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. All resumes and cover letters must be completed before entering the event area.

B. Resumes must be typed and are limited to two (2) single-side 8 ½" x 11" pages.

C. Cover letters must be typed and are limited to one (1) single-sided 8 ½" x 11" page.

D. Only participants are allowed in the event area.

E. Participants should be prepared to interview for any of the three (3) careers designated in a given year. Semifinalists will be informed of the designated career prior to the interview portion of the event.

EVALUATION

Evaluation is based on the participant's cover letter and resume. Semifinalists are evaluated on their interview. All scores carry over to the final score.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students communicate ideas to judges in an interview. Suggested leadership lessons: *Fact or Fiction* and *Listening Skills*
- CRITICAL THINKING — Students research and evaluate careers. Suggested leadership lessons: *And The Answer Is* and *Critical Thinking Tips*
- ORGANIZATION — Students prepare an organized resume and cover letter. Suggested leadership lessons: *New Club In Town* and *Parliamentary Procedure*

Additional leadership skills promoted in this event: ethics, evaluation, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Careers will vary, based on the student's area of interest.

CAREER PREPARATION
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants, two (2)

C. Event evaluators, two (2) or more for written entries

D. Assistants, two (2)

E. Event evaluators, two (2) or more for mock interviews

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating form, thirty (30) copies
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens for evaluators
   6. Semifinalist list for posting
   7. Results envelope

B. Interview questions appropriate for each of the three (3) given careers

C. Stapler and staples

D. Tables and chairs for participants

E. Tables and chairs for evaluators

RESPONSIBILITIES

Submission of resume and cover letter

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Meet with your evaluators/assistants to review time limits, procedures, regulations and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. At entry check-in time, designate three (3) locations—one for each career area—where students submit their envelopes. (Keep entries separated based on the career area.)

F. Designate one (1) career area the judges should use for evaluation. Only move to a second or third career area if a tie-breaker situation occurs.

G. Evaluators independently assess the entries and then tally their rating forms.

H. Prepare a list of the twelve (12) semifinalists and submit it to the CRC chairperson for posting. Be sure to include instructions about where and when semifinalists can sign up for interview times. Post the job position for which the semifinalists will interview.

Mock interview

A. Inspect the area(s) in which the interviews will be held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

B. Meet with your evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

C. Each student is interviewed by the three (3) evaluators.

D. Evaluators review and determine the ranking of the semifinalists, discussing and breaking any ties.

E. Complete and submit the finalist report, including a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

F. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

CAREER PREPARATION

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Cover Letter (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Paragraph 1 Introduction (X1)	The introduction fails to describe the participant, does not clearly identify the position or reason for contact, and/or does not indicate how the position was discovered; and/or it does not indicate interest; and/or it does not grab the employer's attention.	The introduction describes many of the elements (e.g., participant description, how the position was identified, reason for applying, etc.) but only briefly addresses others (e.g., how the position was discovered, interest level, etc.), resulting in a "lukewarm" introduction.	The introduction incorporates all elements—the participant, the position or reason for contact, how the opening was discovered, and genuine interest in the position—and ultimately grabs the employer's attention.	
Paragraph 2 Identification of skills (X1)	Participant fails to identify any skills or qualifications, does not explain interest, and does not indicate how his/her skills would provide benefit to the company.	Participant indicates one of his/her skills, with a general explanation of how the skill relates to the position at hand; participant conveys interest, but only briefly connects the skill to benefits for the company.	Participant provides one or two strong qualifications and clearly relates these skills to the job at hand; participant clearly explains how his/her interest and skills can benefit the company.	
Paragraph 3 Closing (X1)	The closing does not include a thank-you to the employer, does not note contact information, is not assertive, and lacks mention of follow-up after a given period of time.	The closing paragraph may or may not include a thank-you to the employer and contact information; overall, it is not assertive and may or may not mention follow-up.	The closing includes a thank-you to the employer for his/her time and contact information; it is assertive and mentions a method of follow-up within a given period of time.	
Overall writing quality and grammar (X1)	The writing does not make sense; participant has written too much or too little (the employer could be turned off); there are multiple spelling and grammatical errors.	The writing is average, and includes relevant information and content, but it may or may not be convincing to an employer; there are minor spelling or grammatical errors.	The writing flows well, is clear, concise and gets right to the point; it is convincing, and contains no spelling or grammatical errors.	
			SUBTOTAL (40 points)	

Resume (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Audience and purpose (X1)	The resume does not address a particular audience; purpose is not clearly stated; revision is needed.	The audience is implied but not clearly addressed; purpose is generally clear but needs to be specified more directly.	The audience is clearly addressed and the resume is tailored to the employer; purpose is clearly stated.	
Presentation and format (X1)	The resume does not have a clear design format; headers are not used or are used incorrectly or inappropriately; it does not use reverse chronological format.	The resume attempts (and partially succeeds) to use a reverse chronological format; headers are used but they need revision for professional and concise presentation.	The resume follows a reverse chronological format; it uses clear and appropriate headers to organize information; it has a professional appearance.	

CAREER PREPARATION (continued)				
Resume (40 points) (continued)				
Appropriate Information (X1)	Information is not relevant to the position; information does not convey the necessary skills needed to fulfill job requirements; it is obvious that no research on the position has been done.	Information is somewhat relevant to the position, skills are addressed, job requirements are somewhat taken into consideration when preparing the resume, and some research is evident.	Information is relevant to the position being applied for, it is obvious that research has been done on skills needed and requirements for the position, and all information is appropriate for the position being sought.	
Language and style (X1)	Participant fails to use action words; phrasing is wordy and lacks focus, and/or phrases need revision to make them concise and clear.	Participant uses some action words, but phrases are often wordy and need revision to make them more concise and clear.	Participant consistently uses strong, clear and concise words throughout the resume; clarity of expression is consistent.	
			SUBTOTAL (40 points)	
Semifinalist Interview (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	Participant seems unprepared for the interview and is disorganized in the presentation.	Participant is prepared for the interview but is somewhat disorganized in the presentation.	Both the presentation and the interview with evaluators are well organized and logically completed.	
Knowledge (X2)	Participant seems to have very little understanding of the concepts in the presentation and provides vague responses to interview questions.	Participant presents a generalized understanding of the concepts discussed and answers questions well.	Participant shows clear evidence of a thorough understanding of the job discussed and understands issues of the job in the future.	
Delivery (X1)	Delivery detracts from the message; eye contact is limited and participant may look at the floor, mumble, speak inaudibly, fidget or read most of the presentation; gestures and movements may be jerky or excessive.	Delivery is generally good, however, effective use of volume, eye contact, vocal control, etc. may not be consistent; some hesitancy may be observed, however, vocal tone, facial expressions, and/or other nonverbal expressions do not detract from the message.	Delivery is seemingly extemporaneous, natural and confident and enhances the message; posture, eye contact, smooth gestures, facial expressions, volume and pace also enhance the presentation; commitment to the topic and a willingness to communicate are evident.	
Articulation (X1)	Participant is verbose, illogical, and uses many "uhs, ums, hmms," etc.	Participant is logical, well-spoken, and uses only a few "uhs, ums, hmms," etc.	Participant is well-spoken, distinct, and responds clearly, with little or no use of "uhs, ums, hmms," etc.	
			SUBTOTAL (50 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (130 points)**

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

OVERVIEW

Participants take a written parliamentary procedures test in order to qualify for the semifinals, where they perform an opening ceremony, dispose of three (3) items of business, and perform a closing ceremony within a specified time period.

PURPOSE

Students have the opportunity to demonstrate an understanding of parliamentary procedures relative to business meetings.

ELIGIBILITY

Participants are limited to one (1) team of six (6) members per chapter. Team members do not have to be elected officers of the local chapter. Teams that take the written test and advance to the semifinalist portion of the event must be composed of the same six (6) members.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

TIME LIMITS

A. All teams are allowed one (1) hour to complete a written parliamentary procedures test.

B. Semifinalist teams have a time limit of fifteen (15) minutes for the oral presentation, which includes completion of required parliamentary actions, items of business, set-up time, and a presentation. The fifteen (15)-minute time limit ends when the gavel is rapped to close the meeting. (At that point all other team members must leave the room.) The secretary will then have five (5) additional minutes to complete the minutes of the meeting. Teams are penalized five (5) points per thirty (30) seconds on each evaluator's score sheet for going over the allotted time, based on the following scale:

Time over fifteen (15) minutes	Penalty
15:01 to 15:30	five (5) points per evaluator
15:31 to 16:00	ten (10) points per evaluator
16:01 to 16:30	fifteen (15) points per evaluator
16:31 to 17:00	twenty (20) points per evaluator

No team may go beyond seventeen (17) minutes.

ATTIRE

Official TSA dress as described in Competitive Events Attire is the minimum requirement for both written and oral portions of the competition.

☑ For a complete description of the official TSA dress, be sure to read the section in the front of this book called Competitive Events Attire.

Note the side bar in the Competitive Events Attire section for information about the 2013 and 2014 conferences and the official blue shirt.

PROCEDURE

A. Participants report for the written test at the time and place stated in the conference program.

B. A written parliamentary procedures test is administered at the same time to all team members.

C. Twelve (12) teams with the highest averaged scores are selected as semifinalists for the oral presentation. A semifinalist list in random order is posted.

D. Semifinalist teams report for oral presentations at the time and place stated in the conference program.

E. Each team follows the procedure for opening and closing a local chapter meeting. Each team follows an order of business to dispose of three (3) given parliamentary items or actions provided by the event coordinator and then closes the meeting according to the prescribed procedure. Concerning the reading of the creed by the secretary during the closing ceremony, a chapter has the option to recite the creed using one (1) or more of its team's members.

REGULATIONS

A. Team members take the written test individually.

B. Teams consist of a president, vice president, secretary, treasurer, reporter and sergeant-at-arms.

C. The event includes the call to order, pledge to the flag, roll call, order of business and closing ceremony.

D. Written materials, other than those provided, may not be taken into the event room.

E. A set of secretary's minutes, a treasurer's report, a copy of the creed, and a list of parliamentary actions are provided by the event coordinator when the team members enter the performance room. The event coordinator also will supply each team with paper, pens and a calculator. The coordinator will provide six (6) 3" x 5" note cards and two (2) pencils to each team, if desired.

☑ Participants must provide—and bring to the test site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for any competition that involves a written test.

F. Any team that fails to appear at the designated time is placed at the end of the list and allowed to participate at the discretion of the evaluators and event coordinator if time permits.

G. Officer symbols and gavel (only) are placed on a long table with the flag of the United States of America standing on the right of the president's rostrum and the host state flag to the left. The president's rostrum should be centered between the two (2) flags. The symbols of the officers should be placed in front of the respective officers. The host state banners are optional and do not add to or subtract from the evaluators' point totals.

H. A timepiece and/or a non-programmable calculator may be used by a chapter team if desired.

I. Semifinalist teams have a time limit of fifteen (15) minutes to complete required parliamentary actions, items of business, set-up time, and a presentation. (These are all part of the Business Meeting Demonstration.) Official timing will begin as soon as the problem is given and will stop at the team's final gavel to end the meeting. Five (5) points will be deducted for every thirty (30)-second interval over the allotted time (see TIME LIMITS).

J. Bonus points will be awarded for additional motions and parliamentary actions by the officers, other than the president.

K. At the conclusion of the oral presentation, each team secretary has five (5) minutes to write a copy of chapter minutes that will be submitted to an evaluator. The coordinator will begin timing the five (5) minutes when the secretary is seated at the area designated for writing of the minutes.

L. All materials given to team members, including the chapter minutes recorded during the presentation, must be given to the evaluators before the team leaves the room.

M. No reference should be made to a team's school, chapter name, city, or state. However, the state name on a TSA patch is acceptable.

☑ Teams are asked not to reveal their school, chapter name, or city, but the state name on an official TSA patch is acceptable.

EVALUATION

Each team's average written test scores are used to determine the twelve (12) semifinalist teams. The team's average test score is included in the results. Semifinalist teams are evaluated according to the criteria on the official rating form.

NOTE

There are plenty of ways to learn about parliamentary procedure. The standard reference is *Robert's Rules of Order, Newly Revised*. Information about parliamentary procedure websites may be found online at http://www.rulesonline.com/parliamentary_procedure_websites.htm.

In preparation for writing proper minutes, also refer to *Robert's Rules of Order, Newly Revised*.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Technology, Engineering

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students perform an opening and closing ceremony. Suggested leadership lessons: *Listening Skills* and *Put It Together*
- SELF-ESTEEM — Students exhibit confidence during debate. Suggested leadership lessons: *Define U!* and *Paper Plate Awards*
- TEAMWORK — Students effectively work together as a team. Suggested leadership lessons: *Effective Meetings* and *Stepping Stones*

Additional leadership skills promoted in this event: decision making, organization, problem solving

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Careers will vary, based on the student's area of interest.

CHAPTER TEAM
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Assistants, two (2) or more for the written test and two (2) or more for the oral presentations

D. Timekeeper

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Copies of parliamentary procedures test
   6. Opening and closing ceremonies script
   7. The TSA Creed
   8. List of parliamentary actions
   9. Copies of secretary's minutes
   10. Copies of treasurer's report
   11. Paper, pens, one (1) calculator
   12. Six (6) 3" x 5" note cards and two (2) pencils per team
   13. Semifinalist list for posting
   14. Results envelope

B. Officer symbols and gavel

C. United States flag

D. State flag (optional)

E. Stop watches

F. One (1) table and three (3) chairs for evaluators

G. One (1) long table or two (2) tables and six (6) chairs for chapter team members

H. Table rostrum, if available

☑ Scoring on this test of fifty (50) questions is as follows. All six (6) team members take the written test. An average of their scores is calculated. That average is divided by five (5), and the resulting number is the score the team will receive out of ten (10) points.

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

E. Administer the written test.

F. Average the scores for each team.

G. Prepare a list of the twelve (12) semifinalists and submit it to the CRC chairperson for posting.

H. Check in semifinalists at the time stated in the conference program. Inform the teams of their order of performance and review the procedure to be followed.

I. When each team enters the performance room, pass out the three (3) items of business. At this point the team's allotted time begins.

J. The event coordinator or an assistant is responsible for introducing each team by entry number only when the evaluators have finished with the previous team.

K. Teams may take chapter paraphernalia (officer symbols and gavel only) into the performance room if desired, or they may use what is provided by the event coordinator.

L. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

M. Evaluators average their scores to determine rankings. Any ties that affect these semifinalists should be broken by using the team average score on the written exam.

N. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the area.

CHAPTER OPENING AND CLOSING CEREMONIES

OPENING CEREMONY

(At the prescribed time for meetings, the president assumes his/her position behind the rostrum in the front center of the room. Other officers are seated to the left and right of the president. They are seated in the following order from stage left to right: vice president, treasurer, secretary, president, reporter, and sergeant-at-arms.)

Host State Banner (Optional)

U.S. Flag Sgt.-at-Arms Reporter President Secretary Treasurer Vice Pres. State Flag

(Officers facing audience)

Audience

President:	(raps gavel twice) Will the meeting please come to order. Mr./Ms. Sergeant-at-Arms, are all the officers in their places?
Sergeant-at-Arms:	They are, Mr./Ms. President.
President:	[raps gavel three (3) times for assembly to rise] Mr./Ms. Sergeant-at-Arms, please lead the assembly in the Pledge to the Flag of the United States of America.
Sergeant-at-Arms:	(leads Pledge to the Flag)
President:	(raps once and assembly is seated) Mr./Ms. Secretary, will you please call the roll.
Secretary:	Mr./Ms. Sergeant-at-Arms.
Sergeant-at-Arms:	Present. The symbol of my office is the “hearty handshake” (officer points to symbol), and it is my responsibility to see that the assembly is comfortable and properly welcomed. It is also my duty to serve as doorkeeper for this organization.
Secretary:	Mr./Ms. Reporter.
Reporter:	Present. The symbol of my office is the beacon tower (officer points to symbol), and it is my duty to see that our school, community, and national association have a complete report of our organization’s activities.
Secretary:	Mr./Ms. President.
President:	Present. The symbol of my office is the gavel (officer points to symbol). The duties vested in me by my office are to preside at all regular and special meetings of this organization and to promote cooperation in carrying out the activities and work of our organization. Mr./Ms. Secretary.
Secretary:	Present. The symbol of my office is the pen (officer points to symbol), and it is my responsibility to see that accurate and proper records are kept of all business and correspondence of this association. Mr./Ms. Treasurer.

Treasurer:	Present. The symbol of my office is a balanced budget (officer points to symbol), and it is the duty of my office to keep accurate records of all funds and see that our financial obligations are met promptly.
Secretary:	Mr./Ms. Vice President.
Vice President:	Present. The symbol of my office is a star (officer points to symbol), and it is the duty of my office to see that we always have a strong membership, a good work program, and are alert to the welfare of our chapter.
Secretary:	Mr./Ms. President, all officers are present and in their place.
President:	Mr./Ms. Sergeant-at-Arms, do we have guests present?
Sergeant-at-Arms:	[If so, introduce guest(s). If not, state the following:] No, Mr./Ms. President.
President:	Mr./Ms. Secretary, we are ready to transact our business.

Teams dispose of the assigned business following the suggested order of business.

CLOSING CEREMONY

President:	(raps three (3) times; assembly rises) Mr./Ms. Secretary, will you please (read) or (lead us in) the TSA Creed.
Secretary:	(recites the TSA Creed) (When presented at state and national competitions, the creed may be presented using a more original method.)
President:	Will the assembly repeat the TSA Motto after me. (motto is spoken) Does anyone know of any reason why this assembly should not adjourn? If not, I will entertain a motion to adjourn. (following motion to adjourn, a second, and a vote) I now declare this meeting adjourned until a special meeting is called or until our next regular meeting. (raps once with gavel)

SUGGESTED ORDER OF BUSINESS FOR CHAPTER MEETINGS

1. The president calls the meeting to order with opening ceremonies.
2. Roll call is taken and a quorum is established.
3. The minutes of the preceding meeting are read by the secretary. Any necessary corrections and/or additions are made and the minutes are approved as read or corrected.
4. The treasurer's report is received as read and placed on file subject for audit. The chair so states.
5. Committee and officer reports are called for by the chairperson, as necessary. If a committee has no report, let the committee so state.
6. Unfinished business is addressed.
7. New business is addressed.
8. The program, if any, is held at this time. The chairperson presides with the assistance of the program chairperson or the committee chairperson.
9. Announcements.
10. Adjournment with closing ceremonies.

CHAPTER TEAM OFFICIAL MINUTES

Team number _____

Date _____

Location of conference _____

Use the back of this page, if necessary.

Secretary's signature _____ Date _____

Participant ID#1 _____ ID#2 _____ ID#3 _____ ID#4 _____ ID#5 _____ ID#6 _____

Team ID#1 _____

CHAPTER TEAM

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Team Written Test (10 points)

Record the scores of the six (6) team members in the boxes below. Calculate the average of their scores. Divide the average by five (5) for the score that the team will receive out of ten (10) points. Record the score in the column space to the far right.

#1	#2	#3	#4	#5	#6	Record scores in the column spaces below.
					SUBTOTAL (10 points)	

Business Meeting Demonstration (170 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1, X2 or X3 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points; an "exemplary" score of 7 for an X3 criterion = 21 points)				
Preparation for Meeting (30 points)				
Official attire/poise (X2)	Appearance is untidy; grooming is lacking; clothing is not consistent in coloration and visual appearance; shoes are the wrong color; poise and confidence are missing.	Overall appearance is neat and consistent; grooming is good, but confidence could be improved.	Overall appearance is cohesive and polished (official, professional, confident and business like).	
Placement of flags and officer symbols; officer seating (X1)	Flags are not placed in the correct order; and/or officer symbols are not in the correct order and/or are not aligned properly on the table; and/or not all officers are seated in the proper arrangement, resulting in a sloppy and haphazard appearance.	Placements and seating are generally businesslike and professional, with some inconsistencies (e.g., flags are in correct order but not aligned with other aspects of officer gear; and/or officer symbols are in proper order, but some are misaligned; and/or officers are seated properly, but some chairs are misaligned, etc.).	Flags are completely aligned and in proper order and placement; officer gear is placed in the correct order and in proper alignment on the table; the seating arrangement is precise, business like and professional.	
Knowledge of TSA (20 points)				
Opening ceremony (X1)	Many items of sequence and order are incorrect and officers make several mistakes.	Officers make few, if any, sequence and order mistakes, resulting in a fairly smooth opening ceremony.	The opening is smooth and efficient and everything progresses as it should.	
Closing ceremony (X1)	Officers make several mistakes; creed recitation is sloppy and the overall effort is unpolished.	Appropriate procedures are followed, with some mistakes made (e.g., creed recitation).	The closing is outstanding, with no mistakes; the presentation is highly polished.	
Knowledge of Parliamentary Procedure (120 points)				
Order of business (X1)	Order of business is incorrect; officers appear confused and unprepared.	Officers follow correct order of business, but some appear distracted or unprepared.	Officers consistently follow efficient, orderly and correct order of business.	
Voting procedures (X1)	Several obvious mistakes are made in voting procedures.	Few mistakes are made in voting procedures.	All voting procedures are correct, smooth and efficient.	

CHAPTER TEAM (continued)				
Knowledge of Parliamentary Procedure (continued)				
Debate (exclude president) (X3)	Only a few officers participate effectively in the debate, which is loosely presented.	Most officers participate in the debate process but some are less than convincing.	All officers participate in and present a highly cohesive debate.	
Parliamentary actions (X3)	Only one of the required actions is completed correctly and lacks inspiring effort.	Two of the actions are completed correctly, with adequate, but not inspiring, effort.	All three actions are completed correctly, with notable and inspiring effort.	
Communication (X2)	Communication is unclear; some mumbling occurs and/or voices are too loud or too soft; and/ or problems occur with verbal expression (e.g., grammar, sentence structure, etc.).	Communication is generally clear, with appropriate volume of voices and only minor problems with articulation or verbal expression.	Communication is clear, concise, and easy to understand; voices are well modulated and speakers are articulate.	
Chapter minutes (X2)	The format of the minutes is incorrect or not complete; grammar and spelling errors are evident.	The format of the minutes is generally correct and complete, with few grammar and/or spelling errors.	The minutes are formatted correctly, are complete, and have no grammar or spelling errors.	
			SUBTOTAL (170 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right. Indicate the rule violated: _____	

TIME DEDUCTIONS (NO TEAM MAY GO BEYOND 17 MINUTES.)				
15:01 to 15:30 five (5)	15:31 to 16:00 ten (10)	16:01 to 16:30 fifteen (15)	16:31 to 17:00 twenty (20)	
	Oral presentation time	Intervals over	Total point deduction	
	Secretary's minutes	Intervals over	Total point deduction	

BONUS For additional motions and parliamentary actions (by officers other than the president) (X2)	Only one or two of the additional actions is/are completed correctly; the effort is uninspiring.	Three or four of the actions are completed in an acceptable manner.	All five of the supplementary actions are completed in an efficient and effective manner.	
			SUBTOTAL (20 points)	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (200 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

COMPUTER-AIDED DESIGN (CAD) 2D, ARCHITECTURE

OVERVIEW

Participants create representations, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry.

PURPOSE

Participants have the opportunity to use complex computer graphic skills, tools, and processes to develop representations of architectural subjects.

☑ CAD involves two (2) separate events:

CAD 2D, Architecture

CAD 3D, Engineering

ELIGIBILITY

Participants may compete in CAD 2D, Architecture or CAD 3D, Engineering, but not both. Participants are limited to two (2) individuals per state.

TIME LIMITS

A. One (1) hour set-up time

B. Four (4) hours to develop the drawing(s)

C. One (1) hour for final evaluation

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants bring their own computer systems (see regulations below) to the event area at the time and place stated in the conference program.

B. Each participant with one (1) assistant (an instructor, fellow student, or adult chaperone) is allowed one (1) hour to set up and test equipment. At the end of the one (1)-hour set-up period, assistants are required to leave the area.

☑ CAD 2D, Architecture problems begin with a sketch and instructions to complete floor plans, foundation plans, elevations, and/or detail sections of a small, simple residential structure.

C. Participants are given a design problem to solve during a four (4)-hour work session.

D. Participants work independently, without assistance from evaluators, teachers, fellow participants, other students, or observers.

E. Participants are advised to save their work on their hard drives every fifteen (15) minutes.

F. At the end of the session, participants save their work on their hard drives and on CD or DVD.

G. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.

H. Participants break down and remove their equipment.

REGULATIONS

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

A. Participants provide their own systems, including hardware [only one (1) CPU and one (1) monitor], software, two (2) blank CDs or DVDs, a grounded 50' extension cord, power strip/surge protector, and reference materials. It is not necessary to bring a printer for this event. Laptop computers are recommended; computers must be equipped with a CD or DVD drive with which to save the solution.

B. Conference coordinators supply a table, chair, sketching paper, pencil, and electricity for each participant.

C. Participants are not permitted to leave the event room without permission from the event coordinator. If a participant must use the rest room, s/he is accompanied by an escort.

D. Participants are not permitted to share solutions to problems, reference materials, hardware, or software.

E. Participants identify their work using only their conference identification number.

F. All disks and the work they contain become the property of TSA, Inc.

G. Breakdown of equipment is permitted only after the work of all participants has been evaluated.

EVALUATION

Entries are evaluated on screen according to the criteria on the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students use CAD to communicate a design. Suggested leadership lessons: *Promote It* and *Put It Together*
- CREATIVE THINKING — Students create representations of ideas. Suggested leadership lessons: *Color Hunt* and *Creative Techniques*
- EVALUATION — Students evaluate a design according to requirements. Suggested leadership lessons: *Evaluation Methods* and *Seven Components of Effective Evaluation*

Additional leadership skills promoted in this event: organization, problem solving, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Architect
Automobile designer
CAD professional
Machine designer

COMPUTER-AIDED DESIGN (CAD) 2D, ARCHITECTURE EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Assistants, one (1)

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Four (4) pens and three (3) calculators
   6. Results envelope

B. Tables and chairs for participants and evaluators

C. One hundred twenty (120) sharpened #2 pencils and one (1) ream of 8½" x 11" white copier paper

D. Statement of problem as a hard-copy sketch, fifty (50) copies.

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. At least one (1) hour before the event is to begin, meet with your evaluators and assistants to review time limits, procedures, regulations, and evaluation and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. As participants arrive, check the entry list and assign participants to work stations.

E. Begin the event at the scheduled time. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

F. Allow one (1) hour for participants and their assistants [no more than one (1) per participant] to set up equipment. At the end of the one (1) hour set-up time, non-participants are required to leave the event area. Review with the participants the time limits, procedures, regulations and protocol of the event.

G. Remind participants to save their work at regular time intervals.

H. Distribute copies of the CAD problem. Answer any appropriate questions concerning the problem. Begin the event and announce the ending time.

I. During the event, the evaluators and assistants monitor and evaluate the participants' progress and work.

J. Announce the time remaining to work at one (1) hour, thirty (30) minutes, fifteen (15) minutes, and five (5) minutes before time is called.

K. When time is called, participants stop and save their work on their hard drives and on their CDs or DVDs.

L. Collect the entries, checking to be sure each one is labeled with the student's conference identification number.

M. Participants remain at their computers for up to one (1) hour as evaluation of the entries is completed.

N. The evaluators review the entries independently and submit their signed official rating forms to the event coordinator.

O. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

P. Breakdown of equipment is permitted only after the work of ALL participants has been evaluated.

Q. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

R. If necessary, manage security and the removal of materials from the event area.

☑ Be sure to seal the results in the envelope provided and return them to the CRC room.

Participant/Team ID# _____

CAD 2D, ARCHITECTURE

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

SEMIFINALIST DRAWINGS

Solution to problem (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Design (X1)	The drawing as presented does not create an effective model for the problem assigned.	The layout and design of the drawing as presented create a somewhat effective model for the problem assigned.	The layout and design of the drawing completely and effectively model the problem assigned.	
Functionality (X1)	The design as drawn is impractical, disorganized, and lacks directional flow.	The design is somewhat practical in directional flow and organization.	The design is clearly effective, practical and functional.	
Originality (X1)	The design drawing provides few, if any, attempts at originality or deviation from the traditional.	The design drawing attempts to be somewhat creative and shows some evidence of being less traditional.	The design drawing provides a unique and creative quality of newness that departs from tradition.	
Aesthetics (X1)	The design is displeasing and fails to "capture the eye" of the observer.	The design is somewhat pleasant and appealing and attempts to capture the observer's attention.	The overall design is pleasing and appealing and effectively draws attention to its appearance/beauty.	
			SUBTOTAL (40 points)	

Layout (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Views (X2)	The correct views have not been selected and/or used throughout the drawing process and final layout.	Most of the views that have been selected and used are correct and in the proper layout format.	All of the views that have been selected and used are correct and in the proper layout.	
Detailing (X1)	Many of the details are missing or incorrectly placed.	Most of the details are included and are correctly placed.	All the necessary details are included and are placed correctly.	
Lettering (X1)	The choice of font style, size, color and application is inappropriate for the drawing assignment.	The choice of font style, size, color and application is appropriate, with few inconsistencies/ variations.	The choice of appropriate font style, size, color and application is clearly evident and applied consistently.	
Dimensioning (X1)	Many of the necessary dimensions are missing and/or are incorrectly placed.	Most of the necessary dimensions are included and/or are correctly placed.	All necessary dimensions are included and correctly placed on the drawing.	
Scale (X1)	The scale selected for the drawings is incorrect and improperly noted.	The scale selected for some or most aspects of the drawing is correct and properly noted.	The scale selected for all aspects of the drawings is correct and properly noted.	
			SUBTOTAL (60 points)	

CAD 2D, ARCHITECTURE (continued)				
Architectural Application (20 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Use of symbols (X1)	Many, if not most, of the symbols selected and used are incorrect.	Most of the symbols selected and used are correct and/or appropriately placed.	All of the symbols selected and used are correct and appropriately placed.	
Appropriate standards (X1)	There is little or no evidence of an appropriate application of architectural standards in the completed design and drawings.	There is some evidence of an appropriate application of architectural standards in the completed design and drawings.	There is clear evidence of an effective and appropriate application of architectural standards in the completed design and drawings.	
			SUBTOTAL (20 points)	
Software Utilization (20 points)				
CAD functions (X1)	There is little evidence of an understanding and application of CAD functions.	There is evidence of a general understanding and effective application of CAD functions.	A complete and effective understanding and application of CAD functions is evident.	
CAD features (X1)	There is little evidence of an understanding and application of CAD special features.	There appears to be a general understanding and application of CAD special features.	There is a complete understanding and application of the various special features of CAD.	
			SUBTOTAL (20 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (140 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

COMPUTER-AIDED DESIGN (CAD) 3D, ENGINEERING

OVERVIEW

Participants create a 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product.

PURPOSE

Participants have the opportunity to use complex computer graphic skills, tools, and processes to develop three (3)-dimensional representations of engineering subjects.

ELIGIBILITY

Participants may compete in CAD 2D, Architecture or CAD 3D, Engineering, but not both. Participants are limited to two (2) individuals per state.

☑ CAD involves two (2) separate events:

CAD 2D, Architecture

CAD 3D, Engineering

TIME LIMITS

A. One (1) hour set-up time

B. Four (4) hours to develop the drawing(s)

C. One (1) hour for final evaluation

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants bring their own computer systems (see regulations below) to the event area at the time and place stated in the conference program.

B. Each participant with one (1) assistant (an instructor, fellow student, or adult chaperone) is allowed one (1) hour to set-up and test equipment. At the end of the one (1)-hour set-up period, assistants are required to leave the area.

C. Participants are given a design problem to solve during a four (4)-hour work session.

D. Participants work independently, without assistance from evaluators, teachers, fellow participants, other students or observers.

E. Participants are advised to save their work onto their hard drives every fifteen (15) minutes.

F. At the end of the session, participants save their work on their hard drives and on a CD or DVD.

G. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.

H. Participants break down and remove their equipment.

☑ CAD 3D, Engineering problems typically begin with single mechanical objects such as a gear index, tool box, shaft support, retaining cap, etc.

REGULATIONS

A. Participants provide their own systems, including hardware [only one (1) CPU and one (1) monitor are allowed per student], software, two blank CDs or DVDs, a grounded 50' extension cord, power strip/surge protector, and reference materials. It is not necessary to bring a printer for this event. Laptop computers are recommended; computers must be equipped with a CD or DVD drive with which to save the solution.

B. Conference coordinators supply a table, chair, sketching paper, pencil, and electricity for each participant.

C. Participants are not permitted to leave the event room without permission from the event coordinator. If a participant must use the rest room, s/he is accompanied by an escort.

D. Participants are not permitted to share solutions to problems, reference materials, hardware, or software.

E. Participants identify their work using only their conference identification number.

F. All disks and the work they contain become the property of TSA, Inc.

G. Breakdown of equipment is permitted only after the work of all participants has been evaluated.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

EVALUATION

Entries are evaluated on screen according to the criteria on the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students use CAD to communicate a design. Suggested leadership lessons: *Promote It* and *Put It Together*
- CREATIVE THINKING — Students create representations of ideas. Suggested leadership lessons: *Color Hunt* and *Creative Techniques*
- EVALUATION — Students evaluate a design according to requirements. Suggested leadership lessons: *Evaluation Methods* and *Seven Components of Effective Evaluation*

Additional leadership skills promoted in this event: organization, problem solving, self-esteem, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Architect
Automobile designer
CAD professional
Machine designer

COMPUTER-AIDED DESIGN (CAD) 3D, ENGINEERING EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Assistants, one (1)

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Four (4) pens and three (3) calculators
   6. Results envelope

B. Tables and chairs for competitors and evaluators

C. One hundred twenty (120) sharpened #2 pencils and one (1) ream of 8½" x 11" white copier paper

D. Statement of problem as a hard-copy sketch, fifty (50) copies.

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. At least one (1) hour before the event is to begin, meet with your evaluators and assistants to review time limits, procedures, regulations, evaluation and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. As participants arrive, check the entry list and assign them to work stations.

E. Begin the event at the scheduled time. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

F. Allow one (1) hour for participants and their assistants [no more than one (1) per participant] to set up equipment. At the end of the one (1) hour set-up time, non-participants are required to leave the event area. Review with the participants the time limits, procedures, regulations, and protocol of the event.

G. Remind participants to save their work at regular time intervals.

H. Distribute copies of the CAD problem. Answer any appropriate questions concerning the problem. Begin the event and announce the ending time.

I. During the event, the evaluators and assistants monitor and evaluate the participants' progress and work.

J. Announce time remaining to work at one (1) hour, thirty (30) minutes, fifteen (15) minutes, and five (5) minutes before time is called.

K. When time is called, participants stop and save their work on their hard drives and on their CDs or DVDs.

L. Collect the entries, checking to be sure each one is labeled with the student's conference identification number.

M. Participants remain at their computers for up to one (1) hour as evaluation of the entries is completed.

N. The evaluators review the entries independently and submit their signed official rating forms to the event coordinator.

O. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

P. Breakdown of equipment is permitted only after the work of ALL participants has been evaluated.

Q. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

R. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

CAD 3D, ENGINEERING

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

SEMIFINALIST DRAWINGS

Solution to problem (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Design (X1)	The drawing as presented does not create an effective model for the problem assigned.	The layout and design of the drawing as presented are somewhat effective in modeling the problem assigned.	The layout and design of the drawing completely and effectively model the problem assigned.	
Functionality (X1)	The design as drawn lacks order of direction and is impractical.	The design is somewhat practical in directional flow and overall organization.	The design is completely effective, practical and functional.	
Originality (X1)	The design drawing provides no quality of newness or deviation from tradition.	The design drawing shows some attempt to be creative and less traditional.	The design drawing provides a unique and creative quality of newness that departs from tradition.	
Aesthetics (X1)	The design is displeasing and fails to "capture the eye" of the observer.	The design is somewhat pleasant and appealing and attempts to capture the observer's attention.	The design as drawn is pleasing and appealing and effectively draws attention to its appearance/ beauty.	
			SUBTOTAL (40 points)	

Layout (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Correct geometry (X2)	The correct views and orientation have not been selected or used throughout the drawing process and final layout.	Most of the views and orientation selected and used are correct and in the proper layout format.	All of the views and orientation that have been selected and used are correct and in the proper layout.	
Detailing (X1)	Many of the details are missing or placed incorrectly.	Most of the details are included and are correctly placed.	All necessary details are included and are placed correctly.	
Lettering (X1)	The choice of font style, size, color and application is inappropriate for the drawing assignment.	The choice of font style, size, color, and application is appropriate, with few inconsistencies/variations.	The choice of appropriate font style, size, color and application is clearly evident and applied consistently.	
Dimensioning (X1)	Many of the necessary dimensions are missing and/or placed incorrectly on the drawing.	Most of the required dimensions are included and placed correctly on the drawing.	All of the necessary dimensions are included and correctly placed on the drawing.	
Scale (X1)	The scale selected for the drawings is incorrect and not properly noted.	The scale for some or most aspects of the drawings is correct and properly noted.	The scale selected for all aspects of the drawings is correct and properly noted.	
			SUBTOTAL (60 points)	

CAD 3D, ENGINEERING (continued)				
Engineering Application (20 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Application of practices (X1)	Many, if not most, of the engineering practices selected and used are incorrectly applied.	Most of the engineering practices selected and used are correctly applied.	All of the engineering practices selected and used are correctly and appropriately applied.	
Appropriate use of conventions (X1)	There is little or no evidence of appropriate application of engineering conventions in the completed design and drawings.	There is some evidence of effective application of engineering conventions in the completed design and drawings.	There is clear evidence of an effective and knowledgeable application of engineering conventions in the completed design and drawings.	
			SUBTOTAL (20 points)	
Software Utilization (20 points)				
CAD functions (X1)	There is little evidence of an understanding and application of CAD functions.	There is evidence of a general understanding and effective application of CAD functions.	A complete and effective understanding and application of CAD functions is evident.	
CAD features (X1)	There is little evidence of understanding and application of CAD special features.	There appears to be a general understanding and application of CAD special features.	There is complete understanding and application of the various special features of CAD.	
			SUBTOTAL (20 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (140 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

COMPUTER NUMERICAL CONTROL (CNC) PRODUCTION

OVERVIEW

Participants design, fabricate, and demonstrate their ability to use a CNC (computer numeric control) machine to produce mousetrap car parts. Documentation and two machined samples are checked in and evaluated. Teams return for an assemble session of their entry using the TSA competition tool kit and immediately demonstrate their entry for distance. Evaluation is based on a demonstration of the distance each car travels and proper documentation.

PURPOSE

Participants demonstrate the use of critical thinking skills to select appropriate applications of CNC programing, to select appropriate materials and fabrication techniques for their solution, and to demonstrate the application of their solution.

ELIGIBILITY

Participants are limited to one (1) team of two (2) members per chapter, one (1) entry per team.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Teams will be allowed one (1) hour to assemble their mousetrap car.

C. Demonstration will occur immediately after assembly.

D. Demonstration lasts five (5) minutes, during which time each team member will demonstrate the entry.

E. Check-out occurs as directed in the conference program or as designated by the coordinator.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

Participants submit the documentation and sample work pieces of their entry for evaluation during check-in, as directed in the conference program.

Assembly and Demonstration

A. Teams report to the assembly session at the time and place provided in the conference program.

B. Teams are required to provide their own tool box, with identification (school name and address), which must include the following:

1. No more than two (2) cutting devices from the list below
   a. modeling knife or x-acto knife
   b. miter box and saw
   c. a blade and anvil cutter
   d. scissors
   e. another approved cutting device—none may be electric
2. one (1) ounce of "super glue"
   Note: cyanoacrylate (CA) glue comes in a variety of thicknesses. A team may elect to use one-half (½) ounce of thin CA and one-half (½) ounce of filler CA for a total of one (1) ounce of adhesive. The glue must be in the original bottle with a manufacturer's label, which is clearly marked with the capacity. One-half (½) ounce of glue in a one (1) ounce bottle will be considered one (1) ounce of glue.
3. a single two (2)-ounce bottle of accelerator [pressurized, aerosol applicators are not allowed; a pump or drip applicator of two (2) ounces or less is acceptable]
4. straight pins, as needed
5. simple clamps, such as clothespins, binder clips or twisty ties; all clamps must be removed before the structure is submitted for testing
6. a cutting surface that fits in the approved space and prevents modeling knives from marring the table top
7. a single 12" ruler or measuring scale
8. emery boards of various grits, or sand paper or sanding blocks
9. safety glasses for team members
10. marking device (pen, pencil, etc.)
11. In addition to the above the team may include if needed
    a. two (2) 8" or less adjustable wrenches
    b. one (1) 8" or less slip joint pliers
    c. a single screwdriver, multiply tips are allowed.

C. Using their tool kit, team members will assemble the mousetrap car from one of the two sample work pieces submitted for evaluation.

D. Upon completion of assembly, the car will be submitted for evaluation.

E. After the evaluation, each team member will individually demonstrate the operation of the device

F. The demonstration starts on the judge's signal.

G. The participant will use one (1) hand to hold the rear wheel in order to maintain tension on the prepared car. At the judge's signal the participant will release the wheel and allow the car to roll away. Participants who push the car will receive zero (0) feet for the demonstration.

H. The distance of each demonstration will be recorded in feet, inches and fractions of inches. Measurement will be made in a straight line from the back axle at the start to the back axle at the finish.

I. Should a device fail during one (1) of the two (2) demonstrations, repairs and a single rerun are allowed at the discretion of the event coordinator, with approval from the event manager. A car falling over is not a failure and the measurement will be made.

J. Only team members are allowed to repair or check the operation of the device after it has been checked in. Team members may not leave the contest area to collect tools or parts for repair.

L. The device may be placed on static display after the demonstration and should not be operated during its display. If it is not placed on static display, the car will be released to the participants immediately after the demonstration.

REGULATIONS

A. Documentation

1. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:
   a. Title page with the event title, the conference city and state, and the year; one (1) page
   b. Table of contents; one (1) page
   c. A single view drawing of the work piece, including dimensions used to detail all parts of the car, with an identifying leader and a label; one (1) page

i. Wheels
ii. Lever
iii. Frame of body
iv. Other parts to be machined

d. Isometric assembly drawing; one (1) page
e. Photographic images of designs tested and a three (3)-sentence descriptive caption per image of what was improved or proved by the testing of the design; two (2) pages, maximum
f. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible and comments (see Plan of Work log); pages as needed

B. Materials

1. The sample work pieces will contain the CNC machined parts of the mousetrap car.
2. The parts to be fabricated are:
   a. Three (3) or four (4) wheels, as determined by the design
   b. Frame rails as needed
   c. Lever to increase the force applied to the drive wheel
   d. Other parts, as determined by the design
3. Each work piece will be fabricated from:
   a. A single 12" x 12" square of ¼" material.
   b. The material must be flat stock.
   c. Plastic, wood or metal may be used, but the entire car must be cut from one (1) type of material.
   d. Machined parts submitted for judging will remain attached to the waste stock by a thin membrane of the material or tab, which the team will cut during the assembly. Loose parts will not be evaluated or permitted in the assembly session.
4. Axles:
   a. Must be fabricated from ¼" outside diameter round stock such as dowels or Allthread rods, which must be made of wood, metal or plastic.
   b. Must not exceed a total length of twelve inches (12") of stock (for all axles).
   c. Must not be preassembled at check-in.
5. Bearings may be used to reduce the friction.
   a. Pockets to accommodate the bearings must be part of the CNC machining; exterior plates may be used to secure the bearings. The plates will be attached with screw or bolts, not glued.
   b. The bearings must be press-fitted into the wheels or frame during the assembly session, with hand pressure and tools in the tool kit.

c. A bearing is not to be glued into the pocket.

6. String:
   a. May not exceed twenty-four inches (24") in length for all applications
   b. May be cotton, nylon or other material as determined by experimentation of the team
   c. Is used to
      i. Transfer the energy from the lever to the drive axle
      ii. Attach the lever to the mousetrap lever
      iii. Attach the lever to the mousetrap lever
   d. Must not stretch to provide additional power
7. Stock fasteners maybe used, provided they can be installed with the tools noted in Procedure. They may include, but are not limited to:
   a. nuts
   b. washers
   c. screws
   d. wing nuts
   e. other fasteners that can be attached with the tools noted in Procedure

C. Assembly session

1. Teams will check in at the time and place noted in the conference program.
2. Teams will bring their tool kit.
3. Teams will pick up their documentation and one (1) of the work pieces.
4. Teams will follow the direction of the assistants to the work space.
5. At the direction of the event coordinator, the teams will be provided a mousetrap and will assemble their entry.
6. Upon completion of the car, or after one (1) hour, whichever comes first, the team will submit their entry to the assistants for evaluation.
7. Teams will wait to demonstrate their entry until the judges have completed the rubric evaluation.
8. Each team member will demonstrate the car, and a judge will measure and record the straight distance between the designated start line and the stop point of the entry.
9. Measurement will be made from the drive axle at the start to the drive axle at the finish.

D. Failure to meet the guidelines

1. If the device fails to meet one (1) qualification regulation, a 20% deduction of the total possible points will be made.
2. If the entry fails to meet two (2) qualification regulations, it will be removed from competition.

3. The coordinator may stop a demonstration if a safety issue becomes evident.

EVALUATION

Evaluation is based on the documentation, the component analysis, and the demonstration.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CRITICAL THINKING — Students analyze and reach conclusions. Suggested leadership lessons: *And the Answer Is* and *Figure It Out*
- EVALUATION — Students test and revise the entry at each stage of the design process. Suggested leadership lessons: *Evaluation Methods* and *Your Dream Car*
- PROBLEM SOLVING — Students select appropriate applications to use in an event. Suggested leadership lessons: *Effective Brainstorming* and *Finding the Right* Way

Additional leadership skills promoted in this event: teamwork, organization, creative thinking, ethics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Commercial and industrial designer
Engineer
Mechanical engineer
CNC programmer or operator

TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

COMPUTER NUMERICAL CONTROL (CNC) PRODUCTION EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants at check-in, two (2) or more
   1. Determine that team is registered
   2. Place registration stickers on each entry and documentation

C. Evaluators, two (2) or more

D. Timers, one (1) for demonstrations

MATERIALS

A. Coordinator's notebook, containing
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries, with finalist report
   4. List of evaluators/assistants
   5. ID stickers for entries
   6. Results envelope

B. 150 foot (150') tape measure

C. Computer with spreadsheet or calculator for determining results

D. Tables for teams to assemble their entry

E. Chairs for participant

F. A new unused mousetrap for each team

G. Tables and chairs for check-in assistants, the timer, evaluators and event coordinator

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chair and table set-up, electrical outlets, etc. Notify the event manager of any concerns.

C. One (1) hour before the event is scheduled to begin, meet with the evaluators/assistants to review procedures, time limits and regulations. If questions arise, check with the event manager for clarification.

D. Check in the entries at the time and place stated in the conference program. Any participant who is not on the entry list must report to the event manager for verification of entry.

E. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

F. In the case of a rules violation, document which guideline has not been followed and record it on the rating form.

G. Ensure that all rating forms have been completed before the evaluators leave.

H. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

Participant/Team ID# _____

COMPUTER NUMERICAL CONTROL (CNC) PRODUCTION

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Qualification Regulations

Place an x in the noncompliant or compliant box, as appropriate for each regulation. If one regulation is noncompliant, a deduction of 20% of the total possible points will apply (see rules violations box). If more than one regulation is noncompliant, the device will be removed from competition.

REGULATION	NONCOMPLIANT		COMPLIANT	
Team of two	Only one team member is present.		Both team members are present.	
Attire	Attire does not meet requirements.		Attire is appropriate.	
Safety eyewear	Warnings about eyewear were issued.		No warnings about eyewear were issued.	
Tools and fabrication supplies	Inappropriate tools or supplies are brought to the event.		Appropriate tools and supplies are brought to the event.	

Demonstration release

REGULATION	NONCOMPLIANT		COMPLIANT	
Device release	Device release is inappropriate.		Device release is appropriate.	

Documentation (80points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation A (X1)	The notebook is unorganized and three or more components or sections are missing.	The notebook is generally well organized and is missing only one or two components or sections.	The notebook is exceptionally well organized and contains all required components or sections.	
Design photographs (X1)	Only one photograph of designs tested is included	Only two photographs of designs tested are included.	More than two photographs of designs tested are included.	
Descriptions/analysis (X2)	There is little description of the design testing process and analysis.	Only one description of design testing and analysis is included.	Several descriptions of design testing and analysis are included.	
Work piece layout drawing (X2)	The work piece layout drawing is poorly executed, with key elements missing.	The work piece layout drawing is included but missing some elements.	The work piece layout drawing is complete and correctly executed, with all elements included.	
Isometric assembly drawing (X1)	The isometric assembly drawing is not complete, with many of the required elements missing.	The isometric assembly drawing is present, but it is missing several key required elements.	The isometric assembly drawing is complete and correct, with all required elements included.	
Plan of Work log (X1)	The plan of work log is not in the proper format.	The plan of work log is included, but it does not fully document project work.	The plan of work log is complete and fully documents project work.	
			SUBTOTAL (80 points)	

COMPUTER NUMERICAL CONTROL (CNC) PRODUCTION (continued)

Component Analysis (60points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Rear wheels (X1)	The rear wheels are .25 inches greater or less than the size specified on the layout drawing.	The rear wheels are .125 inches greater or less than the size specified on the layout drawing.	The rear wheels are the correct size, as specified on the layout drawing.	
Front wheels (X1)	The front wheels are .25 inches greater or less than the size specified on the layout drawing.	The front wheels are .125 inches greater or less than the size specified on the layout drawing.	The front wheels are the correct size, as specified on the layout drawing.	
Frame size (X1)	The frame size is .25 inches greater or less than the size specified on the layout drawing.	The frame size is .125 inches greater or less than the size specified on the layout drawing.	The frame is the correct size, as specified on the layout drawing.	
Axle holes (X1)	The axle holes are .25 inches larger than the size specified on the layout drawing.	The axle holes are less than .125 inches larger than the size specified on the layout drawing.	The axle holes are the correct size, as specified on the layout drawing.	
Lever (X1)	The lever bar is .25 inches greater or less than the size specified on the layout drawing.	The lever bar is .125 inches greater or less than the size specified on the layout drawing.	The lever bar is the correct size, as specified on the layout drawing.	
Auxiliary parts (X1)	The auxiliary parts are .25 inches greater or less than the size specified on the layout drawing.	The auxiliary parts are .125 inches greater or less than the size specified on the layout drawing	The auxiliary parts are the correct size, as specified on the layout drawing.	
			SUBTOTAL (60 points)	

Demonstration (55 points)

Run #1 distance		
Run #2 distance		
Average distance		

Demonstration

1st	2nd	3rd	4th	5th	6th	7th	8th	
140 points	130 points	120 points	110 points	100 points	90 points	80 points	70 points	
9th	**10th**	**11th**		**12th**		**13th and below**		
60 points	50 points	40 points		30 points		20 points		
						SUBTOTAL (140 POINTS)		

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event.
Record the deduction in the space to the right.
Indicate the rule violated _____

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (280 points)**

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

DEBATING TECHNOLOGICAL ISSUES

OVERVIEW

Team members will work together to prepare for a debate against a team from another chapter. The teams will be instructed to take either the Pro or Con side of the selected subtopic.

2013: Social Media

Subtopic 1 – Should your use of social media, on or off the job, affect your employment status?
Subtopic 2 – Does the use of social media increase the risk of identity theft?
Subtopic 3 – Should providers/creators of social media sites be held liable for the negative impacts that may result from their use, such as bullying, predatory stalking, etc.?

2014: Surveillance

Subtopic 1 – Should surveillance devices be used in a public educational facility?
Subtopic 2 – Should public notices be posted by entities using surveillance devices?
Subtopic 3 – Should the Federal Transportation Security Administration change current surveillance practices for public transportation?

PURPOSE

The skill of debating is very important for government, business and technology leaders as our society faces new challenges in areas such as medicine, space exploration, pollution, global warming, economics, manufacturing and agriculture. Tied to these challenges is the necessity for proficiency in science, technology, engineering, and mathematics (STEM). Developing debate and communication skills in students, in conjunction with a focus on topics related to STEM, is an effective way to increase technological literacy.

ELIGIBILITY

Entries are limited to three (3) teams of two (2) members per state.

TIME LIMITS

A. Each speaker is allowed a maximum of three (3) minutes.

B. Each team will be given a two (2)-minute conference break.

C. All research and preparation must be started and completed during the current school year.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A Participants research all subtopics as listed in the overview and should be prepared to debate any of the subtopics from both Pro and Con views. All participants will be assigned the same subtopic. A new subtopic may be assigned for the semifinals, and all participants will debate that new subtopic.

B Pre-debate meeting: Participants report to the event area at the time and place stated in the conference program to receive an assigned debate time, subtopic and general directions and information from the judging team. Failure of participants to attend this meeting will result in disqualification. This meeting will be held for both preliminary heats and the semifinals portion of the event.

C. Each team reports to the preparation room at its assigned time.

D. One (1) minute before opposing teams are instructed to report to the presentation room, each team will be informed of the view (Pro or con) it will be presenting.

E. Once the teams are informed of the view they are to take, they will be escorted to the presentation room.

F. Order of debate format.

1. Pro speaker, maximum of three (3) minutes
2. Con speaker, maximum of three (3) minutes
3. Conference break, two (2) minutes
4. Pro rebuttal, maximum of three (3) minutes
5. Con rebuttal, maximum of three (3) minutes

G. The Pro team will be introduced by ID number and will be instructed to sit to the left side of the podium. The first speaker should sit next to the podium. At this time, participants will present their schedule card and reference summary.

H. The Con team will be introduced by ID number and will be instructed to sit to the right side of the podium. The first speaker should sit next to the podium. At this time, participants will present their schedule card and reference summary.

I. When the judges and teams are ready, the Pro speaker will be instructed to move to the podium and begin. Timing starts when the speaker begins. After 2 minutes 45 seconds, the timer will hold up a 4" x 6" card on which is written “15 seconds.” Penalty points will be deducted when a speaker exceeds the allotted time.

J. When the Pro speaker is finished and has been seated, the Con speaker will move to the podium and begin.

K. When the Con speaker is finished and has been seated, the timer will announce a two (2)-minute conference period in which both teams may prepare their rebuttal.

L. At the conclusion of the two (2)-minute conference period, the timer will announce that the conference period is over and the Pro rebuttal speaker will approach the podium. Timing starts when the speaker begins. After 2 minutes 45 seconds, the timer will hold up a 4" x 6" card on which is written “15 seconds.” Penalty points will be deducted if a speaker exceeds the allotted time.

M. When the Con rebuttal speaker (as in L. above for the Pro rebuttal speaker) is finished and has been seated, the timer will announce to both teams that they may leave the presentation room.

N. Participants will give the judges a one (1)-page list of reference materials used to research the debate subtopics. This reference list must be a word-processed document that can be printed on both sides of a sheet of paper. MLA format must be used in citing resources. A copy of the reference summary should be made and turned into the judges each time a team competes.

O. Should there be an odd number of teams entered in this event, one team will debate twice, based on a random drawing. The team that debates twice may or may not have to debate both sides of this issue. If the team does debate twice, both debates will be scored and the highest score will be used for placement.

P. If a preliminary heat format is being used, twelve (12) semifinalists will be posted in random order.

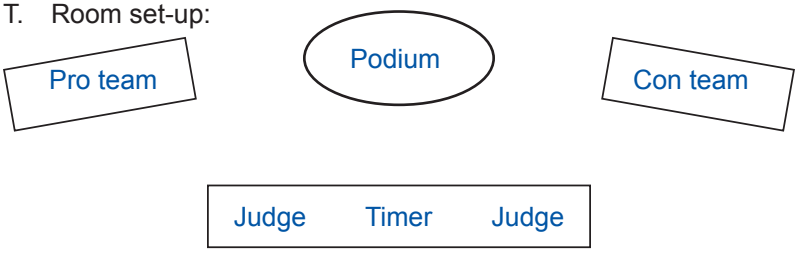
Q. Semifinalists will report to the event area at the time and place stated in the conference program to receive an assigned debate

time, as well as general directions and information from the judging team.

R. Each team reports to the preparation room at its assigned time.

S. Procedures D — O will be followed to determine the ten (10) finalists.

T. Room set-up:



☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. Participants must debate the current year's selected subtopic, as assigned at the conference.

B. Pre-written notes may be used. Notes must be written on 3" x 5" notecards.

C. Notes may be taken during the debate.

D. A three (3)-ring binder of reference material, as noted on the reference list provided to the judges, may be used during the debate.

E. No audio-visual materials of any form may be used.

F. Participants are not allowed to hear the debates of other teams.

G. No observers or assistants are allowed in the preparation room.

H. No observers are allowed to view the preliminary heats.

I. Observers are allowed in the debate room during the semifinalist debates. No audio or visual recording devices are allowed. No talking or gesturing is permitted. Observers are not allowed to enter or leave during a presentation. There is no applause until the debate is completed.

J. Teams are penalized for speaking over the allotted time. See the official rating form for time deductions.

K. Each team is required to submit a summary of references (used to prepare for the event) on an 8½" x 11" sheet of paper; both sides of the paper may be used. The event title, the event topic, and a line for the entry number must be printed at the top of the front side of the paper. The reference summary must be word-processed (handwritten is not acceptable). MLA format

must be used to cite sources. References for subtopics should be submitted on one (1) sheet of paper, not a separate sheet for each subtopic. The summary of references must be given to the judges at both preliminary heats and semifinalist rounds. Not having a summary of references will be grounds for a rules violations and participants will not advance to the next level of competition.

EVALUATION

Evaluation will be based upon a team's knowledge of the topic and communication ability (i.e., the use of debate and presentation skills).

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will effectively communicate a position related to the argument. Suggested leadership lessons: *Fact or Fiction* and *Put It Together*
- CRITICAL THINKING — Students will gather research in order to develop an argument. Suggested leadership lessons: *Critical Thinking Tips* and *Put Yourselves In Their Shoes*
- TEAMWORK — Students will work together to compete and share knowledge. Suggested leadership lessons: *Teams* and *Stepping Stones*

Additional leadership skills promoted in this event: evaluation, organization, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Lobbyist
Management executive
Motivational speaker
Politician
Public policy specialist

DEBATING TECHNOLOGICAL ISSUES EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for preliminary round of debates, two (2) or more and one (1) timekeeper/announcer per heat room

C. Escorts for moving teams from preparation room to presentation/debate room, one (1) per heat room

D. Evaluators for semifinal round of debates, two (2) or more and one (1) timekeeper/announcer; if possible, these evaluators should not judge the preliminary round of debates

E. One (1) escort for semifinal round of debates

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of personnel
   5. Pens or pencils for personnel
   6. One (1) stopwatch for each presentation/debate room
   7. One (1) 4" x 6" card with the message "15 seconds" written on the card, one (1) card for each presentation/debate room
   8. Two (2) 3" x 5" cards with Pro written on the card and two (2) 3" x 5" cards with Con written on the card for each presentation room
   9. Copies of schedule cards
   10. Semifinalist list for posting, if necessary
   11. Results envelope

B. Podium for each presentation/debate room

C. One (1) table and two (2) chairs for the Pro side and one (1) table and two (2) chairs for the Con side for each presentation/debate room

D. One (1) table and three (3) chairs for evaluators and timekeeper/announcer for each presentation/debate room; one (1) chair in the back of the room for the escort

E. Chairs only for observers during the semifinal round of presentations/debates

F. Three (3) tables and three (3) chairs in the preparation room for event personnel and participants

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the areas(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, screens, outlets, etc. Notify the event manager of any potential problems.

C. Develop a heat schedule, taking into consideration the number of presentation rooms, number of entries and time allotted for the event. Twenty (20) minutes should be allowed for each debate.

D. Develop a semifinalist schedule, taking into account the number of semifinalists and the time allotted for the event. Twenty (20) minutes should be allowed for each semifinalist debate.

E. From the list of subtopics, choose one subtopic that will be used for each round. The subtopic chosen must apply for all teams in the preliminary heats and the semifinalist round. One subtopic may be chosen for the preliminary heats and a different subtopic for the semifinalist round.

F. Gather with the participants at the scheduled time and place noted in the conference program for a pre-debate meeting. At this meeting, take attendance, review rules and procedures, provide directions and information, and announce the assigned subtopic that all participants will debate for the first round. Failure of a team to attend this meeting will result in disqualification. The coordinator may:

   1. allow participants to select a presentation/debate time, or
   2. pre-assign times and inform the participants of the schedule

G. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event

coordinator, and a CRC manager; all must initial either of these actions on the rating form.

I. Begin the event by checking in the participants when they arrive at the preparation room at their scheduled time.

J. When two (2) teams and a presentation room are available, have one (1) team draw one of two schedule cards (one card will have Pro written on it and the other card will have Con written on it). The view a team selects will apply for the entire event. Each team, with the coordinator's assistance, will complete the remaining information on the card. This card, along with a team's reference list, will be given to the judges once a team has entered the debate room.

K. Record the view each team is to present on the scheduling sheet.

L. Have the escort take the teams to the presentation room.

M. The escort will announce to the judges the ID number of the Pro team first and then the Con team. Each team will then sit on a designated side of the podium. The judges will need to record each team's ID number on the judge's evaluation sheet.

N. The escort should remain in the presentation room until the end of the debate, when s/he will escort each team from the presentation room. This process of escorting teams into and then out of the presentation room for competition will take place until all teams have participated.

O. Should there be an odd number of teams entered in this event (see Procedure O), teams will be randomly selected to determine which team will debate twice. If a team debates twice, its highest score will be used to determine placement.

P. When the timekeeper/announcer has confirmed that the teams and judges are ready to begin, s/he will instruct the Pro speaker to approach the podium and begin.

Q. The timing of each presentation will start when the speaker begins; however, if there are any unreasonable delays the speaker will be warned by the timer and timing will begin.

R. Timing of the conference break will start once the Con speaker has completed the presentation. The timekeeper will inform the teams that they are in the conference break and will also inform the teams when the period is over.

S. Once the conference break is over, the Pro rebuttal speaker will approach the podium and begin, followed by the Con rebuttal speaker.

T. When the Con speaker is finished, s/he should return to his/her seat. The timekeeper will collect the summary of references from both teams. When the evaluators are ready, the timekeeper will announce to the teams that they are to leave the room and they will be escorted out by the escort.

U. The evaluators will inform the escort when they are ready for a new set of teams so that the escort may return to the preparation room.

V. Following the last team's presentation, the evaluators will total their scores, making adjustments for time penalties.

W. Secure the evaluators' signatures on their score sheets.

X. Following the preliminary heats, the judges determine the semifinalists from their particular heats and forward these to the coordinator. The coordinator lists the semifinalists from each heat on a semifinalist list in random order that is submitted to the CRC chairperson for posting. Twelve (12) semifinalists will be posted.

Y. At the time and place stated in the conference program, meet with the semifinalists to review scheduling and procedures.

Z. Follow procedures as above for the semifinalist round of debates.

AA. All communication related to evaluators and participants during the presentation/debate should be handled by the timekeeper.

AB. Evaluators average their scores to determine the ranking of the ten (10) finalists. All ratings by the evaluators should be done independently. Evaluators discuss and break any ties.

AC. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

AD. If necessary, manage security and the removal of materials from the event area.

DEBATING TECHNOLOGICAL ISSUES

SCHEDULE CARD

Assigned view: **Pro**

Entry number _____

Debate time _____

Heat number and room _____

Comments:

DEBATING TECHNOLOGICAL ISSUES

SCHEDULE CARD

Assigned view: **Con**

Entry number _____

Debate time _____

Heat number and room _____

Comments:

Participant/Team ID# _____

DEBATING TECHNOLOGICAL ISSUES

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Debate (90 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Points of argument (X1)	Team does not get the attention of the audience, and/or does not outline points clearly and distinctly.	Team makes an effort to grab the attention of the audience; previewing points are somewhat organized in a logical manner.	Introduction uses an attention getter, clearly states the thesis, previews main points of the the team is cognizant of the audience, and enunciates well; the speaking is fluid.	
Organization (X1)	Ideas may not be focused or developed; the main purpose is not clear; the introduction is undeveloped; main points are difficult to identify; transitions may be needed.	The main idea is evident but the organizational structure may need to be strengthened; ideas may not be clearly developed or always flow smoothly, and the purpose is not clearly stated; main points are not clear.	Ideas are clearly organized, developed, and supported; the purpose is clear; main points are clear and organized effectively.	
Topic knowledge (X2)	The team does not have a grasp of the information; it cannot answer questions about the subject; inaccurate, generalized, or inappropriate supporting material is used; there is an over-dependence on notes.	The team has a partial grasp of the information; supporting material may lack in originality; the team is at ease with expected answers to all questions but fails to elaborate.	The team has a clear grasp of information; citations are introduced and attributed accurately; the team demonstrates full knowledge, with explanations and elaboration of the subject area.	
Delivery (X2)	Delivery detracts from the message; eye contact may be very limited; presenter may tend to look at the floor, mumble, speak inaudibly, fidget, or read most of the speech; gestures and movements may be jerky or excessive.	Delivery generally seems effective, however, good use of volume, eye contact, vocal control, etc. may not be consistent; some hesitancy may be observed; vocal tone, facial expressions, and/or other nonverbal expressions do not detract from the message.	Delivery is extemporaneous, natural, confident, and enhances the message; posture, eye contact, smooth gestures, facial expressions, volume, pace, etc. indicate confidence, a commitment to the topic, and a willingness to communicate.	
Rebuttal (X1)	Rebuttal is unorganized, unclear, and/or incoherent; rebuttal includes no counter to points made from the opposing team.	Rebuttal is somewhat organized, wordy and often incoherent, but it creates a mostly logical counter to the opposing team's points.	Rebuttal is logical, concise, and creative; counter arguments from the opposing team are each incorporated in the rebuttal in a unique and interesting way.	
Voice and language (X1)	Language choices may be limited, peppered with slang or jargon, too complex, or too dull; language is questionable or inappropriate for the audience.	Language used is mostly respectful or inoffensive; language is appropriate, but word choices are not particularly vivid or precise.	Language is familiar to the audience, appropriate for the setting, and free of bias; language choices are vivid and precise.	

DEBATING TECHNOLOGICAL ISSUES (continued)				
Debate (90 points) (continued)				
Group member participation (X1)	One team member does majority of the speaking and/or debating on the topic; the other student seems disengaged from the presentation.	Both team members are engaged in the debate, but one student clearly takes the lead and allows the other student to only reply/ refute statements.	Both team members are actively involved in the presentation, debate, and rebuttals of the topic, sharing responsibility throughout.	
			SUBTOTAL (90 points)	

Time violation (a deduction of five points total will be incurred for exceeding the debate time limit). Record the deduction in the space to the right.	
Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (90 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

DESKTOP PUBLISHING

OVERVIEW

Participants produce a notebook containing a news release, a three (3)-column newsletter, and a poster. Each of these publications might be used by a school's technology teacher and/or principal to attract students to the TSA organization. The news release and poster would promote the first TSA meeting of the school year. The newsletter would give details about the TSA program at the school, state, and national levels, and TSA competitions.

All participants (not just semifinalists) work to solve an on-site problem that demonstrates their ability to use the computer to design and edit materials for in-house publication.

☑ In this event, students have the opportunity to compete using the computer and software of their choice.

PURPOSE

Participants are provided with the opportunity to demonstrate an understanding of desktop publishing software and the technology used to prepare three (3) common publication formats.

ELIGIBILITY

Participants are limited to one (1) individual per state, one (1) entry per individual.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Participants have a thirty (30)-minute set-up time before the event.

C. Participants have two and one-half (2½) hours to complete the on-site problem.

☑ There is no semifinalist "cut" in this event. Everyone who enters participates in the on-site activity.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

☑ Students should not use templates for this event, but instead create publications from scratch that incorporate the basic principles of design.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program.

B. Entries are reviewed by evaluators.

C. Participants report to the event area at the time and place stated in the conference program for the on-site component.

D. Participants are allowed thirty (30) minutes to set up before the event.

E. Participants are provided with the publishing problem and are allowed two and one-half (2½) hours to complete their entry.

F. A final color output of the entries is saved as a PDF file, turned in on a USB flash drive, and judged.

G. All winning entries, digital and hard copy, become the property of TSA, Inc.

H. Participants pick up their entries from the display area at the time and place stated in the conference program.

REGULATIONS

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

A. The notebook publication items (a news release, a three (3)-column newsletter, and a poster) must follow these guidelines:
   1. The notebook items should be developed in color on white 8½" x 11" paper. Color, preprinted, or designed paper may not be used.
   2. Clip art may be used. No templates may be used.
   3. The notebook items must have applicable headings. The content of the notebook items must be appropriate for viewing at the national TSA conference. Any notebook that includes images depicting sex, drugs, tobacco, gangs, cults, etc. will be disqualified.
   4. The news release and poster should be printed only on one (1) side of a white 8½" x 11" sheet of paper.
   5. The newsletter may be printed on both sides of a white 8½" x 11" sheet of paper.
   6. All items should be put in clear sheet protectors and placed in a notebook, which should be a standard three (3)-ring binder. Additional items may not be included.
   7. The notebook is identified using only the participant's identification number. Participants are to create a fictitious school name and city. Participants are not to identify themselves or other members of their chapter in their publications.

B. Participants supply their own computer work station with USB drive, power strip/surge protector, extension cord, and software for the on-site portion of the event. A laptop computer is recommended. Anyone who does not provide these items will not be allowed to compete in the on-site event.
   1. The on-site entry is identified using only the participant's conference identification number. Create a fictitious school name and city.
   2. Clip art may be used. No templates may be used.
   3. All on-site work is developed, saved as a PDF file on an external drive (USB flash drive) and submitted using only the participant's ID#.
   4. Participants leave the event room only with permission from the event coordinator.
   5. The on-site project should be saved and submitted when a participant completes his/her work and/or when time elapses.
   6. All entries become the property of TSA, Inc. and will not be returned after judging.

EVALUATION

Evaluation is based on points earned for notebook development, for pre-press abilities, for the solution to the on-site problem, and for the final printed product. Please refer to the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students ensure that the entry is complete and presentable. Suggested leadership lessons: *Promote It* and *Put It Together*
- CREATIVE THINKING — Students create original ideas based on specifications. Suggested leadership lessons: *HAT To Be Creative* and *Invention Mishap*
- PROBLEM SOLVING — Students devise a plan for how to solve a problem. Suggested leadership lessons: *Effective Brainstorming* and *Problem Solving Steps*

Additional leadership skills promoted in this event: decision making, evaluation, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Advertising or marketing executive
Editor or copy editor
Corporate communications manager
Writer

DESKTOP PUBLISHING
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for notebooks, two (2) or more

C. Evaluators for on-site activity, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens for evaluators
   6. Results envelope

B. Tables for computer systems (2' x 4' minimum, each), one (1) per participant

C. Chairs, one (1) per participant

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number in the lower right-hand corner of the notebook. Position the displays for evaluation and viewing. Secure the entries in the designated area.

E. Meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently review each entry and complete the official rating form.

G. Inspect the area(s) in which the on-site activity is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

H. Meet with your evaluators for the on-site activity to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

I. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

J. Evaluators monitor the participants during the on-site activity, independently review each entry, and complete the official rating form.

K. Each participant (noting his/her individual ID number) will save the final product in a PDF file on the coordinator's USB flash drive. The coordinator will download the files from the USB drive to a designated computer, which will be used by judges for viewing and evaluating.

L. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

M. Evaluators total the scores from the display and the on-site problem for each participant and then calculate the average of their scores to determine the ten (10) finalists. Evaluators discuss and break any ties for the top ten (10) placements.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

DESKTOP PUBLISHING

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

News Release (30 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Layout and design (X1)	The layout does not resemble a standard news release and/or is missing essential design elements to attract the reader's attention.	The layout resembles a standard news release, includes most design elements, has few mistakes, and grabs the reader's attention.	The news release is concise, encompasses all standard layout elements, attracts the reader's attention, and has creativity at the forefront of the design.	
Content (X1)	The release lacks the necessary elements to promote a first TSA meeting, such as date, time and/or place, and fails to inform readers about TSA as an organization.	The release contains the elements necessary to promote a first TSA meeting, but lacks creativity; only facts are included, resulting in a release that may not attract potential TSA members.	The release contains all elements necessary to promote a first TSA meeting, and is written in a creative and entertaining style that would appeal to and attract potential TSA members.	
Effectiveness (X1)	The news release does not convey the intended message appropriately and/or contains unrelated text and/or graphics.	The news release conveys the intended message, but it contains some inappropriate and/or unrelated text/graphics.	The news release can be easily understood and interpreted, with exceptional use of related graphics and text.	
			SUBTOTAL (30 points)	

Newsletter (40 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Creative layout and graphics (X1)	The layout does not reflect the standard three-column newsletter and/or is missing essential design elements; graphics are either non-existent or are poorly placed and/or of poor quality.	The layout is adequate for a standard three-column newsletter, but it does not draw the reader to key information; the graphics are adequate but may appear as an afterthought of the design.	The layout is exceptional and draws the reader to key information conveyed; the graphics are well placed, exceptional and enhance the overall design.	
Content (X1)	The newsletter does not provide details about TSA at the school, state, and national level and/or does not include information about current TSA high school events.	The newsletter provides basic details about TSA at the school, state, and national levels, but it does not include TSA high school events and/or has inadequate and/or incorrect information about the events.	The newsletter provides clear details about TSA at the school, state and national levels; it includes concise, accurate information about each TSA high school event.	
Effectiveness (X1)	The newsletter does not effectively convey the intended message and/or contains unrelated text and/or graphics that detract from the design and theme.	The newsletter conveys the intended message, but it is verbose and contains some inappropriate and/or unrelated text or graphics that do not support the theme.	The newsletter's message is concise and organized in a way that is easily understood and interpreted, with exceptional use of related graphics and text that promote the theme.	

DESKTOP PUBLISHING (continued)				
Newsletter (40 points) (continued)				
Incorporation of graphic design principles (X1)	The graphic design does not incorporate or embody the following design principles: alignment, consistency, contrast, unity, white space, balance, proportion.	The graphic design is missing one or two of the design principles, but it still provides a layout that is generally aesthetically pleasing.	The graphic design is clearly aesthetically pleasing, with all design principles incorporated into the overall design and layout.	
			SUBTOTAL (40 points)	
Poster (30 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Layout and design (X1)	The poster's layout does not resemble a standard poster and/or is missing essential poster/brochure design elements.	Most elements of poster design are followed, few mistakes are made in the layout, and it grabs the reader's attention.	The poster is concise and encompasses all standard layout elements, with creativity at the forefront of the design.	
Content (X1)	The poster does not contain the elements necessary to promote a first TSA meeting, (such as date, time and/or place) and fails to describe TSA as an organization.	The poster contains elements and facts necessary to promote a first TSA meeting but lacks creativity, which results in a poster that may or may not attract potential members.	The poster contains all the elements necessary to promote a first TSA meeting and is written in a creative and entertaining way that would attract potential members.	
Effectiveness (X1)	The work does not convey the intended message appropriately and/or contains unrelated text or graphics.	The work conveys the overall intended message, but it contains some inappropriate and/or unrelated text/graphics.	The message is easily understood and interpreted, with exceptional use of related graphics and text.	
			SUBTOTAL (30 points)	
Solution of On-site Problem (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Layout and design (X1)	The design does not incorporate or embody the design principles of alignment, consistency, contrast, unity or white space.	The design is missing one or two design principles, but the overall layout is generally aesthetically pleasing.	An aesthetically pleasing design is provided, with all design principles incorporated into the layout and design.	
Solution to project (X2)	Three or more attributes of the solution's criteria are missing.	Two or fewer attributes of the solution's criteria are missing.	None, or only one, of the attributes of the solution's criteria is/are missing.	
Effectiveness (X1)	The solution does not convey the intended message appropriately and/or contains unrelated text/graphics.	The solution conveys the intended message appropriately, but it contains some unrelated text and/or graphics.	The message is easily understood and interpreted, with exceptional use of related graphics and text.	
Originality (X1)	The design does not incorporate or embody the principles of creativity: freshness, idea cultivation, realness, bravery, momentum, and/or visual signaling.	The design is adequate, but it is missing up to three applicable principles of creativity.	The design is truly unique and includes almost all applicable principles of creativity.	
			SUBTOTAL (50 points)	

DESKTOP PUBLISHING (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (150 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

DIGITAL VIDEO PRODUCTION

☑ There is no denying the widespread influence of film in modern society. With this event you can demonstate your mastery of this powerful tool in any way you choose.

Note: The video production may be animated.

OVERVIEW

Participants develop a digital video that focuses on the given year's theme. Sound should accompany the video.

The theme for 2013 is Follow the Rules.
The theme for 2014 is Documentary.

PURPOSE

Participants have the opportunity to use digital video skills, tools, and processes to communicate, entertain, inform, analyze, or illustrate the given year's theme. An extremely powerful and ubiquitous medium, video technology has great potential, strengths, and limitations that should be understood by all.

ELIGIBILITY

Participants are limited to three (3) teams per state, one (1) entry per team.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. The video should not exceed five (5) minutes in length. If it is over five (5) minutes, a rules violation will be assessed.

C. The time starts with the first image or sound and continues until the last sound or image ends.

D. The video should be able to be played from a stand-alone DVD player.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.

C. Ten (10) finalists are announced at the awards ceremony.

REGULATIONS

A. Videos must be submitted on a DVD, playable from a stand-alone DVD player.

B. The video should not exceed five (5) minutes in length. If it exceeds five (5) minutes, a rules violation will be assessed.

C. All entries become the property of TSA, Inc. and will not be returned after judging.

D. Entries should, but not must, be a team project.

E. All video footage must be the original work of the team and must have been completed within the current school year.

F. All ideas, text, images, and sound from other sources must be properly cited. If copyrighted material is used, proper written permission must be included. NOTE: The video production product will not be judged if copyright procedures are not followed.

G. The video and an 8½" x 11" notebook are turned in to the event coordinator. The notebook is presented and organized in a professional manner. The notebook is a standard three (3)-ring binder, with a clear front sleeve for a cover page. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the title of the video, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Purpose and description of the video; one (1) page
4. Team's self-evaluation of the video using criteria from the official rating form; one (1) page
5. Hand sketched storyboard; pages as needed
6. Script; pages as needed
7. List of hardware and software used in the development of the video; one (1) page
8. List of references that includes sources for materials (copyrighted and non-copyrighted); pages as needed

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events. For this event, especially note the rule about original work and the use of materials from other sources.

9. Permission letters for copyrighted material, including clips and images; pages as needed
10. Completed and signed Student Copyright Checklist
11. Signed consent forms for all video participants
12. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible and comments (see Plan of Work log); one (1) page

EVALUATION

Evaluation is based on the video footage and on the accompanying documentation. Depending on the stated purpose, videos are judged on story concept, artistic and/or social value, audio and camera techniques, transitions and pace, as well as technical attributes, creativity and organization, and the overall effect. Notebooks should be complete, well-written, and professional in organization and appearance. They should include the storyboard and a narrative of the project planning and organization process. Please refer to the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will organize and produce a well-written notebook. Suggested leadership lessons: *Fact or Fiction* and *Listening Skills*
- CREATIVE THINKING — Students conceptualize original ideas in their video. Suggested leadership lessons: *Color Hunt* and *The Leadership Chronicles*
- EVALUATION — Students review and critique work throughout the development of their video. Suggested leadership lessons: *Evaluation Imagination* and *Seven Components of Effective Evaluation*

Additional leadership skills promoted in this event: organization, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Audio/video operator or technician
Cinematographer
Film/video editor
Screen editor

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through video/film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

Name of minor in images (please print)

Name of minor's parent/guardian (please print)

Name of adult in images (please print)

Parent/guardian or adult's signature (as applicable)

Date

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

1) Does your solution to the competitive event integrate any music? YES _____ NO _____

If NO, go to question 2.

If YES, is the music copyrighted? **YES _____ NO _____**

If YES, move to question 1A. If NO, move to question 1B.

1A) Have you asked for author permission to use the music in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission (OR use royalty free/your own original music) and if permission is granted, include the permission in your documentation.

1B) Is the music royalty free, or did you create the music yourself? If YES, cite the royalty free music OR your original music properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any music into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of music is done so with proper permission and is cited correctly in the student's documentation.

2) Does your solution to the competitive event integrate any graphics? YES _____ NO _____

If NO, go to question 3.

If YES, is the graphic copyrighted, registered and/or trademarked? **YES _____ NO _____**

If YES, move to question 2A. If NO, move to question 2B.

2A) Have you asked for author permission to use the graphic in your solution and included that permission (letter/form) in your documentation? If YES, move to question 3. If NO, ask for permission (OR use royalty free/your own original graphic) and if permission is granted, include the permission in your documentation.

2B) Is the graphic royalty free, or did you create your own graphic? If YES, cite the royalty free graphic OR your own original graphic properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any graphics into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics is done so with proper permission and is cited correctly in the student's documentation.

3) Does your solution to the competitive event use another's thoughts or research? YES _____ NO _____

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? If YES, this is the end of the checklist.

If NO, properly cite the thoughts/research of others in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any thoughts/research of others into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation.

DIGITAL VIDEO PRODUCTION
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) for every twenty (20) entries or fraction thereof

C. Evaluators for semifinalists, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens and notepads for evaluators
   6. One (1) stopwatch per team of evaluators
   7. Calculators, one (1) for each evaluator
   8. Results envelope

B. Tables and chairs for evaluators

C. Standalone DVD player or a computer capable of reading a DVD, one (1) each per evaluation team

D. Extension cords, one per evaluation team (25' minimum length)

E. Power bar with surge protection, one (1) per evaluation team

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only

when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number on each DVD and notebook. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Each group of evaluators averages its two (2) scores to determine the top five (5) entries from that group. [The number of evaluator groups depends on the number of entries. In this case, there are two (2) evaluators for every twenty (20) participants.] The top five (5) entries from each group are forwarded to the event coordinator.

I. The coordinator lists the semifinalists [there may be more than twelve (12)] in random order on new rating forms that are given to the semifinalist evaluators. The semifinalist list is NOT posted.

J. Semifinalist evaluators independently assess the semifinalists.

K. Semifinalist evaluators average their scores. The average score of the semifinalist evaluators determines the top ten (10) finalists and their ranking. Evaluators discuss and break any ties.

L. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

M. Bring all DVDs, notebooks, extension cords, and supplies to the CRC room at this time. Return DVD players or computers to appropriate personnel.

Participant/Team ID# _____

DIGITAL VIDEO PRODUCTION

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Preproduction Documentation (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation G (X1)	The notebook is completely unorganized and/or is missing three or more components.	The notebook is missing two components, and/or is loosely organized.	The notebook is clearly organized and has either one or no missing components.	
Purpose and description (X1)	The purpose and description of the video are unclear and hard to visualize; major grammatical errors are evident.	The purpose and description of the video are clear, but they are not concisely written and/or contain some grammatical errors.	The documentation provides a clear and concisely written purpose and description that interest the reader, with few or no grammatical errors.	
Storyboard (X1)	The hand-sketched storyboard and script are sloppy, appear to be thrown together as an after-thought, and/or do not correlate with the video.	The storyboard and script are drawn appropriately and generally correlate with the completed video.	The storyboard and script are of exceptional aesthetic and artistic quality, and they clearly correlate with the video.	
			SUBTOTAL (30 points)	

Video Production (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Video (X1)	The video shots have obvious problems with focus, steadiness, and framing.	The video shots are clearly focused and framed, with limited zooms.	The video is enhanced by steady, creative shots and incorporates excellent use of close-ups.	
Audio (X1)	The audio quality is poor, a result of primary use of the on-camera microphone for recording.	The audio is clear with good levels and reflects the correct use of microphones and audio techniques.	The audio quality is excellent, with use of additional audio clips/cues that enhance the video production.	
Lighting (X1)	The video reflects poor ambient lighting choices and/or the use of heavy back-lighting.	The video reflects adequate lighting on subjects and the proper use of lighting techniques.	The video reflects the excellent and creative use of lighting, which propels the story emotionally.	
Continuity and pacing (X1)	The sequencing is confusing or incomprehensible; shots are left on too long, and edit points/ transitions are "glitchy."	The pace and timing are well structured; the shots move along, helping to tell the story, and there is moderate use of transitions.	The shots are logically paced and move the story along in an interesting way, with excellent and purposeful use of transitions.	
Creativity and originality (X1)	There is little original thought or creativity in the design and production, resulting in what appears to be a "regurgitation" of events pieced together.	The video reflects original thought and creative elements that are effectively expressed and highlighted.	Originality and creativity are at the forefront of the video, with thematic elements incorporated in a highly authentic way.	

DIGITAL VIDEO PRODUCTION (continued)				
Video Production (70 points) (continued)				
Video effectiveness (X2)	The work does not meet the project goals, has an unclear message, and reflects sloppy work.	The topic is presented with some insight, but the video does not clearly meet all project goals.	The video is focused, with a clear message and a rich variety of supporting material.	
			SUBTOTAL (70 points)	

Time violation (a deduction of five points total will be incurred for exceeding the five-minute limit for the length of the video). Record the deduction in the space to the right.	
Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

DRAGSTER DESIGN

OVERVIEW

Participants design, produce working drawings for, and build a CO2-powered dragster.

PURPOSE

Participants have the opportunity to design and produce a fast CO2-powered dragster according to stated specifications and using only certain materials.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one (1) entry per individual.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Each dragster and drawing must be submitted at the time and place stated in the conference program.

C. Drawings and cars must be picked up at the specified time upon the conclusion of the event.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program.

B. Entries are reviewed by evaluators to determine, among other things, safety on the track.

C. Safe dragsters race for qualifying time on the same lane of the raceway.

☑ Be sure to review the specifications each year, even if you're a regular participant. This event is modified with each new edition of this guide.

D. The top sixteen (16) qualifying cars, based on the time trials, are evaluated against the criteria for this event.

E. Dragsters that do not meet event regulations are disqualified and lower qualifying cars are moved up until sixteen (16) dragsters that meet specifications are determined.

F. A wind tunnel test is performed to determine relative wind resistance.

G. The top sixteen (16) cars race in a double-elimination format to earn points for the race portion of the event.

H. Drawing, design and body finish points are combined with race points to determine the final standings.

REGULATIONS

A. Each entry must be submitted at check-in with a full-size metric drawing of the completed vehicle. A two (2)-view (top and side) drawing with metric dimensions is made on paper no larger than 11" x 17" drawing paper. Drawings are developed using standard engineering practices and procedures. The drawing may be produced using traditional drafting methods or CAD. The title block includes only the participant's "entry number" that is assigned at registration time and is placed on the entry and drawing during check-in.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

B. The official distance between the start line and the finish line on the race track is twenty (20) meters.

C. No repair or maintenance is allowed after the entries have been registered. Any entry damaged during the race is evaluated by the event coordinator to determine whether or not the vehicle is allowed to race again. In the event that the vehicle is damaged by the conference personnel, the event coordinator rules as to whether the vehicle may be repaired by the student entering the vehicle. This is the only reason a student is allowed to touch his/her vehicle after registration. Undamaged wheels that come off during the event may be replaced as determined by the event coordinator. Damaged wheels may not be replaced.

D. All CO2 cartridges for the race are provided by national TSA.

E. ***Dragsters that do not meet the following specifications/tolerances are disqualified from the race.***

Dragster body

1. One (1)-piece, all-wood construction. Any type of lamination results in disqualification. No add-ons such as body strengtheners, fenders, plastic canopy, exhausts, or air foils may be attached to or enclosed within the vehicle. Fiberglass and shrink wrap are considered body strengtheners and cannot be used on the car body for any reason. Decals may be used for decoration only; they may not be used to gain an aerodynamic advantage, i.e., decals cannot cover the exterior axle holes or be used to cover open areas of the body. Two (2) or more like or unlike pieces of wood glued together are not considered one-piece, all-wood construction.

ALERT: Read the regulations closely as there are significant changes to this event from prior years.

NOTE: For 2013, ALL front wheels must be outside the car body.

		MINIMUM	MAXIMUM
2.	Body length	(2013) 250mm	260mm
		(2014) 290mm	300mm
3.	Body height with wheels		75mm
4.	Body mass (completed car without CO2)	(2013) 40g	N/A
		(2014) 40g	N/A
5	Body width at axles, front and back	35mm	42mm
6.	Vehicle total width (including wheels)		90mm

Axles/axle holes/wheelbase

1. Dragsters must have two (2) axles per car, no more.
2. Bottom of axle hole or bearing above bottom of car body. (NOTE: This will be measured at the sides of the wood car body, from the bottom of the car directly beneath the axle to the bottom of the axle hole or bearing hole.)

   5mm 10mm
3. Axle hole from front and rear of car ..... 9mm 100mm
4. Wheelbase (axle distance apart at farthest points) 105mm 270mm
5. Bearings, bushings and lubricants may be used.
6. Glue may be used to secure bearings to body.

Spacer washers/clips

1. Spacer washers.....8
2. Axle clips 8
3. Silicone or any other type of glue/adhesive may not be used in place of wheel clips to hold wheels or axles in place.

Power plant (CO2 cartridge hole)

1. The power plant hole must be at the farthest point at the rear of the car and must be drilled parallel to the racing surface to assure proper puncture of the CO2 cartridge. A minimum of 3mm thickness around the entire power plant hole must be maintained on the dragster for safety. The inside of the power plant hole must not be intentionally painted.
2. Hole depth ..... 45mm 55mm
3. Safety zone thickness..... 3mm
4. Chamber diameter..... 19mm 20mm
5. Lowest point of chamber diameter to race surface (with wheels)..... 26mm 40mm

Eye screws

1. Dragsters must have two (2) screw eyes per car that meet tolerances, no more. Screw eyes must not make contact with the racing surface. The track string must pass through both screw eyelets, which are located on the center line of the bottom of the car. Glue may be used to reinforce the screw eyes. It is the responsibility of the car designer/engineer to see that the eye screw holes are tightly closed to prevent the track string from slipping out. As with all adjustments, this must be done prior to event check-in.
2. Inside diameter ..... 3mm 5mm
3. Distance apart (at farthest points)..... 150mm 270mm

Wheels

1. A dragster must have four (4) wheels, no more. Two (2) wheels must meet rules W2 and W3. The other two (2) must meet rules W4 and W5. All four (4) wheels must touch the racing surface at the same time. All wheels must roll. Wheels must be made entirely from plastic. Dimensions must be consistent for the full circumference of the wheel. *For 2013 only, ALL front wheels must be outside the car body.*

2. Front diameter ..... 30mm 37mm
3. Front width (at surface contact point) ..... 1.5mm 5mm
4. Rear diameter ..... 30mm 40mm
5. Rear width (at surface contact point) ..... 12mm 18mm

EVALUATION

Evaluation is based on points earned through car design and appearance, accuracy, and quality of the drawing, as well as points earned through the wind tunnel test and placement in the double elimination on-site race.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CREATIVE THINKING — Students produce creative ideas based on specifications. Suggested leadership lessons: *Creative Techniques* and *HAT To Be Creative*
- EVALUATION — Students evaluate their entry using time trials, testing and rebuilding. Suggested leadership lessons: *Silence Is Golden* and *Your Dream Car*
- PROBLEM SOLVING — Students fix/adjust their entry after evaluation. Suggested leadership lessons: *Effective Brainstorming* and *Problem Solving Steps*

Additional leadership skills promoted in this event: decision making, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Automotive designer
Automotive modeler
Industrial designer
Industrial engineer
Race car engineer

DRAGSTER DESIGN
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Recorder for double elimination chart, (one) 1

D. Assistants, two (2)

MATERIALS

A. Coordinators box, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Time trial record sheet
   6. Double elimination bracket chart/overhead projector
   7. Results envelope

B. CO2 cartridges

C. Go/No-go gauges for all evaluators

D. Metric scientific scales (triple beam balance or digital)

E. Mono-filament fishing line (suggested between 30 and 50 lb.) for track (4 pre-tied: 2 on track and 2 reserve)

F. Race track set, including a starting gate and finish gate with digital timer and winning lane indicator

G. Padding for the finish gate

H. One (1) or more test cars

I. Race brackets for placement of the semifinalists

J. Tables for the display of cars and for evaluation

K. Table at the starting line, for arranging and holding cars prior to the races

L. Table at the finish gate for the placement of cars after the races and to hold eliminated cars

M. Table for the official timekeeper

N. When using a computer controlled track, provide the proper computer for the software being used, all necessary connections, and a printer. This equipment is placed on the official timekeeper's table.

O. Provide for a display of time trial and race brackets.

P. Ultraviolet ink and light to mark cars and check for cars that have been previously entered.

RESPONSIBLITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number on each entry. Position entries for evaluation and viewing. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Assist the evaluators during the evaluation of the design, drawing, and construction categories. Participants do NOT have to be present at this time.

G. After testing all race-worthy cars in the time trial, evaluators verify that the top sixteen (16) semifinalists meet all specifications. Only raceable cars, as determined by the evaluators, are allowed to compete in the semifinalist category. Cars that are damaged or broken during the qualifying round are deemed non-raceable and are not allowed to run in a semifinalist position. Eliminated entries not meeting specifications are removed. Lower qualifying cars are moved up until sixteen (16) legal cars are determined.

H. Each car is timed in the same lane. Cars are timed only once. It is important that each car be positioned as well as possible in the starting gate. If, in the opinion of the evaluators, a car misfires or a timing error occurs, the race may be rerun.

I. The operator's preliminary times are recorded on the time trial record sheet. Each vehicle is ranked according to fastest time first, second fastest time second, and so on. The top sixteen (16) cars that meet specifications are run in the semifinals. A sample double-elimination bracket appears after this section.

J. Position one evaluator at the starting gate to check to see that all cars are positioned in the starting gate as well as possible. If the evaluator feels there is any sort of a misfire, a rerun can be ordered. Position one evaluator at the finish gate to rule on the finish of a race in case of failure of the finish lights or a very close finish. If the evaluator feels there is any sort of timing error, a rerun may be ordered.

K. Test cars in the wind tunnel, record the drag coefficient, and assign points as indicated on the official rating form.

L. Mark cars that have been raced with ultraviolet ink.

M. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

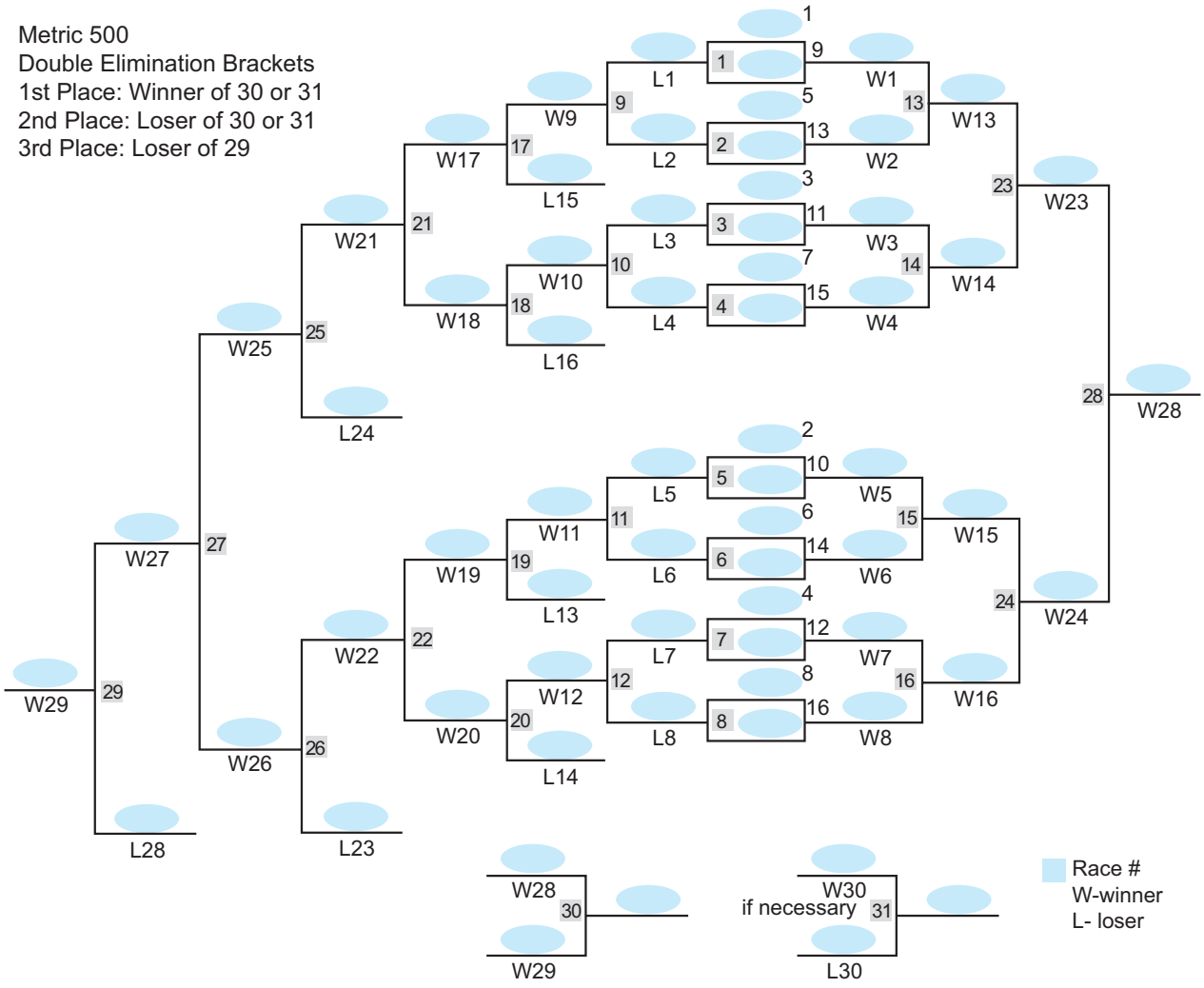
N. Secure the evaluators' signatures on their rating forms. Evaluators discuss and break any ties.

O. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

P. Manage security and the removal of materials from the area.

RACE BRACKET FOR 16-CAR DOUBLE ELIMINATION

Metric 500
Double Elimination Brackets
1st Place: Winner of 30 or 31
2nd Place: Loser of 30 or 31
3rd Place: Loser of 29



Participant/Team ID# _____

DRAGSTER DESIGN

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Dragster Construction (50 points)

Tolerance violation/disqualification from race (Note rule number in the box.)			**Rule #:**
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)			
Dragster body production quality (X1)	Dragster exhibits poor production quality, with a crude and rough surface and little or no attention to detail.	Dragster shows evidence of proper production techniques; it is adequate but needs improvement.	Dragster displays excellent production techniques, with obvious attention to detail and quality.
Body paint/finish (X1)	Surface preparation is inadequate; the body is unprimed, with poorly applied final finish.	Dragster body is painted and finished, but the finish is dull and/or sticky.	Dragster body finish is exemplary; body is smooth, shiny and exhibits quality.
Vehicle assembly (X1)	Dragster exhibits poor or sloppy assembly of parts (wheels are loose, eye screws are loose and/or not level, etc.).	Dragster is well assembled, but it meets only minimal standards (little attention to detail).	Dragster is properly assembled, with obvious evidence of attention to detail.
Drawing scale and dimensioning (X1)	The drawing is present but is not to scale; dimensions are missing, or dimensioning is poorly done.	The drawing is acceptable and to scale; it is a close representation of the vehicle, but some dimensions are missing.	The drawing is exemplary, exact and includes all pertinent dimensions.
Drawing completion and quality (X1)	Drawing work is sloppy, missing parts and lacking quality.	The drawing is complete, but the quality is average.	The drawing is complete and precise, and of exceptional quality.
			SUBTOTAL (50 points)

Wind Tunnel (5 points)

1st	2nd	3rd, 4th	5th, 6th, 7th	8th, 9th, 10th
5 points	4 points	3 points	2 points	1 point

SUBTOTAL (5 points)

Race (55 points)

1st	2nd	3rd	4th	5th & 6th	7th & 8th	9th - 12th	13th – 16th
55 points	50 points	45 points	40 points	35 points	30 points	25 points	15 points

SUBTOTAL (55 points)

Record scores in the column spaces below.

DRAGSTER DESIGN (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (110 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

ENGINEERING DESIGN

OVERVIEW

Participants work as part of a team to design and fabricate a device that will meet the specific needs of a person with a disability. Through use of a model/prototype, display, and notebook, participants document and justify their approach and reasoning in identifying a problem and their solution's direct impact on a member of their community and on society. Semifinalists justify and demonstrate their solution to their identified problem in a timed presentation.

☑ The ultimate goal for this event is the creation of an effective assistive device to meet the needs of a person with a specific disability. Read the regulations carefully, secure a mentor, identify a disability, conduct research, and choose a new or improved design for your team.

PURPOSE

Participants apply the principles and practices of engineering and universal design in developing an effective and practical solution to a specific design problem that they have identified, which incorporates the application of scientific and mathematical principles and concepts, which demonstrates the application of technology, and which assesses the impact of the solution on a specific individual and on society.

ELIGIBILITY

Participants are limited to one (1) team of three to five (3-5) students per chapter; one (1) entry per team.

☑ Teams that participate in this event will quickly recognize the need to explore and research disabilities and the effect they have on handicapped individuals, their mobility (including transportation challenges), their success in the workplace, and their comfort at home.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Semifinalists are allowed up to ten (10) minutes to present their solution.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program. No more than two (2) team members set up the display.

"thinking outside the box"

Each design team should utilize this process or concept when selecting its disability design problem. Many examples of devices already exist that may serve as the basis for designing and creating newer and more effective products and solutions. The integration of electronics and robotics into design solutions is encouraged.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. Semifinalist teams report to the event area at the time and place stated in the conference program.

D. Semifinalist teams explain their solution, its marketplace potential, and its impact on people with disabilities and society. Evaluators are free to ask questions of each team of presenters.

E. No more than two (2) team members pick up their entry from the display area at the time and place stated in the conference program.

REGULATIONS

A. Each team is required to secure the assistance and support of a team mentor—someone other than the TSA advisor. The name, address, and occupation of this individual should be documented and included in the specified place in the team's documentation notebook.

B. Each team is also encouraged to identify a partner or associate with a disability. The name, address, and occupation of this individual can be documented on the same page as the above and included in the team's documentation notebook.

C. The entire solution (including model/prototype, design portfolio, display and any equipment needed for the presentation) must not exceed 15" deep x 3' wide x 4' high.

D. A documentation notebook is required and must be submitted with the display. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Mentor/associate verification that includes the name, address, and occupation of each individual.
4. A design brief (format that follows) that describes the design and its constraints; one (1) or more pages

DESIGN BRIEF

Context:	States the nature of the engineering design
Task:	Clearly states what the team will be involved in doing
Restrictions:	Identifies any restrictions
Investigations:	Identifies the research involved
Development:	States essential elements involved in planning
Production:	Identifies the expected end result
Evaluation:	Identifies the expected assessment procedure and criteria

5. A description of the problem solving steps; pages as needed
6. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible and comments (see Plan of Work log); one (1) page
7. Evidence of research conducted by the design team; pages as needed
8. Documentation of brainstorming; pages as needed
9. Descriptions and illustrations of a minimum of three (3) possible solutions with a brief but concise evaluation of the merits of each; three (3) or more pages
10. A detailed description of the final solution, including an explanation of the steps of operation; pages as needed
11. A three (3)-dimensional technical or CAD drawing and/or rendering of the final solution; the maximum sheet size is drawing sheet cut size B—11" x 17"; when this sheet size is used, the sheet must be hole-punched and folded or placed in a sheet protector for insertion in the binder; pages as needed
12. Math and science concepts and applications involved in the final design solution; one (1) page
13. Explanation of the areas of technology that are an integral part of the solution, including as many as apply; pages as needed
    a. Medical technology
    b. Agriculture and biotechnology
    c. Energy and power
    d. Information and communication
    e. Transportation
    f. Manufacturing
    g. Construction
14. A list of references and resources; MLA style must be used in citing all references and resources; pages as needed
15. An evaluation of how well the final solution addresses the identified problem/disability and an explanation of the

☑ Teams participating in this event will quickly recognize their need to explore and research disabilities and 1) the effect they have on handicapped individuals at home, 2) related mobility and transportation concerns, and 3) opportunities for success in the workplace.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

impact of the solution on the identified disability and society; pages as needed

E. Any special set-up and/or equipment required for the display or semifinalist interview is the responsibility of the participants. Power will not be provided for the interview/presentation.

F. The static display must not require the use of electricity for review and evaluation by the judges.

EVALUATION

Evaluation is based on the documentation of the team's work on the challenge, the display, and the model/prototype. Semifinalists are evaluated on their presentation, including their knowledge of the concepts related to their solution. See the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students choose an existing design problem and develop and explain their solution. Suggested leadership lessons: *Personality Types* and *Promote It*
- CRITICAL THINKING — Students analyze and evaluate a problem in order to develop an acceptable solution. Suggested leadership lessons: *And The Answer Is* and *Critical Thinking Tips*
- PROBLEM SOLVING — Students devise a plan that will yield an acceptable solution. Suggested leadership lessons: *Debate It* and *Effective Brainstorming*

Additional leadership skills promoted in this event: creative thinking, decision making, ethics, evaluation, organization, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Civil engineer
Environmental scientist
Health and safety specialist
Manufacturing consultant
Prosthestic professional

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

ENGINEERING DESIGN
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for displays, two (2) or more

C. Evaluators for semifinalist presentations, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens for evaluators
   6. Semifinalist list for posting
   7. Results envelope

B. Table and chairs for semifinalist presentation

C. Stopwatch for timing semifinalist presentation

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number on each model/prototype, display, and notebook. Position entries for evaluation and viewing. Secure the entries in the designated area.

E. Meet with evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently review each entry and complete the official rating form.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Evaluators average their scores to determine the twelve (12) semifinalists.

I. Prepare a list of the twelve (12) semifinalists in random order and submit it to the CRC chairperson for posting.

J. Inspect the area in which the presentations are to take place. There must be seating for at least five (5) people at a table.

K. Meet with your semifinalist evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

L. Conduct semifinalist presentations. Evaluators should be sure to ask questions.

M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. Manage security and the removal of materials from the area.

Participant/Team ID# _____

ENGINEERING DESIGN

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Documentation (160 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1, X2 or X3 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points; an "adequate" score of 7 for an X3 criterion = 21 points.)				
Notebook components See Regulation D (X1)	The notebook is unorganized and missing many of the required sections and necessary materials.	The notebook is somewhat organized and missing only a few required sections and materials.	The notebook is completely organized and has all of the designated sections and materials included.	
Mentor/associate verifications (X1)	Verifications do not provide the specified information.	Verifications are included, but some information is missing.	Verifications are included and complete.	
Design brief (X2)	The proper design brief format is not used, and key elements of the process are missing.	The design brief format is followed, but some areas are weak or missing.	The design brief format is followed and all elements of the process are stated completely and effectively.	
Problem solving steps (X1)	There is little attempt to describe and document the problem-solving steps.	The problem-solving steps are listed, with only some or few descriptions of the process.	Problem-solving steps are listed, with complete and effective descriptions for each.	
Plan of Work log (X1)	The Plan of Work log is missing key elements.	The Plan of Work log includes a few key elements.	The Plan of Work log effectively documents all key elements.	
Research (X1)	There is little evidence of documentation of the necessary research.	There is some evidence of documentation of the necessary research.	There is exemplary evidence of documentation of the necessary research.	
Brainstorming (X1)	There is little documentation of brainstorming.	There are somewhat weak examples of brainstorming efforts.	There are detailed and effective examples of brainstorming activities.	
Possible solutions (X1)	Only one possible solution is presented, with a weak description.	Two possible solutions are presented, but with weak descriptions.	Three or more possible solutions are presented, with detailed and effective descriptions.	
Final solution (X1)	Only a very brief explanation of the final solution is presented, and it does not include an explanation of the steps of operation.	A clear explanation of the final solution is presented, but it does not include an adequate explanation of the steps of operation.	A clear and concise explanation of the solution is offered, and it includes an explanation of the necessary steps of operation.	
Technical drawing (X1)	Drawings are not presented in the proper technical format.	Drawings are included, but they are of poor quality and missing key elements and notations.	Drawings are presented in the proper format, and they effectively represent the final solution.	
Math and science concepts (X1)	There is little evidence of the use of math and science concepts and/or applications.	Some math and science concepts and applications are included, but they are poorly described.	There are clear and concise descriptions of the math and science concepts and applications that were used.	

ENGINEERING DESIGN (continued)				
Documentation (160 points) (continued)				
Technology areas See Regulation D12 (X1)	There is little explanation of the areas of technology that are applied to the solution.	An explanation of at least two areas of technology that were part of the solution is included, but it is poorly described.	There is a complete and detailed explanation of three or more areas of technology that were used and applied.	
References/resources (X1)	There is little evidence of documentation of references and resources in the format required.	Several resources and references are documented in the format required.	Many notable examples of resources and references are documented; the required format is used.	
Evaluation/impact (X2)	There is little attempt to evaluate the final design and its impact.	There is a some attempt to document the final design and its impact.	There is a clear and effective evaluation of the final design and its impact.	
			SUBTOTAL (160 points)	
Display (40 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Presentation of design (X2)	The design presentation is weak and ineffective.	The design presentation is somewhat effective.	The design presentation is clear, concise and effective.	
Appearance and impact (X2)	The appearance of the display is poor and has very little or no visual impact.	The display is somewhat neat in appearance, but it lacks strong visual impact.	The display is exemplary in appearance and provides a strong, effective visual impact.	
			SUBTOTAL (40 points)	
Model/prototype (80 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Marketability and usefulness (X2)	There is little evidence of the design's marketability and usefulness.	There is some evidence of the marketability and/or usefulness of the design, but neither is clearly evident.	There is strong evidence of both the marketability and the usefulness of the design.	
Effectiveness of design (X3)	There is little evidence of an effective design.	There is some evidence of an effective design.	There is clear evidence of an effective and exemplary design.	
Creativity and innovation (X2)	The design lacks creativity and innovation.	There is some evidence of a creative and innovative design.	The design clearly reflects exemplary creativity and innovation.	
Appearance and quality (X1)	The appearance and quality of construction of the device are poor.	The appearance of the device is adequate, but the quality of construction is lacking.	The device exemplifies excellence in appearance and quality of design.	
			SUBTOTAL (80 points)	

ENGINEERING DESIGN (continued)				
Semifinalist Presentation (80 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X2)	Participants seem unorganized and unprepared for the presentation and interview.	Participants are generally prepared for the interview, and they are somewhat organized in their presentation.	The presentation and interview with the evaluators are logical, well organized, and easy to follow.	
Clarity (X1)	The presentation and interview provide an unclear, unorganized and/or illogical description of the project.	The presentation and interview offer a somewhat logical and easy-to-understand project description.	The presentation and interview provide a clear, concise, and easy-to-follow description of the project.	
Articulation (X1)	Participants are verbose, illogical in presenting, and use many "uhs, ums, hmms," etc.	Participants are logical and fairly well spoken, with little use of "uhs, ums, hmms," etc.	Participants are well-spoken, distinct, and clear throughout the presentation.	
Team participation (X1)	Only one person on the team communicates and responds to questions.	Most members of the team participate, but only one seems to fully understand the event.	All team members participate with mutual understanding of the event and respond effectively to questions.	
Knowledge Design process Math and science concepts Technology areas Evaluation and impact (X3)	Participants seem to have little understanding of the concepts of their project; their responses to interview questions are vague.	Participants have a generalized understanding of the concepts discussed, and they answer questions fairly clearly.	Participants show clear evidence of a thorough understanding of the project and appear to be sensitive to the challenges of a disability.	
			SUBTOTAL (80 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (360 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

ESSAYS ON TECHNOLOGY

OVERVIEW

Participants conduct research in a published technological area and, using the knowledge and personal insights gained from this research, write an essay on one (1) subtopic selected from two (2) or three (3) related subtopics designated on site. Consider your audience to be the readers of your local daily newspaper.

The topic for the 2013 conference is **The Positive and Negative Effects of Technology on Today's Youth,** with these subtopics:

- Education
- Social development
- Ethics

The topic for the 2014 conference is **The Greatest Invention(s) of the Modern Technological World,** with these subtopics:

- Communications
- Manufacturing
- Transportation

☑ The ability to communicate complex ideas to one's peers is an important skill in all facets of life, especially as technology's role increases.

PURPOSE

Participants have the opportunity to thoroughly research the published topic and use the knowledge and personal insights gained from this research to write an essay on site that effectively addresses one of the selected subtopics.

ELIGIBILITY

Participants are limited to three (3) individuals per state.

TIME LIMITS

The allotted time to complete the report is one (1) hour.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. In preparation for the event, participants research the topic and related subtopics, preparing a separate outline for each subtopic. Participants are permitted to bring these outlines to the competition. The outlines must be handwritten on 3" x 5" note cards, one (1) for each subtopic. A subtopic outline will be handwritten on one (1) side of the note card and the corresponding supporting details, sources and references will be handwritten on the other side of the note card. Participants are not permitted to enter the competition area with computer-generated notes or notes that are not handwritten.

B. Participants report to the event area at the time and place stated in the conference program.

C. Each participant will be provided with lined paper. **Participants are responsible for bringing a blue or black ink pen to the event site. The pen may be "erasable." The participant may also bring correcting fluid or correction tape to the site**.

D. One (1) of the subtopics is randomly drawn. This becomes the subtopic for all the entries.

E. Timing begins after the subtopic is announced.

F. After one (1) hour the participants stop writing. Each participant turns in an essay not exceeding five (5) pages, a one (1)-page reference list, and the relevant note card.

G. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.

H. Ten (10) finalists are announced at the awards ceremony.

☑ This event encourages in-depth research into the subtopics, of which only one (1) is selected on site. Thorough preparation is the key to success.

REGULATIONS

A. Each participant is allowed to bring one (1) 3" x 5" notecard for each subtopic, a dictionary, and a thesaurus to the event. All research information on the notecards must be handwritten and in outline form. The dictionary and thesaurus must be in print format, not electronic format.

B. Only participants are allowed in the event area. Should a participant finish before the allotted time expires, the participant is allowed to leave quietly but may not reenter the event room.

C. Participants are responsible for bringing a blue or black ink pen to the event site. The pen may be "erasable." The participant may also bring correcting fluid or correction tape to the site.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

D. Each essay must have the participant entry number only placed in the upper right-hand corner of the first page, just above the title of the report.

E. The length of the essay is limited to five (5) handwritten pages, one side of the paper only, and double-spaced. The list of references is not included in the five (5) pages.

F. With the essay, participants must turn in a one (1)-page bibliography written on one (1) side of the the paper only, using proper MLA bibliography format, and the relevant note card.

G. All essays become the property of TSA, Inc. and will not be returned.

EVALUATION

Entries are evaluated according to the criteria listed on the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students communicate through written language. Suggested leadership lessons: *Fact or Fiction* and *Listening Skills*
- CRITICAL THINKING — Students conduct research to write a well-developed essay. Suggested leadership lessons: *Figure It Out* and *The Hidden Message*
- SELF-ESTEEM — Students gain confidence in understanding a topic by conducting thorough research. Suggested leadership lessons: *Define U* and *The Little Engine That Could*

Additional leadership skills promoted in this event: decision making, evaluation

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Economist
Engineer
Research technician
Scientist
Technical writer

ESSAYS ON TECHNOLOGY
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Two (2) evaluators for every twenty (20) entries for the first reading, and two (2) semifinalist evaluators for the reading of the top rated twenty (20) essays

C. Timekeeper

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens for evaluators
   6. Stopwatch
   7. Calculators, one (1) for each evaluator
   8. Results envelope

B. Tables and chairs for evaluators

C. Tables and chairs for participants

D. Securable room (preferable) during time of the event

E. Lined paper, ten (10) sheets per participant

F. Subtopics, one (1), which is chosen on site as the essay topic

G. Paper clips and staplers for securing note cards and essays

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson. An individual who is not on the entry list is permitted to participate, but the coordinator MUST confirm the individual's eligibility. If it is found that the individual is not registered for the event, the individual is disqualified. Late entries are considered on a case-by-case basis and only when the lateness is caused by circumstances beyond the participant's control.

F. Distribute ten (10) sheets of ruled notebook paper to each participant. Provide additional paper as needed.

G. Instruct participants to identify their essay with only their entry number in the upper right-hand corner of the essay. No other identifying information can be included.

H. Remind participants to double space their written work and submit only five (5) essay pages (each with their entry number in the upper right hand corner), plus a single page for references and the 3" x 5" notecard used for research.

I. Randomly select one (1) of the subtopics. This becomes the subject for all the entries.

J. Instruct participants who finish before time is called that they may submit their work and leave quietly.

K. Five (5) minutes before the hour is up, make an announcement that the participants have five (5) minutes to complete their essays. Exactly one (1) hour after beginning, call time and collect the essays, reference pages, notecards, and unused paper.

L. Supervise and assist the evaluators during the reading of the essays. Each entry must be read and evaluated independently by two (2) evaluators. Evaluators keep working until each entry has been assessed twice.

M. The two (2) scores for each entry are averaged and the top twenty (20) entries are turned in to the coordinator. These twenty (20) are then reviewed by a NEW group of two (2) evaluators.

N. The two (2) semifinalist evaluators read and assess each of the top twenty (20) entries. The average of the two (2) semifinalist evaluators determines the final ranking. Evaluators discuss and break any ties.

O. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

P. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

ESSAYS ON TECHNOLOGY

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Essay (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Thesis and title (X1)	The thesis is not a complete thought and/or is inappropriate for the essay; the title and thesis do not correlate with one another, or they lack creativity.	The thesis is evident but the idea behind it may not be clear or concise; it is lacking in creativity; essay title correlates with the thesis.	The thesis is well structured, concise, positioned appropriately, and creative; the essay title is authentic and correlates well with the thesis.	
Introduction paragraph (X1)	The introduction adequately explains the background but may lack detail; thesis does not help to express the writer's position.	The introduction creates interest; the thesis clearly states the position.	A well-developed introduction engages the reader and creates interest; it contains detailed background information; thesis clearly states a significant and compelling position.	
Supporting paragraphs (X2)	There are fewer than three main points, and/or poor development of ideas; the narrative is undeveloped and tells, rather than shows, the story.	Three or more main points are related to the thesis, but one may lack details; the narrative shows events from the author's point of view, using some details.	Well-developed main points are directly related to the thesis; supporting examples are concrete and detailed; the narrative is developed with a consistent and effective point of view that presents the story in detail.	
Concluding paragraph (X1)	The conclusion is recognizable and ties up almost all loose ends.	The conclusion effectively summarizes the topics.	The conclusion effectively wraps up and creatively restates the thesis.	
Organization (X1)	There is no discernible organization; transitions are not present.	A logical progression of ideas is evident; transitions are present throughout the essay.	A logical progression of ideas, with a clear structure that enhances the thesis, is employed; transitions are mature and graceful.	
Style (X1)	The writing is confusing and hard to follow; it contains fragments and/or run-on sentences; inappropriate diction is evident.	The writing is clear, but sentences may lack variety; diction is appropriate.	The style is smooth, skillful and coherent; sentences are strong and expressive, with varied structure; diction is consistent and words are well chosen.	
Mechanics (X1)	Distracting errors in punctuation, spelling and capitalization are present.	Punctuation, spelling and capitalization are generally correct, with few errors.	Punctuation, spelling, and capitalization are correct with no errors evident.	
Research base (X1)	The work lacks an adequate research base, and/or very few credible sources are referenced.	The research is conducted appropriately, but few credible sources are cited.	A comprehensive research base that includes credible sources is provided.	
References (X1)	References are not used effectively, and/or they do not pertain to the topic; limited quality sources are cited.	Most sources used are credible and of good quality; most references help to support the essay topic.	Multiple and varied sources and references are used, all of which are credible, appropriate and support the topic.	
			SUBTOTAL (100 points)	

ESSAYS ON TECHNOLOGY (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

EXTEMPORANEOUS SPEECH

OVERVIEW

Participants give a three-to-five (3-5) minute speech fifteen (15) minutes after having drawn a card on which a technology or TSA topic for their speech is written.

PURPOSE

Participants have the opportunity to verbally communicate knowledge of technology or TSA subjects.

ELIGIBILITY

Participants are limited to three (3) individuals per state.

TIME LIMITS

A. Each speech must be between three (3) minutes and five (5) minutes. Participants will be penalized on each evaluator's score sheet one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.

B. Time commences when the speaker begins talking and concludes at the end of the speech.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program to sign up for a time.

B. At his/her assigned time, each participant draws three (3) cards, each containing one (1) topic, from a box and selects one (1) topic from the three (3) on which to speak. The cards with the unused topics are returned to the box.

☑ Prepare for this event by being calm, cool and relaxed, with a solid knowledge of TSA and of current issues in technology.

C. Preparation

1. After having selected a topic, the first participant enters a preparation room separate from the speech delivery room and is given fifteen (15) minutes to prepare a speech.
2. Seven (7) minutes after the first participant enters the preparation room, the second participant enters the preparation room, goes to a different section, and begins his/her speech preparation, again with fifteen (15) minutes to prepare a speech.
3. Each participant, in turn, is allowed to enter the preparation room at seven (7) minute intervals, thus enabling a constant flow of participants to speak before the evaluators in a timely fashion. [This allows for one (1) minute to enter the room and announce the entry number, up to five (5) minutes for the presentation, and one (1) minute to exit the room.]

D. The event coordinator introduces each participant by registration number in the order of the sign-up time.

E. The timekeeper visually notifies the speaker of the time remaining by using six (6) separate cards. Each of the six (6) 5" x 7" notecards has a "time remaining in minutes" number on it (4, 3, 2, 1, ½, and 0) and each is shown in descending order to the participant by the timekeeper during the speech.

F. After speaking, the participant returns the topic card to the evaluators so that it can be returned to the topics box.

G. Evaluators independently rate each speech according to the criteria on the official rating form.

H. A semifinalist list in random order is posted.

I. Semifinalists report to the event area at the time and place stated in the conference program to sign up for a time.

J. Semifinalist preparation and speaking follow the same guidelines as above, using a different set of topics.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. No reference is to be made concerning the name of the participant or his/her school.

B. Each speech must be the result of the participant's own effort. No reference materials or devices may be used or brought to the preparation room.

C. Any notes for speaking must be written during the fifteen (15)-minute preparation period. Each participant will be provided a maximum of three (3) 3" x 5" blank notecards.

D. While participants are permitted to use notes when speaking, it should be noted that deductions in scoring might be made for this practice if it detracts from the effectiveness of the presentation.

E. No observers are allowed in the event or preparation rooms during heats, although they are allowed to sit in the audience of the performance during the semifinals. No talking or gesturing is permitted. Observers are NOT allowed to enter or leave during a presentation. THERE IS NO APPLAUSE UNTIL THE PRESENTATION HAS CONCLUDED.

F. Participants are penalized on each evaluator's score sheet: one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.

EVALUATION

Evaluation is based upon the quality of the presentation, the degree to which the content matches the selected topic, and adherence to the time limits. Please refer to the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students acquire poise and confidence through presentation. Suggested leadership lessons: *Promote It* and *Put It Together*
- EVALUATION — Students rehearse (for improvement purposes) presentations on potential event topics. Suggested leadership lessons: *Evaluation Methods* and *Seven Components of Effective Evaluation*
- ORGANIZATION — Students organize their thoughts to create a thoughtful, logical presentation. Suggested leadership lessons: *Impromtu* and *New Club In Town*

Additional leadership skills promoted in this event: creative thinking, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Advertising executive
Keynote speaker
Politician
Sales and marketing executive
Teacher

EXTEMPORANEOUS SPEECH
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for first round of speeches, two (2) or more

C. Evaluators for semifinalist speeches, two (2) or more

D. Timekeepers for recording speech start/stop times, one (1) per event room

E. Monitors, one (1) per event room

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pencils for evaluators
   6. Note pads
   7. Semifinalist list for posting
   8. Results envelope

B. Speaker's stand/podium

C. Stopwatches for timekeepers, one (1) per heat and two (2) per preparation room

D. Six (6) 5" x 7" notecards for "time remaining in minutes" numbers (See Procedure E)

E. Table and chairs for three (3) evaluators and the timekeeper

F. Chairs for the audience, for semifinals only

G. 3" x 5" blank notecards, for participants to use to outline their presentation

H. Pencils

I. 3" x 5" topic cards—a minimum of fifteen (15) different topics from which to select

J. Tables and chairs in the preparation room

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the Coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Manage the smooth flow of participants according to these procedures:

   1. After having selected a topic, the first participant enters a preparation room separate from the speech delivery room and is given fifteen (15) minutes to prepare a speech.
   2. Seven (7) minutes after the first participant enters the preparation room, the second participant enters the preparation room, goes to a different section, and begins his/her speech preparation, again with fifteen (15) minutes to prepare a speech.
   3. Each participant, in turn, is allowed to enter the preparation room at seven (7)-minute intervals, thus enabling a constant flow of participants to speak before the evaluators in a timely fashion. [This allows for one (1) minute to enter the room and announce the entry number, up to five (5) minutes for the presentation, and one (1) minute to exit the room.]

F. When the participants have finished, each evaluator computes the final scores, consulting the timekeeper's record. The timekeepers notify evaluators of any time under three (3) minutes or over five (5) minutes for which deductions should be made.

G. Evaluators average their scores and discuss and break any ties when all presenters have spoken.

H. If heats are used, determine 12 semifinalists and post a semifinalist list. Repeat the process in F. (above) to determine the finalists.

I. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

J. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

EXTEMPORANEOUS SPEECH

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Delivery (80 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Organization (X1)	The speech is unorganized and difficult to follow or understand.	The speech is somewhat organized, but it is often difficult to follow and understand.	The speech is organized and easy to follow; the delivery is exceptional.	
Voice and articulation (X1)	The presenter conveys an inconsistent use of proper grammar, word pronunciation, acceptable pitch and tone.	The presenter generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	Smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch are used throughout the speech.	
Impact (X3)	The speech is unconvincing, uninteresting, and lacks compelling and attention-holding details.	The speech is somewhat convincing and emphasizes several details, but it fails to hold the attention of the audience or remain interesting.	The speech is completely convincing, full of emphasis, and holds the attention and interest of the audience.	
Stage presence (X1)	The presenter's appearance is unprofessional, sloppy, and inappropriate.	The presenter's appearance is adequate, appropriate, and professional.	The presenter's appearance is appropriate, professional and polished.	
Knowledge of subject (X2)	Minimal knowledge of the subject is evidenced in the speech; the content does not relate to the theme; the participant does not convey an understanding of the theme.	Knowledge of the subject is evidenced, but the speaker fails to relate and convey a clear understanding of the theme.	Complete knowledge and understanding of the subject and relationship to the theme are conveyed through the content of the speech.	
			SUBTOTAL (80 points)	

One point per ten-second interval is to be deducted for speaking under the three minutes or over the five minutes allotted for the presentation. Presentation time commences when the presenter begins speaking		
PRESENTATION DELIVERY TIME		
TOTAL TIME DEDUCTION POINTS		

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (80 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

OVERVIEW

Students have the opportunity to research, develop, and create garment designs, garment mock-ups, and portfolios that reflect the current year's published theme. Twelve (12) qualifying semifinalist teams participate in an on-site event in which they present their potential garment designs to the judges on a TSA runway.

The theme challenge for 2013 is to design two (2) outfits associated with protective clothing for a first responder that can be worn daily. Participants are responsible for creating three (3) items total that can be worn with either of the outfits.

The theme challenge for 2014 is to design two (2) outfits for a NEW children's fairy tale storybook character. Participants are responsible for creating three (3) items total that can be worn with either of the outfits.

PURPOSE

Humans need protection from weather, environmental factors, occupational hazards, and other adversaries. Clothing is designed and worn for utilitarian purposes, decoration, identification, status, and modesty. TSA members will demonstrate an understanding of and expertise in using design and technology processes to convey a fashion concept.

ELIGIBILITY

Entries are limited to one (1) team of two to four (2-4) members per chapter.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Semifinalists will be allowed ten (minutes) for a presentation. A deduction of five (5) points will be incurred for exceeding the presentation time limit.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement for the finals.

PROCEDURE

A. Participants check in their entry at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. The semifinalists report to the event area at the time and place stated in the conference program.

D. Each semifinalist team must have access to student TSA member models and the team-created garments to compete in the semifinals.

E. The event coordinator will allow students to sign up for times to present their designs in a closed interview and runway fashion show for the judges only.

F. Semifinalists use the assigned time to present their designs. An interview is conducted with one spokesperson answering questions from the judges and acting as the emcee, describing and presenting the designs while the models walk the runway wearing the designed garments.

G. Any type of garment design that is typical of responsible clothing design and creation is considered appropriate.

H. During the semifinals, participants will be allowed ten (10) minutes to complete the runway presentation [two (2) minutes for set-up, six (6) minutes for the presentation, and two (2) minutes for removal]. Points will be deducted from a team's score for exceeding the ten (10)-minute time frame allowed for the presentation.

I. Final evaluation from judges takes place immediately following the completion of the interview and runway presentation.

REGULATIONS

A. All work must be completed during the current school year. Participants will use a 32-quart plastic storage box to submit their portfolio, patterns, and any accessories. Garments should be put on hangers and placed in protective plastic bags, garment bags, or on dressmaker dummies.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

B. Portfolio

1. A portfolio of twenty (20) pages is required and must be submitted with the garments. A standard three (3)-ring binder, with a clear front sleeve for a cover page should be used. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:
   a. Title page with the event title, the conference city and state, and the year; one (1) page
   b. Table of contents; one (1) page
   c. Literature research summary; two (2) pages
   d. Interpretation of theme; two (2) pages
   e. Explanation of the garment types, textiles used, notions needed, sewing techniques used, etc.; two (2) pages
   f. Design process sketches (hand-drawn); five (5) pages
   g. Computer-drawn final designs print-outs; five (5) pages
   h. References /resources; two (2) pages
   i. Submit a DVD with four (4) photos of a model wearing the entry (views: back, front, left side, right side). The photos may become part of a TSA general session, and they will be posted in the TSA video library. An electronic copy of the photo consent form is required on the DVD. The DVD will not be returned and earns zero (0) points.

C. Patterns/mock-ups

Full-sized student-made pattern(s) and paper/cloth mock-ups [three to four (3-4) patterns and mock-ups on appropriate lightweight paper or inexpensive cloth]

D. Garments

1. Garments for initial judging must be put on hangers, or on dressmaker dummies; the portfolio should accompany the garments.
2. The garments must be presentation quality.
3. All designs and garments should be appropriate for viewing at the national TSA conference.
4. Any portfolio or garment that depicts inappropriate or unacceptable designs will be disqualified.
5. All patterns, mock-ups and garments must be designed, sketched, computer-drawn, developed and sewn by students.

E. Participants must provide their own sound system/CD player, power strip and extension cord for the runway presentation.

F. The semifinalist portion of the event evaluates the quality of the team's presentation, as well as the team's knowledge and

expertise pertaining to the entry in the following areas: overall garment design and originality, theme interpretation, sewing techniques, and fabrics used.

EVALUATION

Evaluation is based on points earned for the portfolio, patterns and garments, and a presentation. Scores on the portfolios, pattern and garments will determine the twelve (12) semifinalists. Points earned from the interview on-site runway semifinalist presentation will be added to the portfolio score to determine the final ranking of the top ten (10) finalists.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students display a visual understanding of a fashion idea. Suggested leadership lessons: *Personality Types* and *Promote It*
- CREATIVE THINKING — Students create designs that appeal to a broad audience. Suggested leadership lessons: *Color Hunt* and *HAT To Be Creative*
- TEAMWORK — Students divide responsibilities among team members. Suggested leadership lessons: *Teams* and *Restaurant Business Plan*

Additional leadership skills promoted in this event: decision making, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Fashion designer
Fashion layout editor
Fashion magazine editor
Model
Tailor

PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through video/film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

_____

Name of minor in images (please print)

_____

Name of minor's parent/guardian (please print)

_____

Name of adult in images (please print)

_____

Parent/guardian or adult's signature (as applicable)

_____

Date

FASHION DESIGN
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for the twelve (12) semifinalist team presentations, two (2) or more

C. Timekeeper

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens or pencils for each evaluator
   6. Semifinalist list for posting
   7. One (1) stopwatch
   8. Results envelope

B. Tables and chairs for three (3) evaluators

C. Chairs for audience

D. One (1) table, approximately six feet (6') long, for judges

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, screens, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the

entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Allow the first participant to the event room and provide two (2) minutes for set-up of materials. The event coordinator or assistant introduces the participants by entry number only. No nametags or clothing that give any indication of the hometown, school, or chapter are allowed. Each team will be allowed six (6) minutes for the presentation.

F. Each team is allowed two (2) minutes to remove all materials.

G. Following the last participant's presentation, the evaluators total their scores, making adjustments for time penalties.

H. Secure the evaluators' signatures on their score sheets.

I. Evaluators independently assess the semifinalist participants in the runway portion of the event and average their scores to determine the ranking of the top ten (10) finalists. Evaluators discuss and break any ties.

J. Complete and submit the finalist report, which includes a ranking of the top ten (10) finalist teams, and all related forms in the results envelope to the CRC room.

K. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

FASHION DESIGN

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Portfolio (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Portfolio components See Regulation B (X1)	Some parts of the portfolio are missing; the portfolio is unorganized, messy and lacks quality.	Most components are the portfolio are present but they are loosely organized and lacking in quality.	All components of the portfolio are included; strong effort and quality of work are evident.	
Summary of research (X1)	The summary is too brief and lacks the appropriate details expected for the event.	The summary of the research is sufficient but lacks some of the key details that would be expected.	The summary is organized, clear and concise, with appropriate and necessary details included.	
Interpretation of theme (X1)	The interpretation of the theme is very weak and unconvincing.	The interpretation of the theme is clear but lacks appropriate justification.	The interpretation of the theme is clear, concise and thorough, with convincing justification.	
Explanation of garment types (X1)	Explanation is or unclear, poorly organized and does not accurately describe the garment types.	Explanation is loosely organized but does attempt to describe the garment types and their production.	Explanation is clear and concise and demonstrates extensive knowledge of garment types and production.	
Design process sketches (X1)	Sketches are poorly executed and lack necessary details in the design process.	Sketches are complete as drawn but lack several important notations and references to the design process.	Sketches are well executed, organized, and clearly represent the design process.	
Computer drawings for final design (X1)	Computer drawings fail to accurately portray the final design; there are major omissions of important details.	Computer drawings somewhat accurately illustrate the final design, but several important details are missing.	Computer drawings of the final design are clear, accurate, and effectively portray the final product.	
Resources/references (X1)	Research is inadequate, with very few credible resources and references provided.	Research appears adequate but the resources and references are poorly documented.	Research is comprehensive, and all resources and references are properly documented.	
			SUBTOTAL (70 points)	

Patterns/Mock Ups (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Two or more hand-made garment patterns (X1)	Patterns are poorly constructed or missing key components.	Patterns are well constructed; some key attributes are not included that could impact the final product.	Patterns are designed to detailed standards and are of a production quality.	
Creativity, originality, and difficulty (X1)	Patterns/mocks-ups clearly lack creativity, originality or difficulty in execution.	Patterns/mock-ups are of good quality, but they are lacking in difficulty and originality.	Patterns/mock-ups are of industry standard; they clearly demonstrate originality, creativity and skill.	

FASHION DESIGN (continued)				
Patterns/Mock Ups (30 points) (continued)				
Interpretation of theme (X1)	Pattern fails to adequately and appropriately demonstrate the theme.	Pattern reveals a somewhat successful attempt to demonstrate the theme.	The pattern clearly and appropriately demonstrates the theme.	
			SUBTOTAL (30 points)	
Quality of Garments (40 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Proper sewing techniques used/evident (X1)	Garment construction fails to meet accepted standards and techniques of construction in relation to the fabric selected.	Garment construction meets acceptable standards and construction techniques.	Garments show that a variety of appropriate techniques were used in the construction.	
Quality fabric and lining (X1)	The quality of the fabric and lining are not appropriate for the garments and style representing the interpretation of the theme.	The quality of the fabric and lining are acceptable but uninspiring in presenting the interpretation of the theme.	The quality of the fabric and lining exemplify the interpretation of the theme and the quality of the final garments.	
Use of notions (buttons, zippers, snaps, embroidery, embellishments, etc.) (X1)	Little or no use of notions is evident in the garments.	A variety of notions is appropriately used in the garments.	An excellent choice and variety of notions are used that enhance the overall appearance and quality of the garments.	
Pressed, ironed, hanging on hangers in a dressmaker bag, or on a dressmaker dummy (X1)	Garments are not pressed or arranged in an appropriate manner.	Garments are pressed and arranged appropriately, but not in a dressmaker bag or on a dressmaker dummy.	Garments are pressed and arranged for display in a garment bag or on a dressmaker dummy in a professional manner.	
			SUBTOTAL (40 points)	
			STATIC DISPLAY TOTAL (140 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

Semifinalist On-site Presentation (60 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	Participants seem unorganized and unprepared for the presentation and interview.	Participants are generally prepared for the interview but are somewhat disorganized in their overall presentation.	The presentation and interview with the evaluators are logical, well organized, and easy to follow.	
Clarity (X1)	The presentation and interview are full of illogical thoughts that lack clarity.	The presentation and interview are somewhat logical and easy-to-understand and follow.	The presentation and interview provide a clear, concise, and easy-to-follow description of the project.	
Articulation (X1)	Participants are verbose, illogical in presenting, and use many “uhs, ums, hmms, etc.”	Participants are logical and fairly well spoken, with little use of “uhs, ums, hmms, etc.”	Participants are well-spoken, distinct, and clear throughout the presentation.	

FASHION DESIGN (continued)				
Semifinalist On-site Presentation (60 points) (continued)				
Quality of garments on models (X1)	The garments do not appear to fit and/or are appropriate for the person modeling (color, style, textures, etc).	The garments fit neatly but may not be the best color, style, texture, etc. for the person modeling.	Garments are clearly made and designed for the model--fitting nicely, with appropriate style, colors, textures, etc.	
Knowledge and expertise See Regulation F (X2)	Participants seem to have little understanding of the concepts in their project; interview answers are vague.	Participants exhibit an understanding of the concepts in their project; interview answers are weak.	Participants responses show clear evidence of a thorough understanding of the project.	
			SUBTOTAL (60 points)	

Time violation (a deduction of five points total will be incurred for exceeding the semifinalist presentation time limit). Record the deduction in the space to the right.	
Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (200 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

FLIGHT ENDURANCE

OVERVIEW

Participants analyze flight principles with a rubber band powered model aircraft.

PURPOSE

Participants have the opportunity to build, fly, and adjust (trim) a model to make long endurance flights inside a contained airspace. Any model design is acceptable if the model complies with the event specifications. All models are to be built and test flown before the event date.

☑ Each year it's amazing when students demonstrate their mastery of this event by flying planes in graceful arcs around an indoor space. Flights don't always go that way, but when they do, they're beautiful.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one (1) entry per individual.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Participants are provided a minimum of thirty (30) minutes for trim flights at the event site.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event coordinator at the time and place stated in the conference program to sign up for flight heats.

B. Participants proceed to the flying site for trim flying during the time designated for their heat. Time allotted for the trim portion may be extended according to the number of participants and site scheduling.

C. Participants have two (2) opportunities to fly their models for official times.

D. Participants attend a pilot's meeting to review the sequence for making the official flights.

E. In an orderly fashion, participants wind their models and proceed to a group timer for permission to fly.

F. Participants place their models on the floor and wait for the signal to release from the timer. Timing begins when the model rises off the ground.

G. Flight time ends when models hit the floor/ground or when they come to rest on an obstruction.

H. No repairs are allowed after time trials begin.

I. Each participant has the times of two (2) official flights recorded by the timer.

J. Immediately following the second flight, the participant will hand his/her motor to the judge for weighing.

K. Notebooks and planes will be placed on flight boxes for judging. Judges will begin with the top flight times and will evaluate planes, notebooks and flight boxes until the top ten finalists have been determined. Planes that violate any part of Regulation C will be disqualified.

L. Ties are broken by determining the longest single flight time.

REGULATIONS

A. All documentation must be computer-generated on 8½" x 11" paper and contained in a notebook [a standard three (3)-ring binder]. Each notebook must include a flight log (see official sample that follows), with the previous ten (10) flights signed off by the participant's advisor, and a written report organized to explain these specific points:

   1. The technical attributes of the design and a description and identification of parts
   2. The modifications and an explanation of why each was developed
   3. A technical review of the flight log that explains the trim adjustments and modifications required to improve endurance. Experts from the Academy of Model Aeronautics (AMA) and the National Free Flight Society (NFFS) may scrutinize this information for validity.

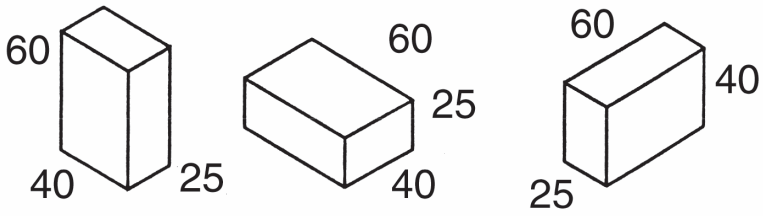
☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

Flight Log

Participant ID#:			Dates:		
Flight #	# of winds	Time aloft	Flight pattern	Trim adjustment	Advisor sign off
#1					
#2					
#3					
#4					
#5					
#6					
#7					
#8					
#9					
#10					

B. The aircraft and its parts *must* be contained in a flight box that does not exceed 25cm x 40cm x 60cm. Hardware, such as hinges, handles, and wheels, are not to be measured.

☑ The flight box is required and is intended to protect the plane in transit.



C. Materials include the following:

1. Models are to be made of wood, tissue paper, condenser paper and plastic film (Mylar) for fuselage and flying surfaces (wings, fin, and stabilizer). No plastic foams are allowed.
2. Models use a commercially available plastic propeller or propeller assembly: minimum of 140mm to a maximum of 170mm in diameter. Trimming or thinning propellers is allowed to achieve balance and/or to reduce weight.
3. Fuselage dimension: minimum of 300mm in length measured with prop assembly attached.
4. Wingspan: maximum of 50cm horizontally projected, wing chord 12cm projected.
5. Rubber motor: maximum weight of motor is 1.50 grams, including the O-rings. No length measurement is made.

Spare motors are allowed during the official flights. Two (2) rubber O-rings may be used on the rubber motor loop for easier handling of wound motors.

6. Model weight: minimum of 7.0 grams, maximum of 21.0 grams. Models are weighed without motors attached. Clay is permitted for trim ballast. Model is weighed with clay ballast.
7. Steel wire may be used only for the propeller shaft, motor hook, landing gear and the connection between fuselage and tail. Small plastic tubes such as coffee stirrers may be used.
8. The two wheels must be a minimum of 15mm in diameter, made of plastic or wood, and they must roll freely by the weight of the plane on a smooth surface.

D. Acceptable flight support equipment includes the following:

1. Mechanical rubber motor winders or battery powered motor winders may be used. No AC powered winders are allowed.
2. A winding stooge may be used to anchor the model while its motor is being wound. A person may not serve as a winding stooge.
3. Flight Endurance is an individual event. No one may assist the participant in any way during either trim or official flights. Violation of this regulation may result in disqualification.

E. The landing gear must support the airplane without sagging in its rested position.

EVALUATION

Evaluation is based on the duration of flight, written report, flight log and flight box. A bonus of ten (10) seconds is added to the flight time per flight if the airplane successfully lands on its wheels and comes to a rest on its wheels.

NOTES

Two organizations—the Academy of Model Aeronautics (AMA) and the National Free Flight Society (NFFS)—welcome your inquiries and offer suggestions, help and technical information concerning model aircraft and flight technology. Contact the AMA: www.modelaircraft.org. Contact NFFS: www.freeflight.org.

The National Free Flight Society (NFFS) is another organization that offers help to individuals who seek information concerning model building and flight technology. Learn more on the web at www.freeflight.org.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CREATIVE THINKING — Students develop unique ideas for their entry to increase their competitive edge. Suggested leadership lessons: *Creative Technologies* and *The Leadership Chronicles*
- EVALUATION — Students improve their entry though testing and time trials. Suggested leadership lessons: *Evaluation Imagination* and *Evaluation Methods*
- PROBLEM SOLVING — Students make adjustments to their entry to fix any problems. Suggested leadership lessons: *Finding the Right Way* and *Problem Solving Steps*

Additional leadership skills promoted in this event: communication, critical thinking, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Aeronautical engineer
Aircraft systems engineer
Physics teacher

FLIGHT ENDURANCE
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants, two (2) or more

C. Evaluators, two (2) or more

D. Timekeepers, two (2)

MATERIALS

Coordinator's notebook, containing:

A. Event guidelines, one (1) copy for the coordinator and for each evaluator

B. Official rating forms

C. List of entries with finalist report

D. List of evaluators/assistants

E. Flight score sheets

F. Marking pens (felt tip, fine point)

G. Tape, rubber bands, glue and adhesives

H. Stop watches, three (3)

I. Electronic gram scale (to .01 gram)

J. 610mm metric rulers, two (2)

K. Results envelope

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total points earned or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Check in participants and evaluate models for special compliance during the scheduled trim session (completed flight log is inspected).

F. Secure models in the holding area so that models remain safe until the scheduled time for the official flights.

G. Distribute a list of entrants assigned to each designated evaluator/timer.

H. Each flight is recorded to the nearest one-tenth (.1) of a second. After the second flight, the times are added together. Up to three (3) groups may fly simultaneously in the assigned area for the event with, consideration for the safety of the models and participants.

I. Models and flight boxes of all contestants are checked again. Models showing deviations may be disqualified.

J. Secure the signatures of the evaluators on the official rating form after they have reviewed it.

K. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

L. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

FLIGHT ENDURANCE

2013 & 2014 OFFICIAL RATING FORM **HIGH SCHOOL**

Documentation (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation A (X1)	Notebook is unorganized and/ or is missing three or more components.	Notebook is missing one component, and/or is loosely organized.	No components are missing in the notebook, and content and organization are clearly evident.	
Technical attributes (X1)	Attributes of the design are very sketchy in nature.	Attributes of the design are included, but obvious omissions are present.	Clear and precise attributes of the design are given; an in-depth knowledge of flight design is exhibited.	
Description and identification of parts (X1)	Two or more parts are not described or identified.	All but one part is properly described and identified.	All parts are completely and accurately described and identified.	
Modifications and technical review of flight log (X1)	No modifications are noted, and/ or an explanation of why the modification was made is missing.	Some modifications are given, but the reasons for the adjustments and modifications are not clearly explained.	Modifications and an explanation of why they were made are provided; a clear and precise explanation for how they improved the flight endurance is provided.	
Flight log (X1)	The flight log is incomplete; the advisor signature is not included.	Flight logs are generally complete; the advisor's signature may be missing.	Flight logs are complete, with advisor's signature; a thorough understanding of the flight log's purpose is evident.	
Flight box (X1)	The flight box exceeds dimensions by more than 1%.	The flight box exceeds dimensions by less than 1%.	The flight box adheres to the maximum size restrictions.	
			SUBTOTAL (60 points)	

FLIGHT ENDURANCE (continued)		
Flight Times **Flight times recorded to the nearest tenth (.1) of a second.**		
Duration of flight #1	**Seconds**	
Duration of flight #2	**Seconds**	
Landing bonus – add 10 seconds for each successful landing	**Seconds**	
Total flight scores (combine flight #1, flight #2, and bonus for landing/s)	**Seconds**	
	SUBTOTAL FLIGHT SCORE	

Rules violations (a deduction of 20% of the total earned points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

FUTURE TECHNOLOGY TEACHER

OVERVIEW

Participants research and select three (3) accredited colleges or universities that offer technology education/engineering technology teacher preparation as a major. Each participant will write no more than one (1) page (simulated college essay) explaining why s/he would like to become a technology education/engineering technology teacher and what would constitute success in the field. In addition, each participant will develop and present a one (1)-class period activity, with a lesson plan, using the ITEEA standards for technological literacy.

PURPOSE

The need for technological literacy in students is increasing. At the same time, there is a shortage of qualified technology education teachers. A significant number of technology teachers will be needed in the future. This event will encourage the participant to test his/her potential as a future technology educator.

ELIGIBILITY

Entries are limited to three (3) individuals per chapter.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Participants submit a notebook containing three college research summaries, a college essay, a lesson plan with technology standards correlation, relevant handouts, and materials and resources.

C. The presentation must be no more than ten (10) minutes in length.

D. A maximum of four (4) minutes will be allowed for set-up.

E. At the conclusion of the presentation, the participant must remove all materials within three (3) minutes.

F. One (1) point will be deducted for each ten (10)-second interval over the allotted time for the presentation, set up and/or clean-up.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. In preparation for this event, participants thoroughly research and select three (3) accredited colleges or universities that offer technology teacher education or engineering technology teacher preparation programs. Participants should take into consideration geographic location and environment, academic requirements, cost, campus life, setting, and the size and housing facilities of each school. Advice from parents, family members, guidance counselors and engineering and technology education teacher/s is recommended, as is the use of this website: http://www.iteaconnect.org/Resources/institutionalmembers.htm. Using no more than three (3) pages, one (1) side only, participants should summarize the information derived from the research about each of the colleges or universities and their respective programs.

B. Each participant should complete an essay, one (1) page (single-sided), explaining why s/he is a good candidate to become a technology education or engineering technology teacher. Personality traits, goals and interests should be included in the essay. The essay should be typed and free of spelling and grammatical errors.

C. Each participant will provide one (1) letter of recommendation from a counselor, school official, or other individual (not a relative) on official letterhead. Any identifying information (school or participant) should be concealed.

D. A lesson plan describing the rationale, goals and objectives, standards correlation, and a description of an activity, including assessment must be submitted. The lesson plan should be clearly labeled with the grade level for which the lesson plan/activity is appropriate.

E. Copies of the lesson plan, all handouts, and a list of resources and references used for the entry and in the presentation should be included in the entry.

F. Participants report to the event area at the time and place stated in the conference program. Each participant will turn in his/her notebook to the coordinator to be judged.

G. Entries will be reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

H. Each semifinalist will sign up for a scheduled time to present his/her lesson plan/activity.

I. The event coordinator will introduce each participant by number and in order of scheduled times. Each time slot includes four (4) minutes for set up and three (3) minutes to pack up materials and audio visual equipment (if used).

J. Participants are encouraged to interact with the judges, who will serve as students in the classroom.

K. Notebooks should be picked up at the time and location listed in the conference program.

REGULATIONS

A. Each notebook, essay and lesson plan/activity must be the result of the participant's own efforts and not a purchased or open source lesson. General content from either may be used, but it must be cited.

B. All parts of the entry are contained in the notebook. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, the year and the participant's ID number (identification numbers are issued on site and therefore may be handwritten); one (1) page
2. Table of contents; pages as needed
3. College research summaries; one (1) page maximum for each college
4. College essay; one (1) page
5. Letter of recommendation, with identifying information (school or participant); concealed one (1) page
6. Lesson plan/activity; three (3) sets for the judges and coordinator
7. Copies of handouts; three (3) sets for the judges and coordinator
8. References and resources; pages as needed

C. Activities should be designed for one (1) forty-five (45)-minute class period. The introduction, skill demonstration and directions should promote student success in the activity.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

D. Topics for the activity should correlate to the standards for technological literacy. [Use the International Technology and Engineering Educators Association (ITEEA; formerly ITEA) website at www.iteea.org for more information about the technology standards.] Topics should reflect science, technology, engineering, and mathematics (STEM) initiatives and integration. Activities that explore knowledge, creativity and skills in the following areas are suggested:

1. Medical technology
2. Agricultural and biotechnology
3. Power and energy technology
4. Information and communication technology
5. Transportation technology
6. Manufacturing technology
7. Construction technology

E. Hazardous materials, chemicals, wet cell batteries, lighted flames, combustibles and other substances are not allowed at the conference and cannot be part of the presentation.

F. Copies of the lesson plan and of all handouts, materials and resources should be prepared and distributed to the judges, who will act as students in the classroom.

G. Audio visual materials such as charts, graphs, posters, displays, flip charts, transparencies and models may be included. Any audio visual equipment required for the presentation must be provided by the participant; this includes a power strip and extension cord, if needed.

H. Participants are not allowed to watch or hear the presentations of other participants.

I. One (1) point will be deducted for each ten (10)-second interval over the allotted time for the presentation, set up and/or clean-up.

J. No school or individual names may be labeled on the entry; only identification numbers will be used.

EVALUATION

Evaluation is based on the notebook, the developed lesson plan/activity and the presentation of the activity. The appropriateness of the activity for the designated grade level, the poise of the participant during the presentation, the interaction of the participant with the students (judges will act as students), and the enthusiasm and motivation of the participant will be used in the final evaluation.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students convey aspects of a lesson effectively. Suggested leadership lessons: *Listening Skills* and *Put It Together*
- CREATIVE THINKING — Students use creativity to present a compelling lesson. Suggested leadership lessons: C*reative Techniques* and *Invention Mishap*
- DECISION MAKING — Students will make informed college selections, based on thorough research. Suggested leadership lessons: *History In The Making* and *Informed Decisions*

Additional leadership skills promoted in this event: ethics, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Technology (and related areas) teacher

FUTURE TECHNOLOGY TEACHER EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Assistants, two (2)

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms, thirty (30) copies
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens for evaluators
   6. Semifinalist list for posting
   7. Stopwatch
   8. Tables and chairs for participants and evaluators
   9. Copy of ITEEA/ITEA publication *Standards for Technological Literacy*
   10. Storage box to carry entries for judging
   11. Results envelope

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet your evaluators/assistants to review time limits, procedures, regulations and all other details related to the event. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Participants check in notebooks. The entry number should be written on a sticker in the top right corner of the notebook's cover. Evaluators read and individually evaluate entries.

E. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

F. Prepare a list of twelve (12) semifinalists and submit it to the CRC to be posted.

G. Set a time for semifinalists to sign up for an interview.

H. Make sure the presentation room is set up correctly.

I. Distribute the evaluators' materials.

J. Evaluators calculate their scores. Any tie that affects the top three (3) places should be broken by using the highest average score for evaluative criteria.

K. Evaluators submit their signed score sheets to the coordinator.

L. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

M. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

FUTURE TECHNOLOGY TEACHER

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Documentation (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation B (X1)	The notebook is unorganized and/or is missing major components.	The notebook is missing several components, and/or it is loosely organized.	The notebook is completely organized and contains all components.	
College search summaries (X1)	Only one (1) college technology education program is identified, with a summary included.	Two or more programs are included, but the summaries are inadequate.	Three programs are documented, with adequate summaries included.	
College essay (X1)	The essay is too short, not typed, poorly written, and full of spelling and grammatical errors.	The essay is generally well written, typed and of correct length, but it contains several spelling and grammatical errors.	The essay is well written, typed, the correct length and contains no spelling or grammatical errors.	
Lesson plan components See Procedure D (X1)	The lesson plan is missing several of the stated components, including the standards correlation.	The lesson plan includes all of the stated components, but it is poorly worded and not in proper order.	The lesson plan includes all of the stated components; it is well organized.	
Handouts (X1)	Handouts are poorly developed and do not have an impact on the lesson and activity.	Handouts are relatively well developed and and have a slight impact on the lesson and activity.	The handouts are effective and appropriate for the lesson and activity.	
References and resources (X1)	A minor attempt was made to document resources and references.	Several resources and references are documented.	There is clear evidence of an appropriate use of applicable resources and references.	
			SUBTOTAL (60 points)	

Presentation (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	The presentation lacks organization, and it is difficult to follow or understand.	The presentation is somewhat organized.	The presentation is organized and easy to follow; it flows smoothly to the conclusion.	
Introduction (X1)	The introduction is weak, with little effort made to emphasize the topic and/or to generate interest and enthusiasm for the topic.	Sufficient effort is evident in the introduction, but it lacks emphasis and fails to create a level of interest.	The introduction is effective, stimulating and inspires observers to "want more."	
Stage presence (X1)	The presenter's appearance is unprofessional and lacking in confidence, enthusiasm and personality.	The presenter's appearance is professional and enthusiastic, but lacking in confidence.	The presenter's appearance is professional, enthusiastic, confident, and full of personality.	

FUTURE TECHNOLOGY TEACHER (continued)				
Presentation (60 points) (continued)				
Voice/language (X1)	The participant conveys an inconsistent use of proper grammar, word pronunciation, acceptable pitch and tone.	The participant generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	Smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch are used throughout the presentation.	
Innovation/creativity (X1)	The presentation fails to convey any imagination and originality.	The presentation is somewhat original and inventive.	The presentation is imaginative and innovative in its delivery and topic development.	
Knowledge (X1)	Minimal knowledge of the subject is evident in the presentation; the content does not relate to the topic; the participant does not convey an understanding of the topic.	Knowledge of the subject is evident, but the presenter fails to relate and convey a clear understanding of the topic.	A complete knowledge and understanding of the subject and relationship to the topic are conveyed throughout the introduction.	
			SUBTOTAL (60 points)	
Time Deductions				
			Total time for presentation	
			Total time for set-up	
			Total time for take down	
			Presentation deduction	
			Set-up deduction	
			Take down deduction	
			TOTAL TIME DEDUCTIONS	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

BONUS For the inclusion of audio materials in the presentation. (X1)	Audio visuals are included, but they only slightly enhance the presentation. visuals are used to enhance the presentation.	Audio visual materials are varied and moderately enhance the presentation.	Appropriate materials and audio visuals are used and effectively enhance the presentation.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (130 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

MANUFACTURING PROTOTYPE

☑ A prototype is a full-sized working model of the product, not a mock-up or scale model. In this event, your entry is removed from its packaging and examined by the judges.

OVERVIEW

Participants design and manufacture a prototype of a product and provide a description of how the product could be manufactured in a state-of-the-art American manufacturing facility.

The product for 2013 is a "green" product, made from sustainable materials.

The product for 2014 is a product developed and produced in an alternative way (versus by a traditional method) that demonstrates a reduction of waste.

An appropriate marketing package should accompany each product. The product marketing package should not include the use of any copyrighted characters or images.

PURPOSE

Participants have the opportunity to create a quality product using different materials with innovative features that has relevant application for consumers.

ELIGIBILITY

Participants are limited to one (1) team per chapter.

TIME LIMITS

Entries must be started and completed during the current school year.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program. No more than two (2) team members set up the display.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.

C. No more than two (2) team members pick up their entry from the display area at the time and place stated in the conference program.

REGULATIONS

A. Each entry consists of the prototype itself and accompanying documentation.

B. Prototype

1. Each entry includes a single "shelf-ready" product contained and submitted in its packaging. Evaluators open the package and handle the product.
2. Only original products designed by the participant may be entered. A product made from a kit is not considered a prototype. However, standard hardware, pre-manufactured parts, and specialty items such as LED clocks, pens, bearings, gears, batteries, etc. may be purchased and used in the manufacture of the prototype.
3. A prototype is a full-size working model.
4. The product is limited to 24" x 24" x 24". A product with an antenna or similar parts must be contained within the stated maximum space displacement.
5. The product should display good workmanship and craftmanship (effective use of the selected materials).
6. The product should function in a manner that solves the problem identified at the beginning of the challenge, creating an appropriate solution.
7. The product must not include combustible engines or flammable fuels.
8. The product must not require external AC power. Batteries may be used.

C. Documentation

1. The documentation must be turned in with the prototype at check-in.
2. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:
   a. Title page with the event title, the conference city and state, and the year; one (1) page
   b. Table of contents; pages as needed

Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

c. Description of product—a written description of the product, instructions for its use, its need or intent, and related safety considerations; one (1) page
d. Design efforts—sketches, pictures, magazine clippings, and other graphic design elements used in the development of the final design; up to (3) pages
e. Working drawings—an orthographic-dimensioned drawing, assembly, or pictorial may be presented, with orthographic drawing(s) shown first in this section. Drawings may be on paper no larger than B size (11" x 17") and folded to fit the three (3)-ring binder; up to two (2) pages
f. Materials list—a bill of materials (including costs, size and market value) used to fabricate the product; each item or sub-assembly should be identified as a student-produced standard stock item, or purchased sub-assembly; one (1) page
g. Tool and machine list—a list of hand, power, and stationary tools used to fabricate the product; one (1) page
h. Production plans—a production outline, flow chart, or spreadsheet of the product; up to six (6) pages
i. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible and comments (see Plan of Work log); one (1) page

EVALUATION

Entries are evaluated on the documentation provided in the notebook and on the quality of the product. Please refer to the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CREATIVE THINKING — Students will develop an original concept for their entry. Suggested leadership lessons: *Creative Techniques* and *HAT To Be Creative*
- CRITICAL THINKING — Students will determine the best way to manufacture a product. Suggested leadership lessons: *And The Answer Is* and *Figure It Out*
- TEAMWORK — Students will work together as a team to develop and manufacture a product. Suggested leadership lessons: *Effective Meetings* and *The Gift*

Additional leadership skills promoted in this event: communication, organization, problem solving

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

CNC programmer
Design engineer
Industrial engineer
Information technology manager
Plant process improvement engineer

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

MANUFACTURING PROTOTYPE
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for check-in, two (2)

C. Evaluators for displays, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens for evaluators, three (3)
   6. Results envelope

B. Tape measure to evaluate size of prototype

C. Display tables for entries

D. Chairs for evaluators

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number on each model and notebook. Position displays for evaluation and viewing. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

G. Evaluators independently assess the entries.

H. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

I. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

J. If necessary, manage security and removal of materials from the event area.

Participant/Team ID# _____

MANUFACTURING PROTOTYPE

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Documentation (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation C (X1)	The notebook is unorganized and/or missing three or more components; it includes grammatical errors.	The notebook is missing two components, and/or it is loosely organized.	One or no components are missing; the content and organization are clearly evident.	
Description of product (X1)	A description of the product is missing essential components (e.g., overall design problem, criteria, constraints, overall goals developed to complete the product, etc.)	The product description is over generalized; it is wordy and/or too vague to allow for a proper understanding of the design's goals, criteria and constraints.	A logical, organized, clear and concise product description is provided; it exhibits creativity.	
Design effort (X1)	Little evidence of design is included in the documentation to verify that the product is authentic and/or unique.	The materials included help to build a case for an authentic product design and production, however, more could have been provided.	Substantial and organized materials document the design effort and clearly portray the design process of the product from conception to completion.	
Working drawings (X1)	Drawings are very sloppy sketches of the final product that may/may not correlate with actual product design presented.	Drawings are somewhat correct and use universal drafting procedures; some techniques such as line weight, dimensions and line type are incorrectly used.	The drawings include both orthographic and pictorial/ assembly views to aid in communicating design; all drafting procedures and techniques are correct.	
Materials list (X1)	The bill of materials list is completed incorrectly, and/or many materials/sub-assemblies are missing; the materials list seems to be an afterthought of the product.	The bill of materials includes most primary materials and sub-assemblies, along with appropriate pricing information; most materials are identified as standard stock or specialty parts/ assemblies.	An organized and clear bill of materials list, which includes all parts/assemblies for the production of the product, is included, along with pricing information from multiple suppliers.	
Production plan (X1)	Few charts/diagrams are included that illustrate each part of the product, and/or items are unorganized and seem to be an afterthought of the product's design; few dates highlight each chapter's involvement in the manufacturing process.	Some charts/diagrams are included that help to demonstrate a picture of how each chapter participated in the manufacturing process of each product; some of the diagrams/charts seem illogical and/or unclear.	The plan includes the incorporation of logical and clear charts/diagrams, each of which includes dates with captions that depict each chapter's involvement with the manufacturing process.	
			SUBTOTAL (60 points)	

MANUFACTURING PROTOTYPE (continued)				
Product (40 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Product function (X1)	The criteria and constraints presented in the description of the product are not met in the final product design and development.	All criteria and constraints are met, but the final product is overdesigned and could be simplified to be more efficient.	A logical and unique design that meets all criteria and constraints is provided; the design is elegantly simple and concise.	
Complexity (X1)	The product encompasses very little original thought; it includes three or fewer parts and/or is too easily manufactured.	Five or more parts are used in the product's development, most of which are easily manufactured; the product has little originality.	The product incorporates an innovative and creative use of five or more parts that are made of various materials that add to the product's design.	
Appropriate materials and aesthetics (X1)	The product exhibits extremely limited use of a variety of materials, and/or different materials should have been included to make the product's design better.	Various materials are used in the product's construction, but little/or no evidence exists regarding why certain materials are used instead of others.	Various materials are incorporated into the product's design and production; they fulfill a specific purpose in the product.	
Creativity and originality (X1)	There is little or no evidence of creativity and uniqueness; the product is simply a regurgitation of another product commercially available; unauthentic.	The product exhibits some creative aspects in its design and/or packaging, but only a beginning understanding of the creative aspects of design are evident.	A truly authentic design of a new product, or a new idea for an old problem, is provided; the packaging is creative and appealing.	
			SUBTOTAL (40 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

MUSIC PRODUCTION

OVERVIEW

Participants produce an original musical piece that is designed to be played during the national TSA conference opening or closing general sessions. The musical piece should be energizing, interesting, and of a spirit consistent with the Technology Student Association.

PURPOSE

Modern music production has become integrated with technology in such a way as to demand a synthesis of technical, artistic, and creative skills. Exploring the link between original, creative ideas and the tools used to implement them is an essential activity for the development of a person's technical and expressive abilities.

ELIGIBILITY

Entries are limited to three (3) teams per state. Teamwork is strongly encouraged, but a team of one (1) member is permitted.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. The musical piece should be greater than one (1) minute and less than four (4) minutes in length. There will be a five (5) point deduction for each five (5) seconds under the one (1) minute minimum and a five (5) point deduction for each 15 seconds over the (4) minute maximum length.

C. The time starts with the first sound and continues until the last sound ends.

D. Semifinalists are interviewed for up to ten (10) minutes to explain the technical aspects and creative process of their work.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

☑ In recent years, developments in communication technology have dramatically changed the way in which we experience music. During the past century, recorded music went from nonexistent to the primary way in which people listen to music. With this event, TSA members can demonstrate their mastery of this medium.

PROCEDURE

A. Participants check in their entries (notebooks and CDs) at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.

C. No more than two (2) representatives from each semifinalist team may report to the event area for the interview at the time and place stated in the conference program.

D. Each semifinalist team explains its notebook and musical piece to the evaluators and discusses the purpose, value and creative process of its work. Semifinalist teams will not be allowed to obtain their notebooks until their scheduled interview time.

REGULATIONS

A. All musical pieces must be submitted on audio CD.

B. Lyrics may accompany the musical piece but are not required.

C. The musical piece should be greater than one (1) minute and less than four (4) minutes in length. There will be a five (5) point deduction for each five (5) seconds under the one (1) minute minimum and a five (5) point deduction for each 15 seconds over the four (4) minute maximum length.

D. Musical pieces thirty (30) seconds or less will be disqualified.

E. All entries become the property of TSA for non-profit promotional purposes and will not be returned after judging.

F. All musical pieces must be the original work of the team and must have been completed within the current school year.

G. Free, non-copyrighted sounds, loops, or other musical elements may be incorporated into musical pieces. The sources of these elements and the way in which they are used in the musical piece must be described in the notebook, and the track list must illustrate these elements.

H. Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated in a timeline format in the notebook.

I. Where applicable, all ideas, sounds, and loops from other sources must be cited. If copyrighted material is used, proper written permission must be included. NOTE: Failure to follow this procedure results in disqualification.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events. For Music Production, especially note the rule about original work and the use of materials from other sources.

J. The CD and an 8½" x 11" notebook are turned in to the event coordinators. The notebook is presented and organized in a professional manner. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the title of the musical piece, the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Plan of Work log); one (1) page
4. Purpose and description of the musical piece; one (1) page
5. Team's self-evaluation of the piece using criteria from the official rating form; one (1) page
6. Lyrics; pages as needed
7. Audio CD(s) track list: Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated graphically using a timeline format similar to that shown below in Figure 1.

Figure 1

8. When musical elements are used that were NOT created by the team, the source, effects applied to, the way each element was incorporated into the song, and how each element corresponds to the musical piece's track list must be included; pages as needed. FAILURE TO INCLUDE THIS SECTION RESULTS IN DISQUALIFICATION.
9. List of hardware, software, and instruments used in the development of the musical piece; one (1) page
10. List of references that includes sources for materials (copyrighted and non-copyrighted); pages as needed

11. Permission letters for copyrighted material (this includes music clips and images); pages as needed

EVALUATION

Evaluation is based on the musical piece and on the accompanying documentation. Depending upon the stated purpose, musical pieces are judged on coherence, style, creativity and artisanship as well as technical attributes, creativity, organization, and their overall effect. Additionally, the musical piece and notebook should reflect familiarity with the technologies used in musical production. Notebooks should be complete, well written, and professional in organization and appearance. For more information, please refer to the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Through music, students will convey an array of ideas and emotions. Suggested leadership lessons: *Personality Types* and *Promote It*
- CREATIVE THINKING — Students will explore the links between creative ideas and how to produce them. Suggested leadership lessons: *Color Hunt* and *HAT To Be Creative*
- ETHICS — Students will create an entirely original product. Suggested leadership lessons: *Ethics In Everyday Life* and *It's Nothing. Everyone Does It...*

Additional leadership skills promoted in this event: evaluation, organization, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Artist
Audio designer or engineer
Audio operator or technician
Broadcast technician
Composer

TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

MUSIC PRODUCTION
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for first round, two (2) evaluators for every fifteen (15) entries or fraction thereof

C. Evaluators for second round, one (1) evaluator for groups of top 5 (five) entries

D. Semifinalist evaluators, two (2) evaluators for top twelve (12) semifinalists

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens and notepads for evaluators
   6. One (1) stopwatch per group of evaluators
   7. Calculators, one (1) for each event evaluator
   8. Semifinalist list for posting
   9. Results envelope

B. Tables and chairs for evaluators

C. CD player capable of playing an audio CD, one (1) each per evaluation team

D. Extension cords (25' minimum length), one (1) per evaluation team

E. Power bar with surge protection, one (1) per evaluation team

PROCEDURE

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number on each CD and notebook. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Each team of evaluators averages its scores to determine the top five (5) entries from that group. The number of evaluator teams depends on the number of entries. There are two (2) evaluators for every twenty (20) participants for the first evaluation round. The top five (5) entries from each group are forwarded to the event coordinator.

I. The groups of top five (5) entries are then assessed by two (2) new evaluators for a second evaluation round. The average of the second round of evaluations determines the top twelve (12) semifinalists. The semifinalist list is posted.

J. The semifinalists report at the time and location stated in the conference program to be interviewed.

K. Semifinalists are interviewed for up to ten (10) minutes to explain the technical aspects and creative process of their work.

L. During the interview process, semifinalist evaluators independently assess the semifinalists. Evaluators discuss and break any ties.

M. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

N. Take all CDs, notebooks, extension cords, and supplies to the CRC room. Return all equipment to the appropriate personnel.

Participant/Team ID# _____

MUSIC PRODUCTION

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Record scores in the column spaces below.

Notebook (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation J (x1)	The notebook is unorganized and/or missing three or more components.	The notebook is missing two or more components, and/or is loosely organized.	All components of the notebook are included and the organization of the content is clearly evident.	
Purpose and description (X1)	An unclear purpose and description of the music production idea and generation are provided; there are many grammatical errors.	The purpose and description are explained appropriately, but some grammatical errors are evident, and/or the writing is not concise.	A clear and concisely written purpose and description of the music production are included; no or few grammatical mistakes are evident.	
Plan of Work log and self-evaluation (X1)	The Plan of Work log and/or self-evaluation are incomplete, and/or missing key components; participants exhibit poor insight when completing the documents.	The Plan of Work log and/or self-evaluation are somewhat complete, but they may be over generalized; few grammatical mistakes are evident.	A complete and concisely written Plan of Work log and self-evaluation are provided; these incorporate the efforts and reflections of all team members.	
Track timeline (X2)	The track timeline is incomplete and/or not created correctly; the timeline does not correlate with the actual music production.	The track timeline is more or less complete and attempts to correlate with the actual music production.	The track timeline is of exemplary quality; it correlates completely with the music production and is easy to follow.	
			SUBTOTAL (50 points)	

Musical Piece (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Creativity and uniqueness (X1)	The musical idea is overly familiar or is a cliché; no variety or exploration of musical elements (range, timbre, dynamics, tempo, rhythm, and melody) is evident.	The work involves some original aspects or manipulations of musical ideas; it explores and varies at least one or more musical elements.	The piece includes very original, unusual or imaginative musical ideas; it explores and varies at least two or more musical elements.	
Artisanship (X1)	The piece gives no sense of a completed musical idea; there is no clear beginning, middle or end section; the form appears random, rather than organized.	One musical element has been used to organize the musical ideas and overall form, which are somewhat coherent.	The piece presents at least one complete musical idea; the piece has a coherent and organized form with a clear beginning, middle and end; musical elements are used to organize the musical ideas and form.	

MUSIC PRODUCTION (continued)				
Musical Piece (continued)				
Energy and style (X1)	The piece lacks liveliness, vitality and vigor; there is no flair, elegance or grace to the form.	The piece generates an initial level of energy that does not transcend to the end; the style is distinctive but not exemplary.	The liveliness and forcefulness of the piece excite the listener; the style is truly unique and electrifying.	
Appropriateness (X1)	The musical idea or concept is not appropriate and acceptable for use in the event.	The musical idea or concept is acceptable, but it pushes the limit of what is considered allowable and expected for the event.	The musical idea or concept presented is fitting and serves as an excellent example of the type of work expected.	
Overall appeal (X1)	The work does not present an effective general impression; the musical ideas do not hold the listener's interest.	The work includes some interesting musical ideas; the general impression is pleasant and moderately effective.	There is strong, interesting and effective audio appeal; the work is designed to be enjoyed by the listeners.	
				SUBTOTAL (50 points)
Time Deductions				
Five (5) points off for each five (5) seconds under one (1) minute, five (5) points off for each fifteen (15) seconds over four (4) minutes.				
Total time under		Five (5) second intervals under		Under time deduction
Total time over		Fifteen (15) second intervals over		Over time deduction
				SUBTOTAL (100 points)
Semifinalist Interview (50 points)				
CRITERIA		Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)		The team seems unprepared and unorganized for the interview.	The team acts prepared for the interview, but it is somewhat disorganized in its presentation.	The team's presentation and interview with judges are logically organized and impressive.
Clarity (X1)		The team's presentation is full of illogical thoughts that lack understanding and clarity.	The team's presentation is somewhat logical and/or clear, but it is not concise.	A concise, logical and clear explanation of the entry is given by the team.
Articulation (X1)		Team members are verbose, illogical and include many "uhs, ums, hmms," etc. in their responses.	Logical and well-spoken interview responses are given with few "uhs, ums, hmms," etc.	Well spoken, distinct, and clear interview responses are given by the team, with no or very few "uhs, ums, hmms," etc.; the interview is a quality effort.
Team participation (X1)		Only one member of the team communicates with the judges; there is no participation from other team members.	Team members participate equally, but only one member seems to fully understand the concepts.	All team members seem to fully understand the concepts and share an equal role in the interview.
Knowledge (X1)		Team members seem to have very little understanding of the concepts and give vague interview answers.	Team members have a generalized understanding of the concepts discussed and answer questions well.	There is clear evidence that all team members have a thorough understanding of the concepts discussed.
				SUBTOTAL (50 points)

MUSIC PRODUCTION (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (150 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

ON DEMAND VIDEO

OVERVIEW

Participants write, shoot, and edit a sixty (60) second video during the conference in this on-site event. Required criteria, such as props and a line of dialogue, make the competition more challenging and will be revealed at the event orientation meeting.

PURPOSE

Participants have the opportunity to use video skills, tools, and processes to communicate, entertain, inform, analyze and/or illustrate a topic, idea, subject or concept. An extremely powerful and ubiquitous medium, video production has great potential, strengths and limitations that should be understood by all.

ELIGIBILITY

Participants are limited to one (1) team of two (2) or more students per chapter. One (1) entry per team is permitted.

TIME LIMITS

A. Entries must be started and completed during the conference.

B. The video must be no longer than sixty (60) seconds in length.

C. Participants have forty-eight (48) hours, beginning at the event orientation meeting, to complete the entire production.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program.

B. The event coordinator distributes the materials, information, directions and deadlines to each team.

☑ Entries may be submitted to the TSA video library, after the conference.

C. Each team supplies its own video production and editing equipment that it wishes to use to complete its production. Entries will be submitted on a 12cm DVD suitable for viewing on a standalone DVD player.

D. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.

E. Participants shoot their footage only at officially sanctioned conference locations.

F. Participants may not disturb any event in progress, enter a restricted evaluation area, interrupt a conference function, or participate in behavior unbecoming to a conference participant.

G. Ten (10) finalists are announced at the awards ceremony.

REGULATIONS

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

A. Videos must be submitted on a 12cm DVD suitable for viewing on a standalone DVD player.

B. All entries become the property of TSA, Inc. and will not be returned after judging.

C. Teams must include two (2) or more members.

D. Teams may use no more than one (1) video camera for the video production.

E. Teams must edit their projects on a nonlinear editing system or their camera. Teams are responsible for providing their own editing equipment.

F. All video footage must be the original work of the team and must have been completed during the event timeline.

G. Where applicable, all ideas, test images and sound from other sources must be cited. Copyrighted materials may NOT be used. NOTE: Failure to follow this procedure results in disqualification.

H. The video and an 8½" x 11" notebook are turned in to the event coordinator. The notebook is presented and organized in a professional manner. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed

3. Purpose and description of video; one (1) page
4. A shot log used in production planning to aid with shot selection and shot type for each scene; one (1) page
5. Two (2) column script detailing specific audio and video cues that must correlate with the video; pages as needed
6. List of video equipment and software used in the development of the video; one (1) page
7. List of references that includes sources for materials; pages as needed
8. If all images and audio used in the entry are original, a statement to verify that is required.

EVALUATION

Evaluation is based on the completed video production and the accompanying documentation. Depending on the stated purpose, videos are judged on story concept, artistic and/or social value, camera technique, transition and video pace, as well as technical attributes, creativity and organization, and the overall effect of the solution. The video should also incorporate the specified prop(s) and dialogue presented during the event meeting. Notebooks should be complete, well written, and professional in organization and appearance. Please refer to the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will organize and produce an effective entry. Suggested leadership lessons: *Fact Or Fiction* and *Listening Skills*
- CREATIVE THINKING — Students will use original ideas to develop their entry. Suggested leadership lessons: *Color Hunt* and *HAT To Be Creative*
- EVALUATION — Students will review and critique their work throughout the development of their video. Suggested leadership lessons: *Evaluation Imagination* and *Seven Components of Effective Evaluation*

Additional leadership skills promoted in this event: organization, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Audio/video operator or technician
Cinematographer
Film/video editor
Screen editor
Script writer

ON DEMAND VIDEO
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more for every twenty (20) entries

C. Evaluators, two (2) or more for the semifinalists from each group

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens and notepads for evaluators
   6. One (1) stopwatch per group of evaluators
   7. Calculators, one (1) for each event evaluator
   8. Marking pens, three (3)
   9. Results envelope

B. Tables and chairs for evaluators

C. Computer capable of reading a DVD, and a monitor — one (1) each per evaluation group

D. Extension cords (25' minimum length), one (1) per evaluation group

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Meet with all participants at the scheduled time and location to deliver the event criteria, including required props and dialog. Ensure that all participants understand regulations regarding

equipment allowed, behavior, deadlines, and submission requirements.

D. Check in the completed entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

E. Place an entry number on each DVD and notebook. Do not use a sticker (with the ID#) on the DVD; use a marking pen to record the ID number on the DVD. Secure the entries in the designated area.

F. One (1) hour before the judging is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

G. Evaluators independently assess the entries.

H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

I. Each group of evaluators averages its scores to determine the top five (5) entries from that group. The number of evaluator groups depends on the number of entries. In this case, there are two (2) or more evaluators for every twenty (20) participants. The top five (5) entries from each group are forwarded to the event coordinator.

J. The coordinator lists the semifinalists in random order on new rating forms that are given to the semifinalist evaluators. The semifinalist list is NOT posted.

K. Semifinalist evaluators independently assess the semifinalists.

L. Semifinalist evaluators average their scores to determine the top ten (10) finalists and their ranking. Evaluators discuss and break any ties.

M. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

Participant/Team ID# _____

ON DEMAND VIDEO

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Notebook (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation H (X1)	The notebook is unorganized and/or is missing three or more components.	The notebook is missing two components, and/or is loosely organized.	All components are included and the quality of the content and organization are clearly evident.	
Purpose and description (X1)	The purpose and description are poorly written, unclear and/or contain many grammatical errors.	The purpose and description are explained appropriately, and/or some grammatical errors are evident, and/or the writing is not concise.	Clearly and concisely written, the purpose and description are completely effective and interesting.	
Script (X2)	The script is not in the correct two-column format, and/or it is missing key attributes, such as character dialogue, nonverbal cues, etc.; the script is unorganized, and there is incoherent spacing.	The script contains most key attributes and is correctly formatted; some grammatical mistakes are evident, but overall the script follows the video production.	The script is concise, fluid and all of its attributes correlate completely with the video production.	
			SUBTOTAL (40 points)	

Production (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Camera handling (X1)	Serious problems with focus, steadiness, and framing are evident.	Clearly focused and framed shots with limited zooms are included.	Steady and creative shots that enhance the video are utilized, and great close-ups are included.	
Lighting (X1)	Numerous shots are improperly lit; bleaching, shadows, or unbalanced conditions may be evident in some shots; there is no evidence of an attempt to correct problems.	Most shots are properly lit, either through ambient lighting or the use of techniques to correct poor lighting conditions.	All shots are well lit, either through ambient lighting or the use of techniques to correct poor lighting conditions.	
Audio (X1)	Audio may have clarity issues, distortion, or be washed out from poor signal-to-noise ratio; there is evidence of the use of a built-in camera microphone that detracts from the message.	The audio is clear, with consideration given to a good signal; background or ambient noise may occasionally be a distraction.	The audio is clear and recorded with good signal-to-noise ratio, displaying skillful microphone choice, placement, and technique.	
Continuity and pacing (X2)	The story sequencing is confusing; shots are too long or "clipped," with edit points appearing "glitchy."	The pace and timing are well structured; clips move along, telling the story, with moderate use of transitions.	Shots logically pace the story along in an interesting way, with an excellent and purposeful use of transitions.	
Video effectiveness (X1)	The video does not meet project goals, presents an unclear message, and is sloppy overall.	The video topic is presented with insights; the video adequately meets the objective.	The video is focused, with a rich variety of supporting material.	

ON DEMAND VIDEO (continued)				
Production (100 points) (continued)				
Aesthetics and artisanship (X1)	The work is unorganized and sloppy; the display seems to be an afterthought, as if it were thrown together.	The work provides an organized presentation of essential issues in a logical format.	The work provides an exemplary use of layout and design principles to logically communicate important data.	
Communication of solution (X1)	It is difficult to understand the solution being communicated; an illogical explanation is presented.	The solution is communicated, but thoughts are not organized and/or are not concise.	The work exudes creativity; essential design principles and elements are integrated.	
Use of required props (X1)	Props incorporated in the video appear as an afterthought.	Props incorporated in the video add some artistic value, but they don't further the plot.	Props are integral to the production's plot and artistic value.	
Use of required dialogue (X1)	The line of dialogue is not incorporated in the production, and/or the dialogue is incorrect.	The line of dialogue is incorporated, but is not essential to the production's plot.	The line of dialogue is communicated effectively and is integral to the production's plot.	
			SUBTOTAL (100 points)	

Time violation (a deduction of five (5) points will be incurred for exceeding the sixty (60)-second time limit for the length of the video). Record the deduction in the space to the right.	
Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (140 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

OPEN SOURCE SOFTWARE DEVELOPMENT

OVERVIEW

Participants work as part of a team to participate in the development, debugging, and documentation of a new or existing open source software project. Through a multimedia presentation and entrant notebook, the team explains in detail how it has contributed to the project. The project should have educational or social value. Semifinalists demonstrate and promote their work in a timed presentation.

PURPOSE

Participants should utilize knowledge of cutting edge technologies, algorithm design, problem-solving principles, effective communication, and globally collaborative teamwork to create or improve upon an open source software project.

ELIGIBILITY

Participants are limited to one (1) team per chapter.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Semifinalists are allowed up to ten (10) minutes for their presentation.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Teams submit their entries at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. Semifinalist teams report to the event area at the time and place stated in the conference program.

D. Semifinalist teams give a presentation that showcases their team's work on their project and promotes the project both to expand end-user usage and attract future developers. Evaluators are free to ask questions.

E. No more than two (2) team members of the team pick up the entry from the display area at the time and place stated in the conference program.

REGULATIONS

A. A presentation CD/DVD and a three (3)-ring binder, with a clear front sleeve for a cover page, are required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Research about the project and why the team felt it was important to be addressed; one (1) page
4. Description of the team's open source project, including the problem and the solution for the problem; one (1) page
5. Detailed explanation of the teams work; one (1) or more pages
6. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member(s) responsible, and comments (See Plan of Work log); one (1) page
7. Preview of the team's presentation (printout of screenshots or slides are recommended); one (1) or more pages
8. Team's evaluation of its work and the project's future prospects; one (1) page
9. List of references used for the project
10. The CD/DVD (in a CD/DVD sleeve) — attached to a sheet of paper in the notebook or slipped in the front inside pocket of the notebook. The team ID# must be indicated on the CD/DVD.

B. Participants must contribute to the design, development, debugging, and/or documentation of a completely open-sourced software project.

C. All notebooks and presentations become the property of TSA, Inc., and will not be returned after the event.

EVALUATION

Evaluation is based on the quality of work and overall benefit showcased in the participant notebook. Semifinalists will be judged on their multimedia presentation and their ability to promote their software project, both to expand end-user usage and attract future developers. See the official rating form for more information.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- Communication — Students communicate with team members and other project developers, debuggers, and documenters. Suggested leadership lessons: *Fact Or Fiction* and *Promote It*
- Critical thinking — Students analyze and evaluate a problem in order to arrive at an acceptable solution. Suggested leadership lessons: *And the Answer Is* and *Figure It Out*
- Problem solving — Students design solutions to problems within open source software. Suggested leadership lessons: *Debate It* and *Effective Brainstorming*

Additional leadership skills promoted in this event: self-esteem, teamwork, organization, decision making, ethics, creative thinking, evaluation

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Graphic designer
Software engineer
Technical writer

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

OPEN SOURCE SOFTWARE DEVELOPMENT
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for notebooks, two (2) or more

C. Evaluators for semifinalist presentations, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens for evaluators
   6. Semifinalist list for posting
   7. Results envelope

B. Chairs, one (1) per participant

C. Stopwatch for timing semifinalist presentations

D. Computer (laptop) for the semifinalist presentation

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only

after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

E. Place an entry number on each presentation CD/DVD, and notebook. Position entries for evaluation and viewing by judges. Secure the entries in the designated area.

F. Evaluators independently review each entry and complete the official rating form.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Evaluators average their scores to determine the twelve (12) semifinalists.

I. Prepare a list of the twelve (12) semifinalists in random order and submit it to the CRC chairperson for posting.

J. Inspect the area in which the semifinalist presentations are to be held. There must be seating for at least five (5) people at a table that has been set up with a computer and display.

K. Meet with your semifinalist evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

L. Conduct semifinalist presentations/interviews. Evaluators should be sure to ask questions.

M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. Manage security and the removal of materials from the area.

Participant/Team ID# _____

OPEN SOURCE SOFTWARE DEVELOPMENT

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Documentation (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation A (X1)	The notebook is unorganized and/or is missing three or more components.	The notebook is somewhat organized, but it is missing one or two components.	The notebook is organized and complete and includes all required components.	
Research (X1)	The research is inadequate, and/or very few credible sources are referenced.	The research is adequate, but it includes only a few credible sources.	The research is comprehensive, and credible resources are included.	
Description of project (X1)	A description of the project, including an explanation of the problem and the solution for the problem, is poorly presented; many grammatical errors are present.	A description of the project, with an explanation about the problem and its solution, are over generalized, and/or not concise; some grammatical errors are present.	The description of the project is clear and concise and fully addresses the problem and solution; there are no or few grammatical errors present.	
Plan of Work log and self-evaluation (X1)	The Plan of Work log and the self-evaluation are incomplete and/or missing key components; there are a number of grammatical errors.	The Plan of Work log and self-evaluation are mostly complete, but they may be over generalized; there are some grammatical errors.	The Plan of Work log and the self-evaluation are complete and concisely written; they include the reflections of all team members.	
Multimedia presentation (X1)	The multimedia presentation adds little understanding to the project.	The multimedia presentation somewhat enhances the understanding of the project.	The multimedia presentation is effective and significantly enhances understanding of the project.	
			SUBTOTAL (50 points)	

Software Design (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Incorporation of design principles (X1)	The design does not incorporate, or considers as an afterthought, these design principles: alignment, consistency, contrast, unity, white space, balance, proportion.	The design is missing two or fewer design principles, but the overall design and layout are somewhat aesthetically pleasing.	All elements of design principles are included, resulting in an aesthetically pleasing design and layout.	
Complexity (X1)	The software design exhibits little original thought; it appears as a "bare bones" effort.	The software design exhibits some degree of original thought and complexity.	The software design is authentic and complex, resulting in a highly useful product.	
Aesthetics and artisanship (X1)	The work (layout) is sloppy and unorganized, with little or no attention given to aesthetics.	The work (layout) is somewhat organized, with some attention given to aesthetic details.	The layout/design is well organized and logical and communicates important information.	
Creativity (X1)	The work lacks creativity; very few design principles are integrated in the software design.	Some elements of creativity are expressed, but essential design principles are missing or are not used effectively.	The work exudes creativity; essential design principles and elements are integrated.	

OPEN SOURCE SOFTWARE DEVELOPMENT (continued)				
Software Design (60 points) (continued)				
Technical Skill (X1)	Little technical skill is exhibited in the software; levels of software development are not fluid and/or are illogical.	A beyond basic degree of technical skill is exhibited in the software's design and construction; the software flows somewhat effectively from level to level.	The software exhibits a level of mastery of open-source design skill that few at this level possess; the software flow is constant and logical.	
Effectiveness (X1)	The software design does not appropriately provide a solution to the intended problem.	The design loosely provides a solution to the intended problem, but it doesn't fully address the problem presented.	The solution to the problem is clear in the software design; the solution is at the forefront of software creation.	
			SUBTOTAL (60 points)	
Presentation (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	The team seems unprepared and unorganized for the presentation and interview.	The team is prepared but somewhat disorganized in its presentation to judges.	The team's presentation and interview with judges are logically organized and effectively presented.	
Clarity (X1)	The team's presentation is full of illogical thoughts that lack understanding and clarity.	The team's presentation is logical, though some points are confusing.	The team provides a concise, logical and clear explanation of the thesis and pertinent issues.	
Articulation (X1)	The presenters are verbose and illogical in the interview; many "uhs, ums, hmms," etc., are used.	Logical and well-spoken interview responses are evident, with few "uhs, ums, hmms," etc.	Team members are well spoken and distinct; clear interview responses are given, with very few, if any, "uhs, ums, hmms," etc.	
Team participation (X1)	Only one team member communicates with judges; there is no participation from other team members.	Team members participate equally, but only one member seems to fully understand the concepts.	All team members seem to fully understand the concepts and share an equal role in the interview.	
Knowledge (X1)	Team members seem to have very little understanding of the concepts in their project; they provide vague interview answers.	All team members have a general understanding of the concepts discussed and answer questions adequately.	There is clear evidence that all team members have a thorough understanding of the concepts presented in their project.	
			SUBTOTAL (50 points)	
OPEN SOURCE SOFTWARE DEVELOPMENT (continued)				

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (160 points)**

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

PHOTOGRAPHIC TECHNOLOGY

OVERVIEW

Students capture images and process photographic and digital prints that depict the current year's published theme. Twelve (12) qualifying semifinalists participate in an on-site event in which they capture digital images and utilize multimedia software to prepare and develop a media presentation during the annual conference.

The theme for 2013 is Courage.
The theme for 2014 is Goodwill.

☑ Participants are reminded that the major emphasis for this event is the quality and processing of the images captured, processed and documented. Participants create a digital display and graphic of their work that is included in their documentation notebook.

PURPOSE

Participants have the opportunity to demonstrate understanding of and expertise in using photographic and imaging technology processes to convey a message. Semifinalists record images and develop a media presentation of TSA conference activities as assigned.

ELIGIBILITY

Participants are limited to one (1) individual per chapter; one (1) entry per individual.

TIME LIMITS

Entries must be started and completed during the current school year.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement for the second and third stages of the event.

PROCEDURE

A. Participants check in their entry at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. Semifinalists report to the event area at the time and place stated in the conference program.

D. Each semifinalist must have a digital camera, access to a computer with multimedia software, and a standard 15 pin VGA cable port. Semifinalists must bring two (2) blank CDs/DVDs to compete in the semifinals round of the event.

E. The event coordinator distributes to each semifinalist the description of the semifinalist assignment, specific directions, and timelines for the three (3) stages of the semifinals.

F. Semifinalists use the assigned time for the first stage in which they capture images of newsworthy conference events and activities that depict the semifinalist assignment. Any type of image typical of responsible news reporting and publication is considered appropriate.

G. Semifinalists shoot their images only at officially sanctioned conference sites.

H. Semifinalists may not disturb any event in progress, enter a restricted evaluation area, interrupt a conference function, or participate in behavior unbecoming to a national participant in any event.

I. During the second stage of the semifinals, utilizing multimedia presentation software (Microsoft PowerPoint, Keynote, Corel Presentation, Flash, etc.), each semifinalist will select images, develop a storyboard, create captions, and prepare a Photographic Technology newsworthy presentation. Participants may not use or add music or sound to their presentation. The background color for all presentations must be either black, white or gray (50%). Semifinalists will be allowed two and one half (2½) hours to complete the second stage of the event. Each semifinalist presentation should be stored on the participant's memory stick and turned in to the event coordinator.

J. Semifinalist presentations in the third stage take place as noted in the conference program.

K. Upon completion of the second stage, each semifinalist will submit a CD or DVD copy of his/her finalized presentation to the event coordinator. The participant will then be assigned a presentation time.

REGULATIONS

A. Participants submit their photographic prints and documentation materials for judging in an entry notebook.

B. Each entry must include fifteen separate prints, with each image size no larger than 8½" x 10" or smaller than 3" x 5".

C. Each entry must include five (5) black and white prints, five (5) color prints, and five (5) prints of the student's choice. Sepia tones, blue tones, or coloring of any type other than black and white will count as color prints.

D. Each entry should include a variety of prints, such as action, still life, product, portrait, special effects, groups, wildlife, landscape, etc. All special effects images submitted for judging must be the sole work of the individual participant. Examples of this type of photography include but are not limited to combination printing, successive printing, ghost images, sandwiching, silhouettes, etc. Each print must be labeled as to its type and special effects. Any print that is submitted that combines images must have the unaltered prints included in the entrant's documentation notebook.

E. Each print (none larger than 8" x 10") must be processed and printed on 8½" x 11" photographic paper. All prints (regardless of vertical or horizontal orientation) are to be placed allowing a 1/4" border on the two sides and across the top, leaving a 3/4" border across the bottom of the page (8 ½" width) where captions will be centered and placed. Participants may choose to leave this border white, or they may use a gray or black shaded printed border, which will require an adjustment in the text coloring.

F. Prints smaller than 8" x 10" should maintain and use the same size gray or black shaded borders around the print, as specified above. If a white border/background is desired, the only concern will be the placement of the caption centered below the print. (Some pictures/prints show better with a black or grey border/background, as opposed to white.)

G. Each finished print must be be submitted in a separate page protector.

H. A description of the post processing completed for each individual print is to be placed on the back side of the print.

I Submitted prints must be the work of one (1) student.

J. Recognizable individuals selected and pictured in prints/images must give their written consent before the prints can be used in this event. (See Photo/Film Consent and Release form below.)

K. All prints and documentation are to be placed in a standard three (3)-ring binder with a clear plastic front sleeve for the cover page. The cover page must include a graphic representation of

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

the student's prints that have been submitted for judging. The arrangement of the prints on this graphic should mimic a full scale display that can be viewed by the judges. All captions and descriptions should be included on this graphic. The graphic file must be identified as the ***Cover Page Graphic File*** on the CD or DVD that is submitted as part of the documentation for the event. The cover page must be placed in the front sleeve of the binder. The inside of the binder must include the following single-sided, 8½" x 11" pages:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. A description of the entrant's interpretation of the theme and justification for the selection of the various shots/images that are included in the entry; no more than two (2) pages
4. All fifteen (15) prints submitted for judging must be properly labeled with captions and placed in separate sheet protectors.
5. Each original and unaltered print must be placed in a separate sheet protector directly behind the corresponding finished print. Original prints for altered prints and multiple imaging must be placed in separate sheet protectors in the same manner, with a description of the special processing attached to the back of the print.
6. All consent forms; include a page with a statement to verify that no consent forms are included, when deemed unnecessary.
7. CD or DVD, with copies of all original and finished images, as well as the Cover Page Graphic File (placed in a CD/DVD sleeve attached to a single sheet of paper)
8. List of resources and references used; pages as needed.

All prints used in Photographic Technology should be appropriate for viewing at the national TSA conference. Any entry that includes images depicting inappropriate or unacceptable behavior results in disqualification.

EVALUATION

Evaluation is based on points earned for the required images and documentation notebook, and the three (3) stages of the semifinals during the on-site portion of the event. Scores on required images and the documentation notebook determine the twelve (12) semifinalists. Points earned through the on-site event determine the final ranking.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Using technology, students convey a theme effectively. Suggested leadership lessons: *Fact Or Fiction* and *Promote It*
- CREATIVE THINKING — Students incorporate original ideas to depict the event theme and meet the event requirements. Suggested leadership lessons: *Color Hunt* and *Creative Techniques*
- EVALUATION — Through evaluation, students ensure that the entry is captivating. Suggested leadership lessons: *Seven Components Of Effective Evaluation* and *Silence Is Golden*

Additional leadership skills promoted in this event: decision making, ethics, organization, problem solving

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Advertising or public relations executive
Graphic designer
Photographer
Publisher
Sales manager

PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

Name of minor in images (please print)

Name of minor's parent/guardian (please print)

Name of adult in images (please print)

Parent/guardian or adult's signature (as applicable)

Date

PHOTOGRAPHIC TECHNOLOGY
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for check-in, two (2)

C. Evaluators for displays, two (2) or more

D. Evaluators for semifinalist entries, two (2) or more

MATERIALS

A. Coordinator's notebook, containing
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pencils/pens for evaluators
   6. Notepads
   7. Semifinalist list for posting
   8. Ream of paper
   9. Results envelope

B. Tables for entries

C. Tables and chairs for evaluators

D. Semifinalist event information sheet

E. Event time line and presentation schedule

F. LED projector and laptop with appropriate software for semifinalist presentations

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Place an entry number in the upper right-hand corner of the cover of the documentation notebook, the CD/DVD sleeve, and the labeling area of the CD/DVD. Collect entries for evaluation and secure them in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Evaluators tally and submit their signed official rating forms.

I. Prepare a list of the twelve (12) semifinalists and submit it to the CRC chairperson for posting.

J. Manage stage one of the semifinals and distribute the description of the Photographic Technology semifinalist assignment, specific instructions, and time lines to each semifinalist.

K. Manage the second stage of the semifinals, during which time the students will prepare their presentations.

L. Collect CDs/DVDs of finished presentations, assign presentation times, and manage the third stage of the semifinals, during which time each semifinalist presents his/her media presentation to the judges.

M. Following completion of the third stage, evaluators review and determine the final rank order for the semifinalist portion of the event.

N. Evaluators discuss and break any ties.

O. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

P. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

PHOTOGRAPHIC TECHNOLOGY

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Documentation (150 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation K (X1)	The notebook is unorganized and/or three or more components or sections are missing.	The notebook is generally well organized and missing only two components or sections.	The notebook is exceptionally well organized and contains all required components.	
Description of theme interpretation and justification (X1)	The description is illogical and difficult to understand; the explanation of the theme is unclear.	The description is communicated, defined and explained appropriately, but the writing is not concise.	The description is well written, clear and concise; the interpretation and justification are engaging.	
Required prints See Regulations B and C (X2)	Many prints are missing and not all categories are complete and identified.	Most prints are included, but one or more in each category may be missing or improperly identified.	All prints for all categories are included and correctly identified.	
Captions and descriptions (X1)	Many captions and descriptions are missing and/or placed incorrectly.	Most captions and descriptions are appropriate and placed correctly.	All captions and descriptions are appropriate and placed correctly.	
Lighting and special effects (X1)	Very few images exhibit any consideration to lighting and special effects.	Most images exhibit attention to lighting and the use of special effects.	All images are enhanced by attention to lighting and the use of special effects.	
Composition of images (X1)	Very few prints indicate attention to the composition of the images.	Most prints exhibit some consideration of composition.	All prints evidence great attention to the composition of the images.	
Processing and finishing (X1)	Very poor finishing and processing qualities are exhibited.	Most prints exhibit appropriate processing and finishing techniques.	All prints exhibit excellent quality in processing and finishing.	
Creativity (X1)	There is little or no evidence of creativity in the images.	Most images exhibit a somewhat successful attempt at creativity.	All images exhibit creativity.	
Depiction of theme (X1)	The images poorly depict the theme.	Most of the images included relate to and depict the theme.	All images do an excellent job of presenting a clear and concise theme.	
Visual impact (X1)	The images do very little to provide any meaningful visual impact of the theme.	The images provide a somewhat successful attempt at visual impact of the theme.	All images provide an exemplary visual impact of the theme.	
Consent forms (X1)	Many forms are missing and/or are not organized.	Most forms are included and are somewhat organized.	All necessary forms are included and appropriately organized.	
Printed originals (X1)	Very few original prints are included, and/or they are not properly placed and identified.	Most original prints are included and are placed as specified, with limited identification.	All original prints are included and placed appropriately, with proper identification.	

PHOTOGRAPHIC TECHNOLOGY (continued)				
Documentation (150 points) (continued)				
CD/DVD – cover page layout (X1)	The CD/DVD does not have the necessary files or cover.	The CD/DVD has a cover, but it is missing one or two files.	The CD/DVD and cover, with all of the necessary files, are included.	
Resources/references (X1)	Few references and resources are cited.	Some references and resources are cited.	All references and resources are cited.	
			SUBTOTAL (150 points)	
Semifinalist On-site Challenge (80 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Effectiveness in depicting theme (X2)	The theme is poorly depicted by the images.	Most of the images included relate to and effectively depict the theme.	All images included do an excellent job of presenting a clear and concise depiction of the theme.	
Composition of images (X1)	Very few prints indicate any attention to the composition of the images.	Most prints exhibit some consideration of the composition of the images.	All prints evidence a great deal of attention to the composition of the images.	
Creativity in imaging (X1)	There is little or no evidence of creativity in the images.	Most images exhibit a somewhat successful attempt at creativity.	All images clearly exhibit creativity.	
Captions and descriptions (X1)	Many captions and descriptions are incorrect or missing, and/or all are not centered, and/or the 1" border has not been maintained.	Most captions and descriptions are correct, centered properly, and placed in the appropriate 1" border.	All captions and descriptions are correct and appropriate, properly centered and placed in the 1" border.	
Lighting and special effects (X1)	Very few images exhibit any consideration to lighting and special effects.	Most images exhibit attention to lighting and the use of special effects.	All images are enhanced by attention to lighting and the use of special effects.	
Presentation (X2)	The media presentation is unorganized and ineffective in meeting the on-site challenge.	The media presentation is somewhat effective in its attempt to represent the on-site challenge.	The media presentation does an excellent job of meeting and representing the requirements of the on-site challenge.	
			SUBTOTAL (80 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (230 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

PREPARED PRESENTATION

OVERVIEW

Participants deliver an oral presentation that includes audio and/or visual enhancement based on the theme for the current year's conference.

The theme for Prepared Presentation will reflect the current national TSA conference theme. See the national TSA website at www.tsaweb.org.

PURPOSE

Participants have the opportunity to develop and deliver a presentation using audio and/or visual support materials on an assigned topic.

ELIGIBILITY

Participants are limited to three (3) individuals per state.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. Each presentation must be no less than three (3) minutes and no more than five (5) minutes.

C. A maximum of four (4) minutes is allowed for set-up.

D. At the conclusion of the presentation, the participant must remove all materials within three (3) minutes.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program to receive an assigned presentation time.

B. Participants will report to the holding area, as stated in the conference program, fifteen (15) minutes prior to the assigned presentation time.

☑ Tips for success from past top placers include these:

• Sell yourself using eye contact, gestures, and a comfortable and clear speaking style.

• Be creative with fresh, unique ideas.

C. The event coordinator introduces each participant by number and in order of scheduled times. The schedule allows time for set-up and removal of materials.

D. No observers are allowed in the event or preparation rooms during heats, although they are allowed to sit in the audience of the performance during the finals. No talking or gesturing is permitted. Observers are NOT allowed to enter or leave during a presentation. THERE IS NO APPLAUSE UNTIL THE PRESENTATION HAS CONCLUDED. No form of visual recording (such as photographic or video) or audio recording by any observer (including family, friends, or advisors of the participants) is permitted.

E. A semifinalist list in random order is posted.

F. Semifinalists report to the event area at the time and place stated in the conference program. Each semifinalist will sign up for a speaking time.

G. Semifinalist presentations follow the same guidelines as above.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. Each presentation must be the result of the participant's own efforts.

B. The topic for the Prepared Presentation event is the published theme of the current year's conference. Information about technology and TSA is appropriate as long as it relates to the published theme.

C. The presentation must include the use of audio and/or visual media materials.

D. Examples of the audio/visual materials may include but are not limited to:

1. Charts and graphs
2. Posters
3. Displays
4. Flip charts
5. Transparencies
6. Models
7. PowerPoint

E. Participants are not allowed to hear other participants' presentations.

F. It is the participant's responsibility to provide any audio/visual equipment needed for the presentation. If a participant is using equipment that requires electricity, s/he must bring a 25'

extension cord. National TSA does not provide a screen or white background for this event.

G. An easel and a table [approximately six feet (6') long], and a podium will be provided by national TSA for participant use, as needed.

H. Participant scores are penalized one (1) point per ten (10) second interval for speaking over or under the allotted time. The same penalty is used for set-up and takedown. Time commences when the presentation begins.

EVALUATION

Evaluation is based upon the quality of the presentation and the appropriate use of audio visual materials.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will use audio/visual materials to enhance the effectiveness of their presentation. Suggested leadership lessons: *Listening Skills* and *Put It Together*
- CREATIVE THINKING — Students will use creativity to present original thoughts. Suggested leadership lessons: *Invention Mishap* and *The Leadership Chronicles*
- EVALUATION — Students will practice and revise both their presentation and their presentation techniques. Suggested leadership lessons: *Evaluation Imagination* and *Your Dream Car*

Additional leadership skills promoted in this event: critical thinking organization, problem solving, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Broadcast media specialist
Lawyer
Management consultant
Motivational speaker
Public relations executive

PREPARED PRESENTATION
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for the initial round of presentations, two (2) or more per event room

C. Evaluators for the semifinalist round of presentations, preferably some who did NOT judge the initial round, two (2) or more

D. Timekeeper, one (1) per event room and one (1) for the semifinalist round

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Marking pens or pencils for each evaluator
   6. Semifinalist list for posting
   7. One (1) stopwatch for each event room
   8. Results envelope

B. Podium and easel for participant use

C. Tables and chairs for three (3) evaluators

D. Chairs for audience

E. One (1) table, approximately 6' long, for participant's use

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, screens, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

F. Inform participants of their heat assignment, order of speaking, and pertinent procedure.

G. Take the first participant to the event room and provide four (4) minutes for set-up of materials. The event coordinator or assistant introduces the participants by entry number only. No nametags or clothing that give any indication of the hometown, school, or chapter are allowed.

H. Approximately every ten (10) minutes, the holding room monitor sends a participant to the event coordinator or assistant in the event room.

I. The participant is allowed three (3) minutes to remove all materials.

J. Following the last participant's presentation, the evaluators total their scores, making adjustments for time penalties.

K. Secure the evaluators' signatures on their score sheets.

L. Following the preliminary heats, evaluators determine the semifinalists from their particular heats and forward these to the coordinator. The coordinator lists the semifinalists from each heat on a semifinalist list in random order that is submitted to the CRC chairperson for posting; twelve (12) semifinalists will be posted. Repeat the presentation process above for the semifinalists.

M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

PREPARED PRESENTATION

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Content (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Introduction (X1)	The introduction is weak, with little effort made to highlight the theme and/or to generate interest and enthusiasm for the topic.	Sufficient effort is evident but the introduction lacks emphasis and fails to create a level of interest.	The introduction is effective, stimulating and inspires observers to "want more."	
Body (X1)	The body of the speech is poorly organized; the content does not properly cover or represent the concepts being presented.	The body of the speech is not presented clearly or effectively; it is not interesting or memorable.	The body of the speech is clearly and effectively presented in an exceptionally interesting manner; the presentation is memorable.	
Conclusion (X1)	The conclusion fails to summarize or clearly clarify the information presented in the speech.	The conclusion does not fully summarize the content and theme of the speech.	The conclusion is effective, interesting, and memorable; it fully brings finality to the presentation.	
			SUBTOTAL (30 points)	

Stage Presence (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Appearance (X1)	Participant's appearance is unprofessional, sloppy, and inappropriate.	Participant's appearance is adequate, appropriate, and professional, but not exceptional.	Participant's appearance is exceptional, appropriate, and professional.	
Confidence (X1)	Participant appears nervous during presentation; poor posture, poor eye contact, and lack of confidence are evident.	Participant is generally poised, displays eye contact, and is confident, with little sign of nervousness.	Participant "commands" the room, and is exceptionally poised, confident, and positive.	
Articulation (X1)	Participant conveys an inconsistent use of proper grammar, word pronunciation, acceptable pitch and tone.	Participant generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	Smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch are used throughout the speech.	
			SUBTOTAL (30 points)	

Organization (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Effective and quality presentation (X1)	The speech is poorly prepared, not interesting, and not representative of the stated theme.	The speech is adequate in most areas, but exceptional in none of them.	The speech is exceptional and memorable; the observer can easily understand and relate to the theme.	

PREPARED PRESENTATION (continued)				
Organization (40 points) (continued)				
Knowledge of material (X1)	Minimal factual support is evident in the speech; the content of the speech does not relate to the theme; the participant does not convey understanding of the theme.	Factual support is provided in the speech, but the support does not always relate to the theme or match the content of the speech.	Factual support is provided in the speech; it has a strong relationship to the theme and enhances the content of the speech.	
Organization (X1)	The speech is difficult to follow or understand.	The speech is adequately organized but predictable.	The speech is organized and easy to follow; the delivery is exceptional.	
Use of audio/visual materials (X1)	Audio/visual materials are present, but they are unprofessional and/or inappropriate and do not enhance the content of the speech.	Audio/visual materials are adequate, but they are not exceptional; audio/visual materials do not always relate to the theme of the speech.	Audio/visual materials are exceptional and enhance the theme and content of the speech without distracting the observers from the overall content of the speech.	
			SUBTOTAL (40 points)	

Time Deductions			
One point per ten-second interval is to be deducted for speaking under the three minutes or over the five minutes allotted for the presentation. The same one point per ten-second interval penalty applies to more than four minutes for set up and three minutes for take down. Presentation time commences when the presenter begins speaking.			
Total time for speech		**Speech deduction**	
Total time for set-up		**Set-up deduction**	
Total time for take down		**Take down deduction**	
		TOTAL TIME DEDUCTIONS	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

PROMOTIONAL GRAPHICS

OVERVIEW

Participants develop and present a graphic design that can be used to promote participation in TSA competitive events. The design will promote competitions offered in the TSA competitive events guide. Participants will choose one (1) of the three (3) competitions listed below for the given year.

For 2013 the options are:

Animatronics
Chapter Team
Music Production

For 2014 the options are:

Flight Endurance
System Control Technology
Webmaster

☑ TSA hopes that by including current year competition options here, you have plenty of time to do a great job on your entry.

PURPOSE

Participants have the opportunity to use computerized graphic communications layout and design skills in the production of a promotional resource for TSA.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one (1) entry each.

TIME LIMITS

Entries must be started and completed during the current school year.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants construct and submit their entries via email to prographicentry@tsaweb.org by midnight on June 10. Email

verification of each entry is made by June 15. The subject line of the email must be: Promotional Graphic Entry for [the student registration number as found on the registration confirmation]. Example: Promotional Graphic entry for 100001. Do not include the student or school name in the email.

B. Entries are reviewed by evaluators prior to the conference.

C. Ten (10) finalists are announced at the awards ceremony.

REGULATIONS

A. The Promotional Graphics event is an individual event. No recognition is given for a group effort.

B. The entry must be submitted as a PDF, following the directions found in Procedure A.

C. The design must meet the following criteria:

1. The design (graphic) may not exceed 20cm (8 inches) x 25cm (10 inches). The design must be created either in portrait or landscape layout and must be set up as letter size (8½" x 11").
2. The design must be produced using a desktop publishing system, e.g. Photoshop, Corel Draw, PageMaker, Quark-Xpress, Harvard Graphics, etc.
3. The design must include a minimum of three (3) colors.
4. The design must be original and reflect, interpret, or in some other way communicate the essence of one (1) of the three (3) competitive event options provided for the given conference year.
5. The design must include the following text that may or may not be incorporated as an integral part of the illustration, using either original or traditional type fonts:
   a. Technology Student Association
   b. The **exact** official competitive event name, as listed in the current TSA competitive events guide.
6. The words "Technology Student Association" are part of the emblem design. Use of the emblem, therefore, can meet the requirement above (5a.) but entries also may include "Technology Student Association" separately.
7. The design also must incorporate one (1) complete, unaltered full color (red, white and blue) version of the official TSA emblem. (As long as the unaltered color copy of the official TSA logo is present, other TSA emblems or portions of the emblem that have been altered in some way may be integrated into the design.) The unaltered TSA emblem can be used only in accordance with trademark policies that appear on the national TSA web site (www.

☑ Read the regulations carefully to avoid these common rules violations:

- theme not included
- incorrect theme used
- design exceeds 8" x 10"
- unaltered TSA logo not included
- copyrighted art permission not included
- proof of public domain art not included
- school, student or state name included
- signed consent form for photos of individuals not included

☑ According to TSA's trademark policy, "when an emblem of the organization is reproduced, it should be an exact replica of the emblem as registered through the collective trademark."

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

tsaweb.org). Failure to follow the information provided in the policies results in disqualification. The TSA logo may be used with or without the registered trademark symbol (the circle R).

8. A maximum one (1) page typed technical explanation of the design process, including software programs and artwork/ graphic/photo sources used in the production of the graphic; an explanation of the designer's inspiration; and an explanation of how the graphic relays the theme must be included. This information must be in .pdf format and submitted electronically with the promotional graphic, the typed cited work sheet and any consent forms or permission to use copyrighted art. These files should be merged to create a single PDF file entry with the graphic as the first page of the PDF.
9. All entries must be the original work of the entrant. Computer-generated type fonts and public domain computer clip-art may be used. All ideas, text or images from sources other than the designer must be cited (**copyrighted or not**). Cited works should be in MLA format and appear on one (1) page following the one (1) page description of the design process (B.8). If copyrighted material is used, separate written permission must be included as well. Failure to follow this procedure results in disqualification. If the artwork is completely original, this must be stated in the description (B.8). These files should be inserted in the PDF to create a single file entry PDF with the graphic as the first page of the PDF.
10. If the design entry contains images of people, proof of consent must be turned in with the entry. Minors require parental consent. (See Photo/ Film/ Video Consent and Release form.) These files should be merged to create a single PDF entry with the graphic as the first page of the PDF.

D. The winning designs for Promotional Graphics may be used on promotional posters, or in publications.

E. All entries become the property of TSA, Inc. and will not be returned after judging.

EVALUATION

Evaluation is based on the criteria outlined in the official rating form.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will communicate the event theme effectively. Suggested leadership lessons: *Promote It* and *Put It Together*
- ETHICS — Students will follow copyright procedures. Suggested leadership lessons: *Ethics Articles* and *Ethics Scenario*
- EVALUATION — Students will conduct ongoing evaluation of their entry. Suggested leadership lessons: *Seven Components of Effective Evaluation* and *Your Dream Car*

Additional leadership skills promoted in this event: decision making, organization, problem solving, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Advertising executive
Graphic designer
Marketing manager
Printer
Public relations manager

PROMOTIONAL GRAPHICS
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for check-in, two (2)

C. Evaluators for displays, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Results envelope

RESPONSIBILITIES

A. Before the registration deadline, review all of the event rules.

B. Students will submit their entry to prographicentry@tsaweb.org. As emails are submitted save each file with the student's conference identification number. A confirmation of receipt of entry should be sent to each participant no later than June 10.

C. Provide student entry files and a copy of the official rating form to judges electronically. All results should be sent by email back to the coordinator.

D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

E. Total the scores for each qualified entry to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.

F. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms to the CRC room.

PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

Name of minor in images (please print)

Name of minor's parent/guardian (please print)

Name of adult in images (please print)

Parent/guardian or adult's signature (as applicable)

Date

Participant/Team ID# _____

PROMOTIONAL GRAPHICS

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Technical Explanation (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Programs and processes (X1)	Explanation lists, but does not describe, the programs or processes used in the creation of design.	Description adequately lists and describes most of the programs and processes used in the design creation.	All programs and processes used for the design creations are listed and fully explained.	
Inspiration of design theme (X1)	There is little attempt to describe the inspiration for the design or how it reflects the theme.	The explanation provides a weak description of the design inspiration and makes an attempt to show how it reflects the theme.	The origins of the inspiration for the design are fully described and the graphic clearly reflects the theme.	
Grammar and spelling (X1)	Many misspelled words and grammatical errors appear throughout the work.	A few misspelled words and/ or some instances of improper grammar are evident.	Proper grammar and spelling are evident throughout the work.	
Resources and references (X1)	Items are not cited in MLA format.	Most items are cited in MLA format.	All items are cited in MLA format	
			SUBTOTAL (40 points)	

Design Concept (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Graphic design (X1)	The design has no connection to or does a poor job of conveying the essence of the TSA competitive event.	The design exhibits some connection to the selected TSA competitive event.	The design is appropriate and effectively portrays the selected TSA competitive event.	
First impressions (X1)	The design is messy and projects an unfavorable impression.	The design is neat but includes some details that distract from the overall quality.	The design is eye catching and makes the viewer want to continue looking; attention to detail is obvious.	
Use of color (X1)	Fewer than three colors, which clash or distract from the graphic, are used.	The minimum three colors are used, but the result lacks cohesive appearance.	The effective choice of color creates an effective and appealing graphic.	
Fonts (X1)	Font choice, text size and placement are ineffective in creating an aesthetically pleasing design.	Font choice is appropriate, but some text sizes and placement detract from the overall aesthetics of the design.	Font choice and size are appropriate, and the location of text is effectively incorporated in to the aesthetics of the design.	
			SUBTOTAL (40 points)	

PROMOTIONAL GRAPHICS (continued)				
Design Elements (40 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Balance (X1)	There is little or no evidence of balance in the design.	Balance in the design is evident but minimal.	The creative and effective use of balance is evident in the design.	
Dominance (X1)	Eyes are drawn away from what should have been the focal point by one or more components of the design.	The design is somewhat effective in drawing attention to a key area of the design, but some elements create distraction.	The design is completely effective in drawing the viewer's eyes to the focal point of the design.	
Proportion (X1)	Elements of the design are not in appropriate proportion and scale.	Most of the elements of the design are set in appropriate proportion and scale.	The final design exhibits excellent attention to proportion and scale.	
Unity (X1)	The design is not well unified.	Most of the elements selected work together to create unity in the design.	All of the elements selected work effectively together to unify the design.	
			SUBTOTAL (40 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (120 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

OVERVIEW

SciVis refers to Scientific and Technical Visualization, the graphical representation of complex scientific concepts. Participants develop a visualization focusing on a subject or topic from one (1) or more of the following areas: science, technology, engineering or mathematics.

PURPOSE

Participants have the opportunity to use computer graphic tools and design processes to communicate, inform, analyze and/or illustrate a topic, idea, subject or concept. Sound may accompany the graphic images.

☑ Scientific visualization has come a long way in recent years, and with this event TSA members can demonstrate their skills in using sophisticated, advanced technology to illustrate ideas of their choice.

ELIGIBILITY

Participants are limited to three (3) teams per state, one (1) entry per team. Collaborative work is strongly encouraged, but a team of one (1) member is permitted.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. The visualization should not exceed three (3) minutes in length. There will be a three (3) point deduction for each fifteen (15) seconds over the three (3) minute length.

C. The visualization time length is calculated from the start of the first image or sound to the end of the last image or sound.

D. Semifinalists are given ten (10) minutes to present their visualization to the judges.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. No more than two (2) representatives from each semifinalist team may report to the event area for the interview at the time and place stated in the conference program.

D. Each semifinalist team explains its notebook to the evaluators, discussing the purpose, value, research and design, and development process of its work.

E. Each visualization must advance automatically once it has been opened and started by evaluators.

F. Visualizations must be turned in on a CD or DVD, in either MPEG or Quick Time file formats. No high-definition DVD, CD, or Blu-ray disc formats will be allowed. No USB drives will be accepted.

REGULATIONS

A. The visualization may be an animation, such as a biological cell dividing, or it may consist of a series of related static images, such as graphics and charts used in the study of scientific phenomena. No posters or models will be accepted. All work must be included in the notebook and on the DVD/CD.

B. The visualization should not exceed three (3) minutes in length. There will be a three (3) point deduction for each fifteen (15) seconds over the three (3) minute maximum length. For example: A visualization that runs 47 seconds beyond the three (3) minute limit will receive a deduction of nine (9) points.

C. Sound may accompany the visualization but is not required.

D. All entries must be the original work of the participant or team. Where applicable, all ideas, text, images, and sound from other sources must be cited. If copyrighted material is used, proper written permission must be included. Failure to follow this procedure results in disqualification. Absolutely no purchased content may be used in any part of the visualization. (Purchased content includes, but is not limited to, texture, models, and royalty free music.)

E. The presentation team may not exceed two (2) members.

Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

F. An 8½" x 11" notebook [standard three (3)-ring binder] and CD/DVD are turned in at the time and place stated in the conference program.

G. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Purpose of visualization; one (1) page
4. Hand-sketched storyboard that documents the flow and progression of the visualization with written notes; special effects, audio cues, dialogue, transitions, and scene duration should be incorporated into the storyboard; pages as needed
5. Written description of what the visualization illustrates or demonstrates; one (1) page
6. List of references that includes sources for materials, copyrighted and otherwise; pages as needed. The term “Fair Use” and similar terms are not acceptable citations when creating the list of references.
7. Permission letters for copyrighted material; pages as needed
8. List of software and hardware used in the development of the visualization; one (1) page
9. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (See Plan of Work Log); one (1) page
10. Completed and signed Student Copyright Checklist; one (1) page

H. All entries become the property of TSA, Inc. and will not be returned after judging.

EVALUATION

Please refer to the official rating form for more information.

NOTES

You can learn more about SciVis by visiting this web site:

www.ncsu.edu/scivis

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will convey scientific concepts through aesthetically effective illustrations. Suggested leadership lessons: *Promote It* and *Put It Together*
- CREATIVE THINKING — Students will think creatively to develop a unique entry. Suggested leadership lessons: *Color Hunt* and *Creative Techniques*
- CRITICAL THINKING — Students will analyze their entry in order to make improvements. Suggested leadership lessons: *Critical Thinking Techniques* and *Put Yourself In Their Shoes*

Additional leadership skills promoted in this event: evaluation, organization, problem solving, self-esteem, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer animator
Game designer
Instructional technologist
Software engineer

TECHNOLOGY STUDENT ASSOCIATION
PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

1) Does your solution to the competitive event integrate any music? YES _____ NO _____

If NO, go to question 2.

If YES, is the music copyrighted? **YES _____ NO _____**

If YES, move to question 1A. If NO, move to question 1B.

1A) Have you asked for author permission to use the music in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission (OR use royalty free/your own original music) and if permission is granted, include the permission in your documentation.

1B) Is the music royalty free, or did you create the music yourself? If YES, cite the royalty free music OR your original music properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any music into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of music is done so with proper permission and is cited correctly in the student's documentation.

2) Does your solution to the competitive event integrate any graphics? YES _____ NO _____

If NO, go to question 3.

If YES, is the graphic copyrighted, registered and/or trademarked? **YES _____ NO _____**

If YES, move to question 2A. If NO, move to question 2B.

2A) Have you asked for author permission to use the graphic in your solution and included that permission (letter/form) in your documentation? If YES, move to question 3. If NO, ask for permission (OR use royalty free/your own original graphic) and if permission is granted, include the permission in your documentation.

2B) Is the graphic royalty free, or did you create your own graphic? If YES, cite the royalty free graphic OR your own original graphic properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any graphics into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics is done so with proper permission and is cited correctly in the student's documentation.

3) Does your solution to the competitive event use another's thoughts or research? YES _____ NO _____

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? If YES, this is the end of the checklist.

If NO, properly cite the thoughts/research of others in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any thoughts/research of others into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation.

SCIVIS
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistant for check-in, one (1)

C. Evaluators, two (2) for every twenty (20) entries or fraction thereof for initial review of entries; two (2) or more for semifinalist interviews

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms, one (1) set for each event evaluator
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Pens for evaluators
   6. Notepads for evaluators
   7. Calculators, one (1) for each event evaluator
   8. Semifinalist list for posting
   9. Results envelope

B. Tables for entries

C. Tables and chairs for initial evaluators

D. Tables and chairs for semifinalist evaluators and contestants

E. One (1) extension cord and one (1) power-bar with surge protection per evaluation team

F. One (1) computer with monitor and CD/DVD ROM drive for each evaluation team for initial evaluation

G. One (1) computer with monitor and CD/DVD ROM drive for semifinalist evaluations

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. At least one (1) hour before the evaluation of entries is to begin, meet with your evaluators and check-in personnel to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the CRC event manager before the evaluation begins.

D. Notify the event manager immediately of any team handing in a notebook and CD/DVD that is not on the entry list. Determine if the team in question is properly registered.

E. Evaluators independently assess the entries.

F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

G. The number of evaluators depends upon the number of entries. Each group of evaluators averages its scores to determine the top four (4) entries from the initial group of twenty (20) entries. The top four (4) entries from each evaluator group are then reviewed by a different group of evaluators. These four (4) scores are then averaged to determine the twelve (12) semifinalist teams to be interviewed.

H. The coordinator posts a list of the twelve (12) semifinalist teams in the appropriate location.

I. The coordinator lists the semifinalist teams in random order on new rating forms that are given to the semifinalist evaluators.

J. Semifinalists report to the event area at the time and place stated in the conference program. Each semifinalist team signs up for a time to present its visualization. During the presentation and interview, the semifinalist team representatives will explain their work and answer any questions the evaluators may ask.

K. Semifinalist evaluators evaluators independently assess the twelve (12) semifinalist teams.

L. Evaluators average their scores to determine the ten (10) finalists and their ranking. Evaluators discuss and break any ties.

M. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

N. Collect all CD/DVDs and notebooks and give them to the event manager.

O. If necessary, manage security and the removal of equipment and materials from the area.

Participant/Team ID# _____

SciVis

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Notebook (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation G (X1)	Notebook is unorganized and/or missing three or more components.	Notebook is missing two components, and/or is loosely organized.	One or no components are missing, and content and organization are clearly evident.	
Purpose and description (X1)	The purpose and description of the visualization idea generation are unclear, and/or many grammatical errors are present.	The purpose and description are explained appropriately, but they contain some grammatical errors, and/or they are not written concisely.	The purpose and description of visualization are clear and concisely written, with no/few grammar mistakes; the viewer is interested.	
Storyboard (X1)	The hand-sketched storyboard is sloppy, seems to have been thrown together after the creation of the visualization, and/or it does not correlate with the visualization.	The storyboard is drawn appropriately and largely correlates with the completed visualization.	The storyboard is of exceptional aesthetic and artistic value and clearly correlates with the visualization.	
			SUBTOTAL (30 points)	

Visualization (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Communication of visualization (X1)	It is difficult to understand the solution being communicated; an illogical explanation is presented.	The solution is communicated, but thoughts are not organized and/or are not concise.	The solution is communicated in an organized, clear, and concise manner.	
Creativity (X1)	The visualization lacks creativity; no, or very few, design principles are integrated in the visualization.	Some elements of creativity are expressed, but essential design principles are missing or they are not used effectively.	The visualization exudes creativity; essential design principles and elements are integrated.	
Aesthetics and artisanship (X1)	Unorganized, sloppy work is evident; the visualization seems to be an afterthought and/or thrown together.	An organized presentation of essential issues in a logical format is evident.	An exemplary use of layout and design principles to logically communicate important data is evident.	
Graphical representations (X1)	Graphical representations do not help to clarify documentation, or they are of little significance to the issues.	Graphical representations are appropriate and help supplement the documentation by providing clarity to issues.	Graphical representations are of excellent quality; graphics are cited if they are not original; graphics clarify abstract concepts.	
Originality (X1)	The visualization lacks imagination, originality and artistic detail.	The visualization is effective and innovative, but it lacks depth.	The visualization is inspiring, inventive, resourceful and totally motivating.	
			SUBTOTAL (50 points)	

SciVis (continued)				
Semifinalist Interview (20 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization and clarity (X1)	The team seems unprepared and unorganized for the interview; the team's presentation is full of illogical thoughts that lack clarity.	The team is prepared for the interview but is somewhat disorganized in its presentation; team's presentation thesis is, for the most part, logical and/or clear.	The team's presentation and interview are well organized; a concise, logical, clear explanation of thesis and pertinent issues is evident.	
Articulation (X1)	Participants are verbose and illogical in their interview, and they use many "uhs, ums, hmms," etc.	Participants are logical and well-spoken in their interview responses, with few "uhs, ums, hmms," etc.	Participants are well spoken, distinct, and clear in their interview responses, with no, or very few, "uhs, ums, hmms," etc.	
			SUBTOTAL (20 points)	
Time Deductions				
There will be a three (3) point deduction for each fifteen (15) seconds over the three (3) minute maximum length.				
			Total time for visualization	
			Total visualization time deduction	
			TOTAL TIME DEDUCTIONS	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

STRUCTURAL ENGINEERING

OVERVIEW

Participants work as part of a team on site with supplied materials to build a model of a structure that is destructively tested to determine design efficiency.

A box girder beam, which is a rectangular prism, is the designated structure for 2013 and 2014.

PURPOSE

Working as a team, within time and material constraints, participants will construct a box girder beam that reflects knowledge of engineering design and construction concepts.

ELIGIBILITY

Participants are limited to one (1) team of two (2) members per chapter, one (1) entry per team.

TIME LIMITS

A. All work must be completed and checked in during the two (2) hours and thirty (30) minutes allowed for design and construction.

B. The time begins when the length of the structure is given.

C. Participants with time conflicts must present a written explanation to the event coordinator of the conflict at least one (1) hour before the construction time printed in the conference program. Work must start during the time scheduled for the event.

ATTIRE and SAFETY EYEWEAR

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

Students are required to wear safety-approved eyewear during the fabrication and structure check-in phase of this event. Prescription eyewear will need to have side shields to be considered safety eyewear. Should a team member remove the eyewear, s/he will be

☑ Structural Engineering assignments change every two years and can be bridges, towers, beams, trusses, etc. A box girder beam is the designated structure for 2013 and 2014.

reminded once to replace it. If there is a second infraction, the team will be asked to leave the competition. Sunglasses are not suitable eyewear.

PROCEDURE FOR FABRICATION

A. Participants report to the event area at the time and place stated in the conference program.

B. Students are required to provide and wear safety glasses for this event.

C. Teams are required to provide their own tool box, with identification (school name and address), which must include the following:

1. two cutting devices; the team will check in and use one (1) or two (2) of the following cutting devices from the list below:
   a. a modeling knife or x-acto knife
   b. a miter box and saw
   c. a blade and anvil cutter
   d. scissors
   e. another approved cutting device - none may be electric
2. one (1) ounce of "super glue"
   Note: cyanoacrylate (CA) glue comes in a variety of thicknesses. A team may elect to use one half (½)-ounce of thin CA and one half (½)-ounce of filler CA, for a total of one (1) ounce of adhesive. The glue must be in the original bottle with a manufacturer's label, which is clearly marked with the capacity. One half (½) ounce in a one (1) ounce bottle will be considered one (1) ounce.
3. a single two (2)-ounce bottle of accelerator [pressurized, aerosol applicators are not allowed; a pump or drip applicator of two (2) ounces or less is acceptable]
4. straight pins as needed
5. simple clamps such as clothespins, binder's clips or twisty ties
6. a cutting surface that fits in the approved space and prevents modeling knives from marring the table top
7. a single 12" ruler or measuring scale
8. emery boards of various grits or sand paper or sanding blocks
9. safety glasses for team members
10. marking device (e.g., pen, pencil, etc.)
11. Linesman pliers
12. One (1) roll of masking tape

D. Teams will pick up the following supplied materials:

1. Consumable supplies; these are the materials supplied to make the structure. Only materials supplied by the

☑ Participants should practice, practice, practice with CA adhesive! It adheres quickly and does not pull free if incorrectly placed.

coordinator may be used to fabricate the structure. The basswood may be withheld until the drawing is complete.
   a. Twenty (20) feet of 3/32" x 3/32" basswood
   b. Two sheets of 8½" x 11" copier paper
2. Planning and fabrication supplies. The following materials may **not** be part of the structure submitted for testing:
   a. 11" x 17" paper with ¼" grids for sketching the structure
   b. Pin board, as provided
   c. A sheet of wax paper
   d. Structure label

E. Students are seated in teams of two (2) by a monitor.

F. The construction procedure is explained.

G. The box girder beam is a rectangular prism.
1. A random drawing of twelve, fourteen or sixteen inches (12", 14", 16") determines the length.
2. The continuous width will be two inches (2").

H. The length of the structure is recorded, the ending time (which allows 2½ hours for construction) is set, and then both are announced.

I. During the construction, the teams must comply with the following regulations.
1. The copy paper skin will be applied to the exterior of the box beam girder.
   a. It may not be sandwiched between two (2) basswood members.
   b. The ends of the beams will be left open for inspection of the internal bracing and fabrication.
   c. The skin will be attached with glue, but coating of the skin will be penalized. Any glue spot larger than the size of an American quarter will be considered a rules infraction.
   d. The joints of the copy paper skin will not include an overlap greater than one quarter of an inch (¼"). There will no greater than five (5) overlap joints in the structure.
2. The beam must rest on the top of the abutments and may not touch the face of the abutments.
3. No part of the beam may extend below the plane of abutment.
4. The center of the beam must provide clear passage for the one half inch (½") test rod.
5. Lamination is defined as:
   a. Two (2) pieces of basswood glued together surface to surface with the grain running parallel.

b. The cross section of laminated beam at any point in the continuous lamination will be a rectangle of 3/32" by 3/16".

6. Laminated members may not be jointed to other laminated members except at 90 degree angles

J. Remaining materials are distributed to each team when the sketch is completed.

K. Participants may leave early, but they must complete check-out as directed.

L. All work stops at the coordinator's signal.

M. Teams return all supplied items as directed.

N. The team must label the structure with the team registration number.

O. Structures are allowed to dry in a secure area until time for testing.

P. Structures are checked for rules violations, and violations are recorded on evaluation forms.

Q. Structures are weighed before testing.

R. Testing is completed by evaluators and is open to all conference participants.

S. Structures are destructively tested to determine failure weight. The coordinator and CRC manager will select the testing device and its use.

T. The efficiency rating of each structure is calculated and ranking is determined.

U. Teams failing to comply with coordinator or monitors' directions receive a penalty of 20% of the team's score.

V. Videotaping of the testing of a participant's structure is permitted by the participant or his/her representative.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

PROCEDURE FOR EVALUATION

A. The structure is weighed before testing, and the weight is recorded on the evaluation form.

B. The test block will be placed on top of the beam. The test block will be two and one quarter inches (2¼") in width and six inches (6") less than the drawn length. The judges will need test blocks that are six inches (6"), eight inches (8") and ten inches (10") long by three quarters of an inch (¾") thick. Each block will have a one half inch (½") hole in the center.

C. An increasing load is applied to the structure via the test block until the structure fails.

D. The failure weight is recorded on the evaluation form. Failure weight is the greatest weight recorded during testing before failure of the structure.

E. The efficiency is determined by the failure weight x 454, divided by the weight of the structure in grams.

F. The efficiency is rounded off to three (3) decimal places and recorded on the evaluation form.

G. The highest numeric efficiency is the winner. In case of an efficiency tie, the greatest weight held by the tied entries will be declared the winner.

H. Failure to comply: If a structure fails to comply with any regulation, a penalty reduction of 20% of the greatest weight held in the contest is subtracted from the team's failure weight.

I. Structures are not to be tested if:

1. there are two (2) or more rules violations determined before testing
2. the structure cannot be placed on the tester
3. the testing hook cannot be placed in the center of the structure
4. straight pins are left in the structure
5. there is a failure to wear safety eyewear

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- EVALUATION — Students will work to eliminate the failure of their entry. Suggested leadership lessons: *Evaluation Imagination* and *Evaluation Methods*
- PROBLEM SOLVING — Students will work under time and material constraints to build their entry. Suggested leadership lessons: *Effective Brainstorming* and *Finding The Right Way*
- TEAMWORK — Students will prepare in advance to work together effectively on site. Suggested leadership lessons: *Teams* and *Stepping Stones*

Additional leadership skills promoted in this event: creative thinking, critical thinking

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Architect
Civil engineer
Engineering technician
Mathematician
Structural iron and steel worker

STRUCTURAL ENGINEERING
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Construction monitors, a minimum of one (1) per twenty (20) teams

C. A timekeeper

D. Evaluators to qualify structures after construction, two (2) or more

E. Destructive test evaluators, preferably five (5)
   1. One (1) to position the structure on the testing device
   2. One (1) to weigh the structure and record structure weight
   3. One (1) to record failure weight
   4. One (1) to bring the structure to the testing location
   5. One (1) to remove and store the structure following testing

MATERIALS

The event coordinator will supply the basswood, note cards, copy paper, pin boards, wax paper, 11" x 17" graph paper with ¼" grid and structure label. No substitutions or alternate supplies are permitted. The event coordinator will address any special needs before the beginning of check-in.

A. Coordinator's box, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries, with finalist report
   4. List of evaluators/assistants
   5. Results envelope

B. A sheet of poster board and marker to post the length of the beam and end time

C. Construction tools per team, to be used and returned after construction:
   1. Pin board as supplied, but generally a one-foot by two-foot (1' x 2') piece of fiber or foam board
   2. Grid paper ¼" x ¼" grid on 11" x 17" paper for the sketch of the structure

3. Wax paper to cover the pin board

D. Supplies per team to be used to make the structure:
   1. twenty feet (20') of $^{3}/_{32}$" x $^{3}/_{32}$" basswood
   2. two (2) pieces of copier paper

E. The testing equipment, selected by the event coordinator, provides a downward pull and records the peak force in pounds.

F. Evaluation and recording equipment:
   1. Gram scale
   2. Tape measure or 2' rule
   3. Evaluation gauges
   4. Calculator or computer to perform calculations
   5. Evaluation forms as provided by the event coordinator, one (1) per entry
   6. One (1) American quarter dollar coin

G. Site requirements:
   1. Construction session:
      a. Tables and chairs suitable for cutting and gluing
      b. A work area that is at least 2' x 3' for each team (suggested space is two teams per 6' x 2' or 8' x 2' table)
      c. One (1) chair per registered participant
      d. Tables for equipment check-out and check-in
      e. Tables and chairs for evaluators
      f. Area securable for drying of entries and storage of supplies
   2. Testing session:
      a. Tables for storage of structures
      b. Table for weighing
      c. Table for testing
      d. Table for recording
      e. Tables for storage of failed structures
      f. Chairs for spectators
      g. Barricade to separate testing area from spectators

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's box. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures,

and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Set up check-in.

E. Set up materials and supplies check-out.

F. Plan the finished structure check-in, designate an area for structure storage, plan the materials check-in, and plan the participant check-out.

G. Administer construction session procedure with participants.

1. The construction session is not a spectator event. No one other than participants will be allowed in the construction site.
2. Check-in may begin before the time printed in the conference program and continues until all teams that have arrived on time have been checked in and seated. Even if all teams are in place, the event does not start before the posted time.
3. Both members of the team need to be present during check-in.
4. No team begins late unless its members have complied with this statement from Time Limits: Participants with time conflicts must present a written explanation to the event coordinator of the conflict at least one (1) hour before the construction time printed in the conference schedule. Work must start during the time scheduled for the event.
5. The recorder checks the registration number and records it on the entry list.
6. Monitors check out supplies and materials.
7. Monitors assign team construction locations.
8. When all teams are seated and the scheduled event time has arrived, the event coordinator will select the length of the structure by random draw and announce dimension details. Post the length on the poster board.
9. The construction time of two (2) hours and thirty (30) minutes begins when the dimensions are announced. Post the completion time.
10. Monitors confirm that the sketch is completed before each team begins construction.
11. No additional supplies are provided during the event.
12. Monitors call “time” to end the construction session two (2) hours and thirty (30) minutes after the dimensions are announced. Teams that fail to comply are penalized 20% of the total earned points.

H. Participant check-out:

1. Participants must leave the assigned area clean.

2. Participants check in excess supplies as directed by the monitors.
3. Participants place the structure in the storage area with the evaluation form and sketch as directed by monitors. The structure must be marked with the team number on the provided tag to insure proper evaluation and recording of results.
4. Participants leave the construction site.
5. The structures are secured by the monitors and allowed to dry for a minimum of twelve (12) hours from the end of the construction session.

I. Evaluation

1. With the help of the evaluators, check structures for compliance to specific regulations.
2. Structures that are in compliance are tested without penalty.
3. Noncompliance is noted on the evaluation form and the penalty is assessed.
4. If a structure has two (2) noncompliance marks, it is not tested.
5. Immediately following the testing session, participants and advisors must be present to break structures that did not qualify for testing.
6. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

J. Testing session procedure

1. The testing session is a spectator event. The structure storage area and evaluation area are not open to spectators.
2. The testing device is set up and calibrated one (1) hour before the time to begin testing.
3. Monitors bring the structures to the testing area.
4. Each structure is weighed on a gram scale and the structure's weight is recorded on the evaluation form. The load plate weight is recorded and subtracted to determine the material weight.
5. The structure is destructively tested using a breaker block.
6. The failure weight is recorded on the rating form.
7. The structure is removed from the testing area by a monitor and stored with the drawing.
8. The efficiency is figured and recorded on the evaluation form.
9. Structures are not returned to participants after testing.

K. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

Participant/Team ID# _____

STRUCTURAL ENGINEERING

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Place an x in the noncompliant or compliant box, as appropriate for each regulation

Qualification Regulations

REGULATIONS	NONCOMPLIANT		COMPLIANT	
Team of two	Only one team member is present.		Both team members are present.	
Attire	Attire does not meet requirements.		Attire is appropriate.	
Safety eyewear	Warnings about eyewear were issued.		No warnings about eyewear were issued.	
Tools and fabrication supplies	Inappropriate tools or supplies are brought to the event.		Appropriate tools and supplies are brought to the event.	

Construction Regulations

REGULATIONS	NONCOMPLIANT		COMPLIANT	
Time limits	The beam is not completed during the specified time.		The beam is completed within the specified time.	
Beam identification	The identification sticker is not attached.		The identification sticker is attached.	
Sketch	A sketch is not submitted.		A sketch is submitted.	
Length of beam	The length of the beam is .125 inch greater or less than the announced construction length.		The length of the beam is within the .125 inch tolerance of the announced construction length.	
Width of beam	The width of the beam is .125 inch more or less than the two-inch (2") stated construction width.		The width of the beam is within the .125 inch tolerance of the stated two inch (2") construction width.	
Height of beam	The height of the beam is .125 inch more or less than the two-inch (2") stated construction height.		The height of the beam is within the .125 inch tolerance of the stated two inch (2") construction height.	
Copy paper skin	The end is closed; joints where overlapping are wider than .25 inch; glue is greater than the size of a USA quarter.		Paper skin applications are correct.	
Total the number of regulations that are not in compliance. A deduction of 20% of the failure weight will be given for one noncompliant regulation. If more than two regulations are marked noncompliant, then the structure will not be tested.			Total the number of regulations that are in compliance. A total of nine or more qualifies the structure for testing without deductions.	

Any of the regulations below marked noncompliant will automatically eliminate the structure from final testing or consideration.

	Noncompliant		Compliant	
Plane of abutment (horizontal)	Part of the beam assembly rests below the horizontal plane of abutment.		No part of the beam assembly rests below the horizontal plane of abutment.	
Placement on abutment	The beam is not long enough for placement for testing.		The beam length is appropriate for testing.	
Internal clearance	Placement of the testing rod through the center of the beam is blocked.		The testing rod passes freely through the center of the beam.	
Construction pins	Pins are still in place when the structure is submitted.		All pins have been removed from the structure.	
Laminations	Laminations contain more than two pieces or members face to face in the same direction.		Laminations are correct with no more than two pieces or members glued face to face running in the same direction.	
	TOTAL		**TOTAL**	

STRUCTURAL ENGINEERING (continued)	
Structure approved for final testing	
Record the mass (weight) of the completed structure prior to testing.	
Record the testing failure weight in pounds.	
Record a 20% deduction of the failure weight if only one regulation is noncompliant.	
Determine the efficiency (shown to three decimal places) by multiplying the failure weight by 454 and then dividing by the mass weight (in grams) of the finished structure.	

TOTAL POINTS	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

SYSTEM CONTROL TECHNOLOGY

OVERVIEW

Participants work as part of a team on site to develop a computer-controlled model-solution to a problem, typically one from an industrial setting. Teams analyze the problem, build a computer-controlled mechanical model, program the model, explain the program and mechanical features of the model-solution, and leave instructions for evaluators to operate the device.

PURPOSE

Participants are provided with the opportunity to work as a team to develop a systematic solution to a problem and to build a computer-controlled model to represent and illustrate their solution.

☑ This challenging event attracts a special kind of student—team players who are creative and who can perform under pressure.

ELIGIBILITY

Participants are limited to one (1) team of three (3) members per state, one (1) entry per team. Team members must be from the same chapter.

TIME LIMITS

A. There is a one (1)-hour set-up time for the team captain or team representative prior to the competition.

B. Each team is allowed a fifteen (15)-minute session for problem analysis.

C. Each team is provided two and one-half (2½) hours for model development and programming. Programs must be written completely on site. Use or modification of any programs written prior to the competition will result in disqualification.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Each team selects a "team captain" prior to the orientation meeting.

B. The captain checks in for the team during the set-up time meeting by submitting his/her ID # for identification of the written and model portions of the event.

C. The problem and the inventor's log are presented to the teams at the beginning of the fifteen (15)-minute problem analysis session prior to model building. Teams must complete their description or interpretation of the problem during this time.

D. Each team is given a maximum of two and one-half (2½) hours to construct a model simulating realistic industrial processes, to program the model, to test the solution, to describe the program and mechanical features of the model-solution, and to complete directions for evaluators to actuate the model.

E. When finished, teams save their programs and leave them on-screen in operable form, with the ability to be reset.

   1. Before leaving the event room, teams demonstrate the operation of the model with evaluators present. Evaluators may ask a few questions during the demonstration.
   2. After all the evaluators have observed the operation of the model, teams may leave. The coordinator determines the time given for the team demonstration based on the number of teams and the complexity of the problem.
   3. Evaluation of the solutions takes place without the teams present.

REGULATIONS

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

A. Each team provides its own materials kit and reference material; the reference material must be approved by the coordinator prior to the start of the event. No building cards may be used or placed out in the open at any time. Each team's material kit must include:

   1. Two (2) optical sensors
   2. Two (2) lights
   3. Two (2) touch sensors
   4. Two (2) motors
   5. Rubber bands and tape
   6. Pencils and scratch paper

B. Participants provide their own hardware and software systems.

C. The following definitions are an integral part of the event regulations:

1. Repeatability—the device is programmed to reset automatically.
2. Functional control—the device/model must accomplish the task in an efficient manner and be user friendly.
3. Model-solution—the physical device must simulate the realistic processes used in industry.
4. Conservation of materials—the model reflects the best use of materials to solve the problem, without being overbuilt.

D. The following example of a problem for this event is provided to help students understand and interpret a typical issue common to industry that might be used at a national conference.

On January 15, 2009, Captain "Sully" Sullenberger gracefully landed an Airbus A320 in the Hudson River after a collision with a flock of geese killed power in both engines minutes after takeoff from LaGuardia airport. All 155 people on the airplane survived.

Geese and various flocks of birds have caused numerous problems for airlines over the years. A prominent airline company has determined that the easiest way to protect the passenger is to design a safety mechanism that will release a floatation device for the plane once it touches water (an airbag of sorts for the airplane).

Your firm has been asked to design a system that includes sensors on the front, bottom, top and side of the aircraft. If the plane lands right side up, then the front, bottom and side floatation devices would deploy and inflate immediately. If the plane lands upside down, then the front, top and side floatation devices would deploy and inflate immediately. If the plane lands at any angle, then the floatation device on each side of the impact point would deploy and inflate immediately. It should be noted that the flotation devices will not deploy and inflate on any sides where a fire is detected.

Light sensors can be used to represent fire.

EVALUATION

Teams are evaluated on their written work, model function, and programming structure and efficiency.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CREATIVE THINKING — Students will emphasize original ideas in order to create a competitive edge. Suggested leadership lessons: *Creative Techniques* and *HAT To Be Creative*
- PROBLEM SOLVING — Students will analyze each step in the design process. Suggested leadership lessons: *Lend A Hand* and *Problem Solving Steps*
- TEAMWORK — Students will assign tasks based on specific individual skills. Suggested leadership lessons: *Effective Meetings* and *The Gift*

Additional leadership skills promoted in this event: communication, critical thinking, ethics, evaluation

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

CNC programmer
Computer programmer
Robotics engineer

SYSTEM CONTROL TECHNOLOGY INVENTOR'S LOG

Team Captain ID

Use only the space provided.

Description or interpretation of the given problem:

Description of the team solution (explain the unique features of the program and model):

Directions to evaluators to start the system:

SYSTEM CONTROL TECHNOLOGY
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators, two (2) or more

C. Assistants, two (2)

D. Event sponsors, two (2) to write the problem and direct evaluators

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Stopwatches
   6. Calculator
   7. Copies of the problem written collaboratively by sponsors
   8. Copies of the inventor's log
   9. Results envelope
   10. Power strips and extension cords

B. Large room to accommodate a first place team from every state and affiliated country

C. One (1) table and three (3) chairs per team

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the Coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to distribute materials and to review time limits, procedures, and regulations. If questions arise that

cannot be answered, speak to the event manager before the event begins.

D. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

E. Secure participants' equipment in the area designated.

F. At the orientation meeting obtain the team/chapter identification numbers from team captains.
   1. Evaluators and sponsors must be present at the orientation meeting.
   2. Review the time limits, procedure, and regulations with team captains.

G. Distribute the problem and Inventor's Log to teams at the beginning of the event. Teams have fifteen (15) minutes to complete their interpretation of the problem in the Inventor's Log.

H. Each team is given two and one-half (2½) hours to complete the remaining portions of the event.

I. Teams must demonstrate that their device/model is operable and has the ability to reset prior to leaving. Evaluators must observe this portion and may ask a few questions. Evaluators also may take notes, but evaluation occurs only after all teams have left the event room.

J. The evaluators judge the entries without consulting one another.

K. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

L. Ensure that all rating forms have been completed, tallied, and averaged before evaluators are dismissed.

M. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

N. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

SYSTEM CONTROL TECHNOLOGY

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Inventor's Log (20 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Description of problem (X1)	The description is incomplete, and/or it is illogical and unorganized; the description is simply a restatement of the problem's guidelines.	The description includes a logical, but only general, understanding of the problem's guidelines; it restates the guidelines with an overall understanding of the problem.	An organized, logical, and concise description of the problem is provided; it includes all major aspects of the problem's guidelines, as well as original thoughts.	
Description of solution and activation instructions (X1)	The team's solution does not correlate with the final system creation; solution is illogical, related to the problem's guidelines; incomplete directions to activate the solution are included.	The team's solution correlates generally with the final system creation, but missing key design elements are needed for the system to operate correctly; adequate directions to activate the solution are included.	A strong correlation between the team's written solution and final system creation is provided; it is written clearly and concisely; instructions for the solution are included and written concisely.	
			SUBTOTAL (20 points)	

Solution to Problem (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Realistic simulation (X1)	The solution is not realistic; it has an abstract design that would not work effectively in its intended environment.	The simulation is somewhat realistic and logically designed, but it may not work effectively in its intended environment.	The simulation is realistic and is similar to a system that would be effective in its intended environment.	
Dependability of solution (X1)	The solution is not constructed with dependability in mind; when operating the system, construction pieces fall off, etc.	Most of the parts of the solution are well constructed and dependable, with only a few that are questionable.	Every component of the solution is well constructed and dependable; practical construction techniques have been used.	
Conservation of materials (X1)	An inefficient use of construction materials is obvious; too many unnecessary materials are incorporated into the design.	The team attempts to conserve materials in the construction of the solution, but some parts could be redesigned using less materials.	All components of the solution are designed and assembled with conservation of materials in mind; the construction is elegant and not overbuilt.	
Solution to problem (X2)	The solution is missing three or more attributes/criteria and several do not function as intended.	The solution is missing one or two attributes/criteria; one or two attributes/criteria function inadequately.	The solution includes all attributes/criteria listed in the design details, and all attributes function appropriately and correctly.	
Ingenuity and creativity (X1)	The solution and design are unauthentic, complex, and do not function as a system.	The solution has some original ideas in its design, but it may not function as a system and/or the solution is overly complex.	The solution is truly unique and authentic; its construction is concise and designed with simplicity.	
			SUBTOTAL (60 points)	

SYSTEM CONTROL TECHNOLOGY (continued)				
Programming Structure (20 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Programming efficiency (X1)	The software used to program the system is overly complex and inefficient; advanced programming techniques, which would have simplified programming specific tasks, are not included.	The programming software is efficient, with advanced features that allowed simplification of certain tasks for the solution; some coding, however, is redundant and/or overly complicated.	A concise and logical programming application was used that incorporates advanced features to simplify the solution's criteria and/or attributes.	
Program structure (X1)	The programming structure is illogical, unorganized, or overly complicated and/or complex; the program does not reset.	There is evidence of an organized programming structure, but some coding strings are illogical and/or disorganized; the program resets.	The programming structure is concise and predictable; there is appropriate use of sub-routines where needed; the program resets.	
			SUBTOTAL (20 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

TECHNICAL SKETCHING AND APPLICATION

OVERVIEW

Participants complete a written test in order to qualify as semifinalists. Semifinalists then demonstrate their ability to solve on-site engineering graphics problems using standard drafting techniques.

PURPOSE

Participants have the opportunity to analyze and interpret engineering graphic specifications, use accurate drafting terminology, and use standard sketching, drafting, and problem solving techniques to solve engineering graphic problems.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter.

TIME LIMITS

A. Participants are allowed 90 minutes to complete the written test.

B. Semifinalists are allowed 90 minutes to solve the on-site problems using appropriate sketching and practices.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program for the written test.

B. Students take the written test.

C. The written test is evaluated. A list of semifinalists in random order is posted.

D. Semifinalists report to the event area at the time stated in the conference program for the on-site activity.

☑ Participants must provide—and bring to the test site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for any competition that involves a written test.

REGULATIONS

A. Scannable answer forms for the written test are furnished at the test site.

B. Each semifinalist must provide a minimum of two (2) and a maximum of four (4) mechanical pencils (various leads, as desired) and one (1) additional eraser (as desired.)

C. Semifinalists are provided a drawing surface (possible examples are a manila folder, clipboard, etc.) and two (2) pieces of graph paper.

D. Semifinalists may not bring any notes or reference materials into the testing/drawing room.

E. No additional drawing instruments will be allowed in the semifinalist room. Materials provided to semifinalists (including the testing materials, on-site problem paper, solution paper or the drawing surface) may not be used to create a straight edge.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

EVALUATION

A. Semifinalists are those participants with the top twelve (12) scores on the written test.

B. The semifinalists' solutions to the on-site problems are scored and added to the written test score to determine the rankings of the ten (10) finalists.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will use drafting techniques as a language. Suggested leadership lessons: *Promote It* and *Put It Together*
- CRITICAL THINKING — Student will analyze and interpret a design. Suggested leadership lessons: *And The Answer Is* and *Figure It Out*
- PROBLEM SOLVING — Student will analyze a problem and create a solution for it. Suggested leadership lessons: *Effective Brainstorming* and *Problem Solving Steps*

Additional leadership skills promoted in this event: decision making, evaluation

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Architect
Mechanical engineer
Product designer
Quality control engineer
Structural engineer

TECHNICAL SKETCHING AND APPLICATION EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for written test, two (2)

C. Evaluators for semifinalist activity, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Semifinalist list for posting
   6. Results envelope

B. Technical Sketching and Application test and scan form answer sheets with answer key

C. Scan machine and scannable answer forms

D. Current Technical Sketching and Application problems for semifinalists

E. Graph paper—twelve (12) sets of two (2) for each semifinalist

F. One (1) drawing surface per semifinalist (possible examples are manila folder, clip board, etc.)

G. Tables and chairs for participants

H. Tables and chairs for evaluators

I. Marking pens for evaluators

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the written test is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

E. Administer the written test. Allow 90 minutes.

F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

G. Score the test. Prepare a list of the twelve (12) semifinalists and submit it to the CRC chairperson for posting.

H. Inspect the area(s) in which the semifinalist event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

I. Meet with your semifinalist evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

J. Administer the on-site problems. Allow 90 minutes.

K. Evaluators collect and review each semifinalist's solution to the problems.

L. Evaluators tally, sign, and submit rating forms to the event coordinator. Evaluators discuss and break any ties.

M. Ensure that all rating forms have been completed, reviewed, and signed before the evaluators are dismissed.

N. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

O. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

TECHNICAL SKETCHING AND APPLICATIONS

2013 & 2014 OFFICIAL RATING FORM **HIGH SCHOOL**

Record scores in the column spaces below.

Written Test (50 points)

SUBTOTAL (50 points)

Semifinalist On-site Problem Solution (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Line quality (X1)	Line weight, thickness, and quality are extremely poor.	Line weight, thickness and quality are somewhat adequate, but they lack overall consistency.	Line weight, thickness and quality are consistently accurate and uniform.	
Accuracy of solution (X2)	The solution is missing important information and details.	The solution is accurate, with most of the necessary information and details included.	The solution is accurate and complete, with all necessary information and details included.	
Dimensioning accuracy (X1)	Dimensioning practices are inaccurate, with many necessary measurements and notes missing.	Most necessary dimensions are included and accurate; some necessary notes are missing.	All necessary dimensions and notations are included and appropriately placed.	
Neatness, letter uniformity, and general appearance (X1)	The solution displays minimal effort in neatness, letter uniformity, and general appearance; poor quality is evident.	The solution is adequate and exhibits good effort, with some attention to detail.	The solution is exemplary in neatness, letter uniformity, appearance and attention to detail.	

SUBTOTAL (50 points)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

TECHNOLOGY BOWL

OVERVIEW

Participants complete a written, objective test in order to qualify for oral question/response, head-to-head team competition.

PURPOSE

Participants have the opportunity to demonstrate knowledge of TSA leadership skills and the systems of technology.

ELIGIBILITY

Participants are limited to one (1) team of three (3) members per chapter. Teams that take the written test and advance to the semifinalist portion of the event must be composed of the same three (3) members.

☑ If there were an event "popularity contest," Technology Bowl would be right up there with Chapter Team.

TIME LIMITS

A. The written test is administered at the same time to all students entering this event. One (1) hour is allowed for this test.

B. Teams selected as semifinalists must be available as scheduled for oral competition.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program.

B. Participants follow the specific regulations and adhere to the directions provided on site by the event coordinator.

C. Each team is assigned a number by the event coordinator. This number establishes the initial order of participation in the oral portion of the event.

D. All team members take the written exam. The twelve (12) top-scoring teams qualify as semifinalists. A semifinal list in random order is posted.

E. Semifinalist team members report to the oral event area holding room at the time and place stated in the conference program. After a short briefing, advisors leave and the teams remain in the holding room until they are called for competition. Teams that leave the holding room before being called for competition are eliminated. Teams may visit with other teams in the holding room; however, no advisors or visitors may enter.

F. Team members are not allowed in the oral event area as observers until after their team has been eliminated from competition.

G. When instructed to do so, two (2) teams enter the event area and are seated according to instructions.

H. Teams are paired using the semifinalist teams' flow chart.

I. Once a team is eliminated, it is out of the oral competition except for the semifinal round in which the third and fourth positions are determined.

J. Questions are drawn as needed from a card file resource bank.

K. If equipment malfunctions, a question that is being considered at that time automatically is disqualified. If equipment malfunctions three (3) times, time is called by the event coordinator to set up the back-up equipment. After equipment has been set up and tested, the event continues from the point where it stopped.

☑ Participants must provide—and bring to the test site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for any competition that involves a written test.

REGULATIONS

A. Written exam

1. The event coordinator furnishes scannable answer forms.
2. Participants must bring two (2) pencils to the event site to take the written test.
3. Late participants are disqualified and restricted from the test area.
4. Participant entry numbers are assigned during event registration and must be entered on the test paper in the space indicated.
5. Participants must stop work immediately when time is called.
6. Should a participant complete the test before the time allocated, the participant holds the test paper and remains

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

seated quietly without distracting anyone else. Failure to do so results in disqualification of the participant.

7. All test papers must be turned in before leaving the test area.

B. Oral exam

1. The total score of all three (3) team members determines team ranking.
2. Twelve (12) teams, based upon the written test results, are selected as semifinalists.
3. All three (3) team members of a semifinalist team must be available to participate at the scheduled time for the oral test of the event. If a team or member is late for participation, that team forfeits and is eliminated from competition.
4. No transmitting or recording devices are permitted in the event area. No prompting is permitted.
5. The team member who "buzzes in" for a question has five (5) seconds to answer the question without discussion.
6. The team that answers the bonus question correctly is allowed ten (10) seconds to discuss the extra question and to give an answer.
7. After a question is read, the competing teams have ten (10) seconds to "buzz in." If these teams are unable to answer the question, then another question is read.
8. If a team member "buzzes in" before the question is finished being read, that member must give the exact answer as printed on the answer card.

EVALUATION

A. Written exam—Scores on a test of one hundred (100) multiple choice and completion questions determine the winners of the written exam and the semifinalist teams for the oral event.

B. Oral exam

1. A team's score is derived from the total number of correct answers to the questions asked. For each correct answer, the team receives ten (10) points.
2. When the question has been completely read and a team has been recognized to answer after pressing the button, should the team not answer or answer incorrectly, five (5) points are deducted from the team's total score. In this instance, the other team does not have the opportunity to respond to this question and the next question is read for both teams.
3. If a question is being read and a team member presses the button before the question is finished, the member must answer completely, as stated on the answer card. If the

answer is incorrect, the entire question is read for the other team.

4. Twelve (12) questions per round are asked. No questions are repeated in another round.
5. In case of a tie, five (5) additional questions are asked. If a tie exists after the first tiebreaker, then five (5) additional questions are asked. This procedure continues until the tie is broken. The questions are picked at random from the test bank.
6. One of the twelve (12) questions asked is a bonus question. The participants are told when the bonus question is asked, and the team that answers it correctly has the opportunity to answer one (1) additional question. This is the only time team members may consult with each other before giving an answer. The team has ten (10) seconds to give its answer. If a team gives an incorrect answer to the bonus question, then the question is read for the other team. Bonus point scoring: If a team answers the bonus question correctly, that team receives fifteen (15) points; if a team answers the bonus question incorrectly, that team loses five (5) points from its score. Additional question: If a team answers the additional question, that team receives five (5) points; if it does not answer the additional question correctly, then no points are lost. The other team has an opportunity to answer the additional question, although the additional question is not read again. The team has ten (10) seconds to discuss and give its answer. A correct answer is worth five (5) points, and an incorrect answer reduces the team score by five (5) points.

C. Awards—The top ten (10) participants with the highest scores on the written exam are finalists and are recognized at the awards ceremony. The top ten (10) teams with the highest total scores on the written test also are introduced. Trophies are awarded to the top three (3) individuals in the written competition and the top three (3) teams in the oral competition.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will demonstrate their knowledge of technology-related topics. Suggested leadership lessons: *Listening Skills* and *Personality Types*
- CRITICAL THINKING — Students will use evidence, judgment and knowledge to answer questions. Suggested leadership lessons: *Critical Thinking Tips* and *The Hidden Message*
- TEAMWORK — Students will appreciate the contribution of team members. Suggested leadership lessons: *Teams* and *Stepping Stones*

Additional leadership skills promoted in this event: decision making, evaluation, problem solving, self-esteem

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer technician
Construction analyst
Engineer
Entrepreneur
Technology education instructor

TECHNOLOGY BOWL
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Timer for written exam, one (1)

C. Assistants for written exam, one (1) for every twenty (20) participants

D. Evaluator for grading, one (1)

E. Timekeeper for oral exam, one (1)

F. Scorekeeper for oral exam, one (1)

G. Moderator for oral exam, one (1)

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Sufficient copies of the written test (tests must be returned immediately following the event)
   6. Scannable answer forms
   7. Semifinalist list for posting
   8. Results envelope

B. Written exam
   1. Stopwatch for timekeeper
   2. Tables and chairs in sufficient quantity to accommodate all participants
   3. Official rating forms for evaluators, furnished by event coordinator
   4. Scan machine and forms

C. Oral exam
   1. Table and chairs for the evaluators
   2. Two (2) tables and six (6) chairs for the event team, facing the moderator and audience
   3. Technology Bowl winners' chart
   4. List of chapters for the event

5. Buzzer system and controls
6. Stopwatch for timekeeper
7. Large, erasable audience score sheet (20" x 36")
8. 5" x 8" question cards selected from the technology bowl test bank with test questions and the acceptable answer(s) clearly typed

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

E. Distribute the scannable answer forms with the help of the evaluators. Direct the participants to fill in their entry number and test code letter in the appropriate spaces.

F. Pass out the written test with the help of the evaluators (tests are coded A or B). Participants seated next to each other should not have the same coded test; tests should be alternated A, B, A, B, and so on. Instruct the participants to keep the tests face down until they are directed to turn them over and begin.

G. With the event coordinator acting as the timer and the evaluators acting as proctors by positioning themselves around the event room, direct the participants to turn their test papers over, place their code number and the code letter found on the test on their scantron forms, and begin.

H. Exactly one (1) hour from the time that the participants begin answering the questions, call time. Ask the participants to turn their answer sheets face down and then the test paper face down. Have participants pass their answer sheets to one of the evaluators. Collect all of the test papers. Make sure that

all test papers are collected. When all have been turned in, the participants may be dismissed.

I. Determine the twelve (12) semifinalist teams by adding the scores of teammates on the written test.

J. Prepare a list of the twelve (12) semifinalists and submit it to the CRC chairperson for posting.

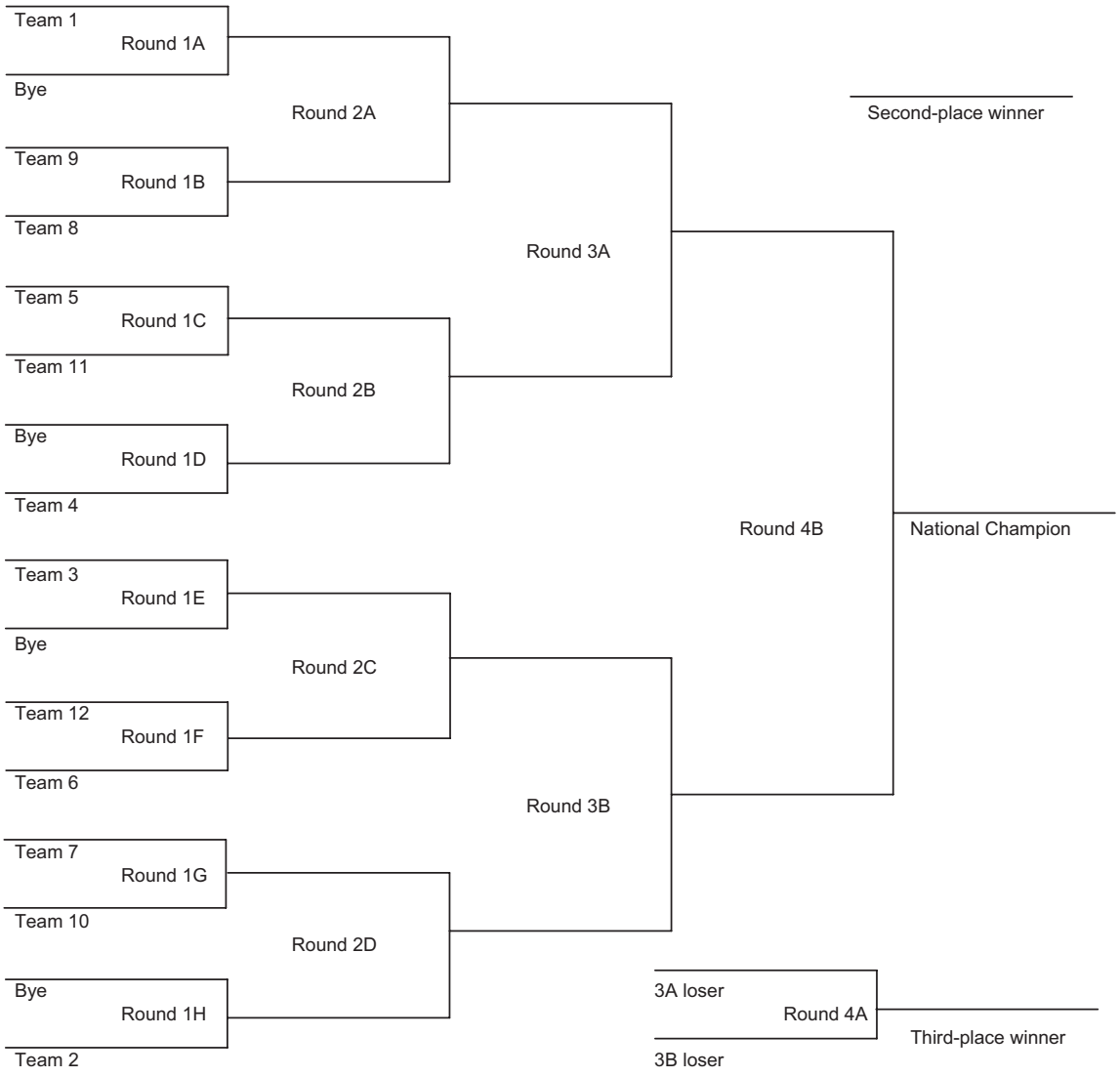
K. Run the oral component as described in the Procedure section.

L. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

M. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

TECHNOLOGY BOWL

SEMIFINALIST TEAMS FLOW CHART — HIGH SCHOOL



Note to evaluators: This is a single elimination format (semifinalist teams ONLY).

Team 1	Team 7
Team 2	Team 8
Team 3	Team 9
Team 4	Team 10
Team 5	Team 11
Team 6	Team 12

TECHNOLOGY BOWL (ORAL)

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Competition round # _____

Team # _____ (A) Team # _____ (B)

Scorekeeper's signature: _____

Record the written test scores of each of the three (3) team members (for team A and B) in the boxes below and then calculate the team average. Record the team average in the column space to the far right.

Team member 1	(A)	(B)	Team member 2	(A)	(B)	Team member 3	(A)	(B)

Evaluator should place an X in the box beside the team that gives the correct response to the question and an O beside the team that gives an incorrect response. The points assigned for each response should be recorded in the blue column to the far right.

Question #	Points	Team # _____		Team # _____		Record scores in the column spaces below. Team A Average ____	Team B Average ____
1.	+10 for correct, -5 for incorrect response						
2.	+10 for correct, -5 for incorrect response						
3.	+10 for correct, -5 for incorrect response						
4.	+10 for correct, -5 for incorrect response						
5.	+10 for correct, -5 for incorrect response						
6.	+10 for correct, -5 for incorrect response						
7.	+10 for correct, -5 for incorrect response						
8.	+10 for correct, -5 for incorrect response						
9.	+10 for correct, -5 for incorrect response						
10.	+10 for correct, -5 for incorrect response						
11.	+10 for correct, -5 for incorrect response						
12.	+10 for correct, -5 for incorrect response						
Bonus and additional question	(+15 for answering the bonus question correctly and +5 points for answering the additional question correctly)						
			SUBTOTAL (140 points)				
Tie Breaker Questions							
1.							
2.							
3.							
4.							
5.							
			SUBTOTAL				

TECHNOLOGY BOWL (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right. Indicate the rule violated: _____	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (140 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

TECHNOLOGY PROBLEM SOLVING

OVERVIEW

Participants work together to develop and create a solution to a problem using the limited materials provided and the tools allowed. Completed solutions will be objectively measured and judged to determine the best and most effective solution for the stated problem.

PURPOSE

Participants are provided with the opportunity to demonstrate their ability to effectively use problem solving skills in the development and creation of a solution to a specific problem.

ELIGIBILITY

Participants are limited to one (1) team of two (2) members per chapter.

TIME LIMITS

The allotted time for design and construction of the solution is two (2) hours.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants report to the event area at the time and place stated in the conference program and bring a toolbox containing the following:
   1. No more than two cutting devices from the list below:
      a. modeling knife or x-acto knife
      b. miter box and saw
      c. a blade and anvil cutter
      d. scissors
      e. another approved cutting device – none may be electric
   2. one (1) ounce of “super glue”

☑ This event requires the participant to bring the required supplies in the toolbox.

Note: cyanoacrylate (CA) glue comes in a variety of thicknesses. A team may elect to use one-half (½) ounce of thin CA and one-half (½) ounce of filler CA for a total of one (1) ounce of adhesive. The glue must be in the original bottle with a manufacturer's label, which is clearly marked with the capacity. One-half (½) ounce of glue in a one (1) ounce bottle will be considered one (1) ounce of glue.

3. a single two (2) ounce bottle of accelerator [pressurized, aerosol applicators are not allowed; a pump or drip applicator of two (2) ounces or less is acceptable]
4. straight pins, as needed
5. simple clamps, such as clothespins, binder clips or twisty ties; all clamps must be removed before the structure is submitted for testing
6. a cutting surface that fits in the approved space and prevents modeling knives from marring the table top
7. a 12" ruler or measuring scale
8. emery boards of various grits, or sand paper or sanding blocks
9. safety glasses for team members
10. marking device (pen, pencil, etc.)

B. Students also are required to bring the following items:

1. one (1) roll ¾" masking tape
2. twelve (12) each 3" x 5" index cards
3. twelve (12) each Popsicle sticks or tongue depressors
4. six (6) each 8½" x 11" sheets of printer paper (20 pound bond)
5. fifteen (15) sheets of 8½" x 11", 65 pound weight cardstock
6. six (6) each drinking straws
7. six (6) styrofoam trays; trays should be no larger than 7" x 10"

B. The problem and evaluation criteria are distributed.

C. After teams receive the materials, they have two (2) hours to design and construct a solution.

D. Each solution is tested as soon as possible after the construction phase is completed.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. All work must be completed in the event area during the time specified for the event.

B. All materials are provided. Only the materials issued to each team by the event coordinator may be used in the development of the solution.

EVALUATION

Each team's solution is evaluated objectively. A finite measure—such as elapsed time, horizontal or vertical distance, and/or strength—will be defined in the problem and is used to determine the best solution. Second best attempts or other objective criteria are used to break ties when possible. Only as a last resort does the event coordinator use subjective measurement, such as originality, to evaluate solutions.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- ORGANIZATION — Students organize their ideas and materials to produce an effective solution. Suggested leadership lessons: *Effective Gains* and *Whose Birthday Is It?*
- PROBLEM SOLVING — Students find the best solution to a problem, based on time and limited materials. Suggested leadership lessons: *Debate It* and *Effective Brainstorming*
- TEAMWORK — Students prepare in advance to work efficiently on site. Suggested leadership lessons: *Stepping Stones* and *The Gift*

Additional leadership skills promoted in this event: communication, critical thinking, evaluation, organization

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer software engineer
Mathematician
Criminal investigator
Air traffic controller
Veterinarian

TECHNOLOGY PROBLEM SOLVING EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants for set-up, monitoring, and clean-up of on-site activity; two (2) or more per 100 teams

   1. Depending upon the problem, one of the assistants may need to serve as timekeeper.
   2. Not all assistants are needed for set-up and clean-up, but all are needed while the on-site activity is taking place.

C. Evaluators, two (2) or more per 100 teams

MATERIALS

A. Coordinator's notebook, containing:

   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. ID tags or stick-on tabs to identify entries
   6. Results envelope

B. Tables and chairs for participants

C. Tables and chairs for evaluators, to be used for tools/materials distribution and evaluation

D. A copy of a well-written, technologically appropriate problem for each team that can be objectively measured

E. Adequate conditions (inside or outside), tools, materials, monitoring, and testing devices for the prescribed problem

F. Stopwatch or clock for timekeeper

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

D. Check tools, materials, and monitoring and testing devices.

E. Begin the event at the scheduled time by closing the doors and checking the entry list. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC chairperson.

F. Once teams are seated and general announcements have been given, distribute and review the problem, and start the time.

G. Evaluators and monitors observe the entire construction phase, with evaluators measuring solutions as soon as appropriate.

H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

I. Ensure that all solutions have been measured and all rating forms completed before evaluators are dismissed. Evaluators discuss and break any ties in order to determine the ranking of the ten (10) finalists.

J. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

K. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

TECHNOLOGY PROBLEM SOLVING

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Solution Development (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Tool box See Procedure A (X1)	There are three or more items missing from the tool box.	Only one or two items are missing from the tool box.	All specified tools are included in the tool box.	
Materials See Procedure B (X1)	Three or more items are missing from the materials, and/or some of the items are not those specified.	One or two items are missing, and a few items are not those specified.	All of the specified items are included with the team materials.	
Solution to problem (X2)	The solution developed is unable to fully meet or solve the defined problem.	The solution is weak in its attempt to solve the problem.	The solution is fully developed and clearly meets or solves the identified problem.	
			SUBTOTAL (40 points)	

Testing of Solutions (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Evaluation (A finite unit of measure (elapsed time, linear distance, and/or strength, etc.) relative to the problem statement, combined with the other assessment items on this rubric, will be utilized to determine the ranking for the event. (X1)				

1st - 60 Points	**2nd - 55 Points**	**3rd - 50 Points**	**4th - 45 Points**	**5th - 40 Points**
6th - 35 Points	**7th - 30 Points**	**8th - 25 Points**	**9th - 20 Points**	**10th - 15 Points**
				SUBTOTAL (60 points)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (100 points)**

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

TRANSPORTATION MODELING

OVERVIEW

Using only certain materials and following required specifications, participants design and produce a CO2-powered scale model of a vehicle that fits the annual design problem and that takes appearance and realism into consideration.

The design theme for 2013 is your vision of the next generation of a high speed rail train engine.

The design theme for 2014 is a two passenger, short range, alternative fuel vehicle. The vehicle would be intended for a "Zipcar"-style cooperative.

PURPOSE

Participants experience the automotive design process—from researching and conceptualizing a design to making drawings, building and testing a scaled model.

ELIGIBILITY

Participants are limited to one (1) individual per chapter, one (1) entry per individual.

TIME LIMITS

Entries must be started and completed during the current school year.

ATTIRE

Business Casual dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries at the time and place stated in the conference program.

B. Evaluators review entries. Neither students nor advisors are present at this time.

C. Race-worthy models are timed in a single lane test run with points awarded according to Procedure D that follows.

D. Time trial points are awarded as follows.

1st place..... five (5) points
2nd place ..... four (4) points
3rd - 5th place ..... three (3) points
6th - 10th place ..... two (2) points
10th - 20th place ..... one (1) point

E. Documentation (notebook), model, and time trial points are combined to determine final standings.

REGULATIONS

A. Chapter entries must include a scale model and a notebook.

B. The event coordinator determines the distance between the start line and finish line on the test track on site.

C. The model and the documentation (notebook) must meet the following specifications:

Model

1. The scale model must accurately reflect the annual design problem.
2. The model must be presented for evaluation on a display not to exceed 12" tall x 12" deep x 24" long (including the model). The notebook is not considered part of the display but is placed with it.
3. The body itself must be made from wood.
   ***Using pre-manufactured model car bodies is prohibited (including hoods, fenders, etc.).** It is permissible to use pre-manufactured parts such as body strengtheners, plastic canopy, exhausts, air foils, head and tail lights, windshields, mirrors, and antennae. They may be attached to or enclosed within the vehicle and may be constructed from materials other than wood, excluding glass or liquids. These parts must be fastened securely unless they are to be removed prior to the timed run. Any removable parts must be identified as removable on the drawings.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

	MINIMUM	MAXIMUM
4. Body total width (including wheels)	none	4"
5. Body height with wheels when raced (after non-fixed parts have been removed)	none	5"
6. Body mass (completed model without CO2)	none	2 pounds

Cartridge hole

1. The power plant hole must be at the farthest point at the rear of the car and must be drilled on center and parallel to the race surface to assure proper puncture of the CO2 cartridge. Additions to the rear of the car that obstruct the launch mechanism must be removed for the timed run or the vehicle is considered "unraceable" and receives no time points. A minimum of ⅛" thickness around the entire power plant hole must be maintained on the vehicle for safety.

2. Hole depth	2"	2⅛"
3. Safety zone thickness	⅛"	
4. Chamber diameter	¾"	$^{13}/_{16}$"
5. Lowest point of chamber diameter to race surface (with wheels)	1⅛"	1⅝"

Eye Screws

1. Vehicles must have no more than two (2) screw eyes per car; the screw eyes must meet tolerances. They must not make contact with the racing surface. The track string must pass through both screw eyelets, which are to be located on the centerline of the bottom of the car. Glue may be used to reinforce the screw eyes. It is the responsibility of the car designer/engineer to see that the eye screw holes are tightly closed to prevent the track string from slipping out. As with adjustments, this must be done prior to event check-in.

2. Inside diameter	⅛"	¼"
3. Distance apart (at farthest points)	5"	none

Wheels

1. Dimensions should be consistent with the scale of the body.
2. Wheels must roll.

Documentation

1. Documentation for this event must not include the name of the chapter or state. All ideas, text or images from sources other than the designer must be cited. Cited works should be in MLA format. Pages that are 11" x 17" in size should be folded to fit in the notebook, described below.
2. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required for this event. The cover page must include the event title, the conference city and state, and the year. A picture of the vehicle may be included as well. In addition to the 11" x 17" pages noted, the inside of the binder must include the following single-sided, 8½" x 11" pages in the order below:
   a. Title page with the event title, the conference city and state, and the year; one (1) page
   b. Table of contents; pages as needed
   c. Description of designer's vehicle, making note of the scale used, inspiration for the choice and design of the vehicle, history and evolution of the original vehicle, as well as design elements that set the vehicle apart from others (e.g. fuel used, unique features, etc.); one (1) page
   d. Photos of current or past vehicles that are similar to this year's theme or that inspired this entry; pages as needed
   e. Concept drawings/detailed sketches or 3D CAD modeling; two (2) pages (11" x 17" size)
   f. Photos of the clay, foam, or wax mock up; one (1) page
   g. Final technical illustrations (orthographic); two (2) pages (11" x 17" size)
   h. Photos of the production of the model; pages as needed

D. No repair or maintenance on entries is allowed after the entries have been registered. If the vehicle is damaged by conference personnel, the event coordinator determines whether the vehicle may be repaired by the student who entered the vehicle. Accessories designated to be removed prior to the race may be removed by the participant prior to the timed test. In the event the participant cannot be present to remove parts, the participant may designate someone to do this for him/her. The participant or his/her advisor must notify the event coordinator if someone is designated. This is the only reason a student may touch his/her vehicle after registration. Undamaged wheels that come off during the event may be replaced as determined by the event coordinator. Damaged wheels may not be replaced.

E. All CO2 cartridges for the event are provided by TSA.

EVALUATION

Entries are evaluated by a combination of points earned from the notebook, model, and time trial.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students document their research and design process. Suggested leadership lessons: *Fact or Fiction* and *Promote It*
- CRITICAL THINKING — Students analyze research in order to create an appropriate and unique model. Suggested leadership lessons: *Critical Thinking Tips* and *Put Yourself In Their Shoes*
- PROBLEM SOLVING — Students determine the design of their entry based on entry research. Suggested leadership lessons: *Lend A Hand* and *Problem Solving Steps*

Additional leadership skills promoted in this event: ethics, evaluation, creative thinking

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Automotive designer
Automotive modeler
Digital modeling technician
Industrial designer
Industrial engineer

TRANSPORTATION MODELING
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Assistants, two (2)

C. Evaluators, two (2) or more

MATERIALS

A. Coordinator's notebook containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms
   3. List of entries with finalist report
   4. List of evaluators/assistants
   5. Official vehicle time sheet
   6. Summary sheets
   7. Results envelope

B. CO2 cartridges, one (1) per entry plus spares on site

C. Go/No-go devices for all evaluators

D. Monofilament fishing line for track, four (4) pre-tied, two (2) on track, two (2) reserve

E. Race track set, including a starting gate and finish gate with digital timer

F. Padding for the finish gate

G. Tables for the display and evaluation of entries (cars and notebooks)

H. Table at the starting line for arranging and holding cars prior to the time trials

I. Table at the finish gate for the placement of cars after time trials

J. Table for the official timekeeper

K. When using a computer-controlled track, provide the proper computer for the software used, all necessary connections, and a printer. This equipment is placed on the official timekeeper's table.

L. Provide for display of time trial.

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

D. Secure the entries in the designated area.

E. One (1) hour before the event is scheduled to begin, meet with your evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

G. Collect and position the Transportation Modeling notebooks and models for viewing by the evaluators, and assist them as necessary during the event.

H. Set up the racetrack prior to the time trials. Make necessary adjustments. Determine the length of the track. (The size of the vehicles should be taken into consideration, i.e. larger vehicles may require a shorter track.)

I. Test all race-worthy vehicles in the time trials, and assign points as stated in the event rules. See Procedure D.

J. When it is necessary to move cars, only race evaluators and official personnel should handle the cars. Extreme care should be taken to avoid damage to the cars.

K. Station one (1) evaluator at the starting gate to position all vehicles in the starting equipment. Station one (1) evaluator at the finish gate to verify timed finishes in case of track equipment failure. This evaluator is also responsible for the proper set-up of the finish line between each time trial. A third evaluator,

if available, or an assistant must be stationed as the official timekeeper for the purpose of managing information, starting, verifying, and recording the race times. If any of the evaluators feel that there has been a misfire or a track malfunction, the coordinator may disallow that race and order another race.

L. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

M. At the designated time, return models and notebooks to student owners after verifying official conference identification.

Participant/Team ID# _____

TRANSPORTATION MODELING

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Model (50 points)

Tolerance violation/disqualification from race (Note rule number in the box.)			**Rule #:**	Record scores in the column spaces below.
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Production quality (X1)	The body exhibits poor production quality; the surface is rough; there is little or no attention to detail.	There is some evidence of proper production techniques; the body is adequate but not of the best quality.	The body demonstrates excellent production techniques with obvious effort and attention to detail.	
Paint and finish (X1)	Surface imperfections are evident; the model is sticky, and/or the painting quality is low.	The quality of the painted surface is acceptable, with some imperfections visible.	The painted surface is exceptional, with little or no visible imperfections.	
Appropriate to designated problem (X1)	The model does not relate to the stated annual design theme.	The model somewhat relates to the stated annual design theme.	The model effectively represents and portrays the stated annual design theme.	
Details (interior, trim, accessories, etc.) (X1)	There is very weak and limited attempt to include identifying characteristics and/or additional parts to help create a realistic appearance.	The model includes some identifying characteristics and/or additional parts that give it a sense of realism.	The model displays exemplary effort to include identifying characteristics and/or additional parts that give the final model a realistic appearance.	
Display (X1)	The quality of the display is extremely poor and/or exceeds size requirements.	The display is adequately created and meets the size specifications.	The display is exemplary, includes eye-catching details and meets the size specifications.	
			SUBTOTAL (50 points)	

Documentation (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Notebook components See Regulation C, Documentation (X1)	The notebook is missing several components, and/or it is unorganized; it is messy and lacks quality.	Most components are included in the notebook, but documentation is loosely organized and lacks overall quality.	All notebook components are included and completely organized; effort and quality of work are evident.	
Vehicle description including history; research report; scale of model (X1)	The description is inadequate; research and reference to credible sources is lacking; the scale is incomplete.	The description is adequate; research is evident but inadequately referenced and documented; scale is stated and accurate.	An excellent description is included, with necessary research referenced and documented to support the model solution; the scale is stated and accurate.	
Concept drawings, detailed sketches or 3D CAD modeling (X1)	Drawings are not to scale; the quality is poor, there are missing parts and dimensions; the drawings are not on 11" x 17" paper.	Drawings are acceptable, true to scale, and representative of the vehicle, but some details/ dimensions are missing; the drawings are produced on 11" x 17" paper.	Drawings are accurate and complete; they include all necessary dimensions; they are drawn on 11" x 17" paper.	

TRANSPORTATION MODELING (continued)				
Documentation (70 points) (continued)				
Photo examples of current/past similar vehicles (X1)	There is only one photo example of current or past similar vehicles.	There are two or three photo examples of current or past similar vehicles.	There are a number of photo examples of current or past similar vehicles, showing that in-depth research was done.	
Photos of clay/foam or wax model (X1)	There is only one photograph of the clay/foam or wax model included.	Two or three photographs of the clay/foam or wax model are included, but more are needed to adequately document the model.	An adequate number of photographs are included to effectively document the preliminary clay/foam/wax model.	
Final technical illustrations (orthographic plans) (X1)	Orthographic plans are poorly executed; the plans are not on 11" x 17" paper.	Orthographic plans are included, but they are incomplete; the plans are on 11" x 17" paper.	The complete orthographic plans are of excellent quality on 11" x 17" paper.	
Photos of production of the model (X1)	Only one photograph of the model production is included.	Two or three photographs of the model production are included, but they are not enough to provide proper documentation.	The photographs included fully and effectively document and describe the model production process.	
			SUBTOTAL (70 points)	

Time Trial (5 points)					
1st place (5 points)	2nd place (4 points)	3rd - 5th place (3 points)	6th - 10th place (2 points)	11th - 20th place (1 points)	
				SUBTOTAL (5 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (125 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

VIDEO GAME DESIGN

OVERVIEW

Participants develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging, with high artistic, educational, and social value. A working, interactive game will be submitted on a DVD for evaluation.

PURPOSE

Game design demands the use of complex intellectual, artistic, and technical skills. Once learned, these skills may be applied in many other high technology occupations within the sciences, technology and the arts. A well-designed game not only entertains but often requires the game player to use complex problem solving skills. Game development is a major industry today, and its potential as an instructional tool is virtually infinite.

ELIGIBILITY

Participants are limited to three (3) teams per state, with a minimum of two (2) individuals per team.

TIME LIMITS

A. Entries must be started and completed during the current school year.

B. The game MUST execute and be played directly from the DVD.

C. The game submitted for evaluation must be greater than three (3) minutes in length of play and no more than twenty (20) minutes (all levels). The game must be interactive. Judges must be able to play the game to the fifth (5th) level.

D. The timing of the game segments starts with the first image or sound presented.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants check in their entries (notebooks and DVDs) at the time and place stated in the conference program.

B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.

C. Two (2) representatives from each semifinalist team report to the event area at the time and place stated in the conference program for their interview.

D. Each semifinalist team explains its notebook and game to the evaluators, discussing the purpose, value, design, rules, and development process of its work; teams may also have to answer questions posed by the evaluators.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

REGULATIONS

A. The game segment must be turned in on a DVD.

B. The game must execute and be played directly from the DVD. Entries will be evaluated using only a PC platform. Participants will not be permitted to install anything onto the evaluator's computer.

C. Instructions and text must be clear and understandable for the evaluation process.

D. Entries must be a team project.

E. All entries become the property of TSA, Inc. and will not be returned after judging.

F. The game must include original work of the team, but game architecture, game engines, graphics and sounds may be used from other sources. Work that is not created by the team must have proper documentation showing copyright permissions and/or license for usage in the game.

G. The DVD and an 8½" x 11" notebook must be submitted. A standard three (3)-ring binder, with a clear front sleeve for a cover page, is required. The cover page must include the event title, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Purpose and description of game, including target audience; one (1) page
4. A detailed explanation of how to play the game, including a list of all control functions; pages as needed.
5. Team's self-evaluation of the design process that includes use of event evaluation criteria; one (1) page
6. A hand-drawn storyboard; pages as needed
7. List of hardware and software used in development of the game, as well as cost of development; pages as needed
8. List of references that includes sources for materials (copyrighted and otherwise); pages as needed
9. Permission letters for copyrighted material; pages as needed
10. A list of everything in the game not created by the team; pages as needed
11. Evidence that the team has tested the game (screen capture, or photos of the team testing the game)
12. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible and comments (see Plan of Work log); one (1) page.
13. Completed and signed Student Copyright Checklist; one (1) page

EVALUATION

Only the first five (5) levels of the game will be evaluated. Evaluation is based on the game's aesthetics, flow, story, content, sound (preferred but not required) and characters. The game should be entertaining, exciting, and challenging and have social and educational value. Ten (10) bonus points may be added by the judges for exceptional game features, or for content showing exemplary educational or social value.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students portray educational, artistic and social concept graphic representations. Suggested leadership lessons: *Personality Types* and *Promote It*
- CREATIVE THINKING — Students develop new ideas that appeal to a wide audience. Suggested leadership lessons: *Color Hunt* and *Creative Techniques*
- ORGANIZATION — Students devise a plan and follow it. Suggested leadership lessons: *Impromtu* and *Whose Birthday Is It?*

Additional leadership skills promoted in this event: critical thinking, evaluation, teamwork

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Animator
Computer programmer
Electronic game designer
Electronic game technician
Writer

TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				

Advisor signature _____

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

1) Does your solution to the competitive event integrate any music? YES _____ NO _____

If NO, go to question 2.

If YES, is the music copyrighted? **YES _____ NO _____**

If YES, move to question 1A. If NO, move to question 1B.

1A) Have you asked for author permission to use the music in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission (OR use royalty free/your own original music) and if permission is granted, include the permission in your documentation.

1B) Is the music royalty free, or did you create the music yourself? If YES, cite the royalty free music OR your original music properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any music into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of music is done so with proper permission and is cited correctly in the student's documentation.

2) Does your solution to the competitive event integrate any graphics? YES _____ NO _____

If NO, go to question 3.

If YES, is the graphic copyrighted, registered and/or trademarked? **YES _____ NO _____**

If YES, move to question 2A. If NO, move to question 2B.

2A) Have you asked for author permission to use the graphic in your solution and included that permission (letter/form) in your documentation? If YES, move to question 3. If NO, ask for permission (OR use royalty free/your own original graphic) and if permission is granted, include the permission in your documentation.

2B) Is the graphic royalty free, or did you create your own graphic? If YES, cite the royalty free graphic OR your own original graphic properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any graphics into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics is done so with proper permission and is cited correctly in the student's documentation.

3) Does your solution to the competitive event use another's thoughts or research? YES _____ NO _____

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? If YES, this is the end of the checklist.

If NO, properly cite the thoughts/research of others in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any thoughts/research of others into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation.

VIDEO GAME DESIGN
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for first round: two (2) evaluators for every fifteen (15) entries or fraction thereof

C. Evaluators for second round: two (2) evaluators for groups of top five (5) entries

D. Evaluators for semifinalists: two (2) evaluators for the top twelve (12) semifinalists.

MATERIALS

A. Coordinator's notebook, containing:

1. Event guidelines, one (1) copy for the coordinator and for each evaluator
2. Official rating forms, one (1) set for each event evaluator
3. List of entries with finalist report
4. List of evaluators/assistants
5. Pens for evaluators
6. Notepads for evaluators
7. Calculators, one (1) for each event evaluator
8. At least two (2) devices capable of reading a DVD
9. Semifinalist list for posting
10. Results envelope

B. Tables for entries

C. Tables and chairs for initial evaluators

D. Tables and chairs for semifinalist evaluators and contestants

E. One (1) extension cord for each evaluation team and one (1) power-bar with surge protection per evaluation team

RESPONSIBILITIES

A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.

B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

C. Check in the entries at the time and place stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do not apply during check-in.

D. Place an entry number on each DVD and notebook. Secure the entries in the designated area.

E. At least one (1) hour before the evaluation of the entries is to begin, meet with your evaluators and check in personnel to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the evaluation begins.

F. Evaluators independently assess the entries.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Each group of evaluators totals its scores to determine the top five (5) entries from that group. The number of evaluator groups depends on the number of entries. There are two (2) evaluators for every fifteen (15) participants for the first evaluation round. The top five (5) entries from each group are forwarded to the event coordinator.

I. The groups of top five (5) entries are then assessed by two (2) new evaluators for a second evaluation round. The average of the four (4) scores [two (2) first round evaluations plus two (2) second round evaluations] determines the top twelve (12) semifinalists. The semifinalist list is posted.

J. The coordinator lists the semifinalists in random order on new rating forms that are given to the evaluators.

K. Semifinalists report to the event area at the time and place stated in the conference program. Each semifinalist team signs up for a time to present its game. During the interview, the semifinalist team members will explain their work and answer any questions the evaluators may ask.

L. Two (2) semifinalist evaluators independently assess the twelve (12) semifinalist teams.

M. Evaluators average their scores and add their result to the semifinalist's subtotal score for a maximum score of 160 points (150 base points and 10 bonus points). This final score determines the finalists and their ranking. Evaluators discuss and break any ties.

N. Complete and submit the finalist report and all related forms in the results envelope to the CRC room.

O. Collect all DVDs and notebooks and give them to the event manager.

P. If necessary, manage security and the removal of equipment and materials from the area.

Participant/Team ID# _____

VIDEO GAME DESIGN

2013 & 2014 OFFICIAL RATING FORM — **HIGH SCHOOL**

Documentation (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Notebook components See Regulation G (X1)	Three or more components are missing and the work is very unorganized.	Two or fewer components are missing, and/or they are loosely organized.	One or no components are missing from the notebook, and it is well organized.	
Purpose and description (X1)	The purpose and description are unclear; they are illogical and appear to be developed as an afterthought.	The purpose and description are somewhat coherent and include most goals, criteria, and constraints of the video game design.	Logical, clear, and concise statements of both the purpose and description are provided; they outline all of the video game's design parameters.	
Game directions and control function (X1)	The game explanation is difficult to follow; the functions provided are illogical or incorrect and do not match the game functions.	Game directions can be followed, but at times they do not sync with the overall workings of the game; most control functions match the functions of the game.	The game explanation is concise and easy to follow; control functions match the game functions.	
Storyboard (X1)	The storyboard is sloppy and disorganized, and/or it does not correlate with the actual game; it seems to have been created as an afterthought.	The storyboard correlates somewhat with the actual video game design, but the drawings are often unclear and/or lack quality.	The storyboard is of exceptional quality and correlates almost perfectly with the actual video game design; evidence suggests that the storyboard was created before the design of the video game.	
Plan of Work log and self-evaluation (X1)	The Plan of Work log and/or the self-evaluation are incomplete and/or missing key components.	The Plan of Work log and/or the self-evaluation are largely complete, though generalized.	A complete and concisely written Plan of Work log and self-evaluation are included; they interest the reader and incorporate the reflection of all team members.	
			SUBTOTAL (50 points)	

Game Design (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Creativity (X1)	The work lacks creativity; no, or very few, design principles are integrated into game.	Some elements of creativity are expressed, but essential design principles are missing or are not used effectively.	The work exudes creativity; essential design principles and elements are integrated.	
Artisanship (X1)	The work is illogical, unorganized and sloppy; the video game simply seems to be thrown together.	A somewhat logical game has been created, but not all design elements are incorporated.	There is exemplary use of layout and design elements, allowing for easy game play.	
Technical skill (X1)	Little technical skill is exhibited in the game design; levels of game construction are not fluid, and/or they are illogical.	A beginner's level of technical skill is exhibited in the game's design and construction.	The game exhibits a degree of mastery of video game design skill that few at this level possess.	

VIDEO GAME DESIGN (continued)				
Game Design (50 points) (continued)				
Storyline and flow of the game (X1)	There is little evidence of an actual story or method of game play; the game's flow is illogical and hinders the ability to play.	The storyline of the game and method of game play are somewhat entertaining; the game's flow still makes it difficult to play and/or understand.	The storyline and flow of the game directly contribute to the game's enjoyment and/or entertainment factors; the game is logical and interesting.	
Overall appeal (X1)	Playing the game is not enjoyable; interacting in game play is a struggle, due to the game's illogical sequencing.	The game is somewhat interesting, easy and enjoyable to play; most design concepts are incorporated.	The game is innovative and entertaining; design principles are incorporated, which make playing the game easy and enjoyable.	
			SUBTOTAL (50 points)	

Bonus (10 points)	
A bonus of ten (10) points is awarded for exceptional game features, or for content showing exemplary education or social value.	

Semifinalist Interview (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	The team seems unprepared and unorganized for the interview.	The team is prepared for the interview but is somewhat disorganized in its presentation.	The team's presentation and interview with judges are well organized and logical.	
Clarity (X1)	The team's presentation is full of illogical thoughts that lack clarity.	The team's presentation thesis is, for the most part, logical and/or clear.	A concise, logical and clear explanation of the thesis and pertinent issues is provided.	
Articulation (X1)	Verbose, illogical interview responses are given, with many "uhs, ums, hmms," etc.	Logical and well-spoken interview responses are provided, with few "uhs, ums, hmms," etc.	Team members are well spoken, distinct and clear in their interview responses; no or very few "uhs, ums, hmms," etc. are evident.	
Team participation (X1)	Only one team member communicates with the judges.	Team members participate equally, but only one member seems to fully understand the concepts.	Team members seem to fully understand the concepts and share an equal role in the interview.	
Knowledge (X1)	Team members seem to have very little understanding of the concepts in their project; vague interview answers are provided.	Team members have a general understanding of the concepts discussed and answer questions well.	There is clear evidence that team members have a thorough understanding of the concepts discussed; they answer all questions confidently.	
			SUBTOTAL (50 points)	

VIDEO GAME DESIGN (continued)

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (160 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

WEBMASTER

OVERVIEW

Participants are required to design, build and launch a World Wide Web site that features the school's career and technology education program, the TSA chapter, and the chapter's ability to research topics pertaining to technology. Conference semifinalists participate in an on-site interview to demonstrate the knowledge and expertise gained during the development of the website with an emphasis on Internet and web history, web design (school, chapter and design brief pages), and research about cutting edge advances in technology.

PURPOSE

Participants are provided with an opportunity to develop and use the skills necessary to effectively design, build, and launch a website.

ELIGIBILITY

Participants are limited to one (1) team of three (3) to five (5) members per TSA chapter. One (1) entry per team is permitted. The team will be represented by up to five (5) chapter members in the set-up and semifinalist team interview.

TIME LIMITS

A. All components of the chapter's entry must be finished and accessible via the Internet by midnight Eastern Daylight Time (EDT) on May 15. Note: After midnight May 15, changes should not be made to the website. If the team makes changes to the website after the evaluators begin the judging of the entry, those changes are not considered.

B. The Universal Resource Locator (URL) for the chapter's entry must be e-mailed to webentry@tsaweb.org by midnight on May 15. The subject line of the email must be: High School Webmaster. Further, the URL must point to the main web page of the career and technology education program part of the team entry. NOTE: webentry@tsaweb.org accepts submissions for national TSA competition only. Email verification of each team's entry is made by May 30. Five (5) days prior to the national

☑ Webmaster has unique entry requirements. Entries must be posted online by May 15.

TSA conference, links from the national TSA web site to all Webmaster entries become available.

C. Conference semifinalists participate in an on-site interview that lasts approximately five (5) minutes.

ATTIRE

Professional dress as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

A. Participants obtain the event design brief from the national TSA web site at www.tsaweb.org. (Criteria for the middle school and high school events are different.)

B. All questions pertaining to Webmaster must be emailed to webentry@tsaweb.org.

C. Participants design a website that features the following components: the school's career and technology education program, the TSA chapter, and the chapter's research about a technological topic. All portions of the website must be the original work of the team members.

D. The entries are evaluated prior to the national conference so that evaluators have ample opportunity to view the entries online.

E. A conference semifinalist list of twelve (12) entries in random order is posted at the conference on the first full day of competition.

F. Conference semifinalist teams must sign up for an interview. The specific place and time for interview scheduling is posted on the semifinalist list. The team must report back to the event area at the appropriate time.

G. Up to all five (5) team members from each conference semifinalist team report to the event area for the interview at the time and place posted on the semifinalist list.

H. Each team is interviewed by the evaluators for approximately five (5) minutes.

REGULATIONS

A. Participants must launch their entry on a web server that can be accessed via the Internet 24 hours a day, 7 days a week, 52 weeks per year.

☑ Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

B. Each entry must consist of:
   1. Original web pages that promote the school's career and technology education program (i.e., career and technology education classes offered at the school, course summaries, digital images that showcase the school technology education laboratory, teacher contact information, etc.)
   2. Original web pages that promote the school's TSA chapter (i.e., logo, motto, creed, officers, photos, chapter activities including school and community service projects, etc.)
   3. Original web pages that specifically display the chapter's research findings pertaining to a technology topic that is posed in an online technology design brief.

C. Career and technology courses and program pages
   1. This section has no minimum or maximum number of pages.
   2. The main page for this section must contain a link to the TSA chapter main page and the design brief main page.

D. TSA chapter pages
   1. This section has no minimum or maximum number of pages.
   2. The main page for this section must contain a link to the design brief main page.

E. Design brief pages
   1. This section has no minimum or maximum number of pages.
   2. The main page for this section must contain a link to the TSA chapter main page and the career and technology education program's main page.

F. All web pages must have been completed during the current school year.

G. If copyrighted material, such as text, images, or sound from other sources is used, proper written permission must be included. See Student Copyright Checklist, which must be completed and signed.

H. All entries are viewed with various versions of Internet Explorer, Chrome, Firefox, Safari, Opera, Flock or the most current state-of-the-art web browser software. Each entry will be viewed with whatever version of web browser software is available at the time of the national TSA conference.

I. Each chapter selects up to five (5) team members to represent the chapter in the on-site interview.

EVALUATION

A. Evaluation of the chapter entry includes overall design and originality, career and technology education content, local chapter information, and the scope and sequence of the design

brief solution. Also evaluated are the website's compatibility with different browsers, screen resolutions, and the appropriate use of new Internet and web-based applications.

B. The interview evaluates the team's knowledge and expertise pertaining to the entry in the following areas: overall website design and originality, career and technology education program, TSA chapter information, design brief, website compatibility with different browsers, monitor resolution, plug-ins, etc.

STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students communicate ideas through an online venue. Suggested leadership lessons: *Personality Types* and *Put It Together*
- CRITICAL THINKING — Students analyze and evaluate information. Suggested leadership lessons: *Put Yourself In Their Shoes* and *The Hidden Message*
- TEAMWORK — As part of a team, students contribute to the event project design and interview. Suggested leadership lessons: *Restaurant Business Plan* and *Stepping Stones*

Additional leadership skills promoted in this event: creative thinking, decision making, evaluation, organization, problem solving

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer engineer
Webmaster
Website designer
Web technician

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

1) Does your solution to the competitive event integrate any music? YES _____ NO _____

If NO, go to question 2.

If YES, is the music copyrighted? **YES _____ NO _____**

If YES, move to question 1A. If NO, move to question 1B.

1A) Have you asked for author permission to use the music in your solution and included that permission (letter/form) in your documentation? If YES, move to question 2. If NO, ask for permission (OR use royalty free/your own original music) and if permission is granted, include the permission in your documentation.

1B) Is the music royalty free, or did you create the music yourself? If YES, cite the royalty free music OR your original music properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any music into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of music is done so with proper permission and is cited correctly in the student's documentation.

2) Does your solution to the competitive event integrate any graphics? YES _____ NO _____

If NO, go to question 3.

If YES, is the graphic copyrighted, registered and/or trademarked? **YES _____ NO _____**

If YES, move to question 2A. If NO, move to question 2B.

2A) Have you asked for author permission to use the graphic in your solution and included that permission (letter/form) in your documentation? If YES, move to question 3. If NO, ask for permission (OR use royalty free/your own original graphic) and if permission is granted, include the permission in your documentation.

2B) Is the graphic royalty free, or did you create your own graphic? If YES, cite the royalty free graphic OR your own original graphic properly in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any graphics into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of graphics is done so with proper permission and is cited correctly in the student's documentation.

3) Does your solution to the competitive event use another's thoughts or research? YES _____ NO _____

If NO, this is the end of the checklist.

If YES, have you properly cited other's thoughts or research in your documentation? If YES, this is the end of the checklist.

If NO, properly cite the thoughts/research of others in your documentation.

CHAPTER ADVISOR: Sign below if your student has integrated any thoughts/research of others into his/her competitive event solution.

I, _____ (chapter advisor), have checked my student's solution and confirm that the use of the thoughts/research of others is done so with proper permission and is cited correctly in the student's documentation.

WEBMASTER
EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

A. Event coordinator

B. Evaluators for pre-conference evaluation of websites, two (2) or more

C. Evaluators for the semifinalist interviews, two (2) or more

MATERIALS

A. Coordinator's notebook, containing:
   1. Event guidelines, one (1) copy for the coordinator and for each evaluator
   2. Official rating forms (Entries are evaluated before the conference and only scores of the semifinalists are needed on site. These scores and any other materials required for judging are brought to the conference by the coordinator.)
   3. List of entries with the semifinalist report
   4. List of evaluators/assistants
   5. Pencils for evaluators
   6. Results envelope

B. List of questions for on-site interview

C. Internet Explorer, Chrome, Firefox, Safari, opera, Flock or most current state-of-the-art software

D. One (1) to three (3) laptop computers with high speed Internet capability

E. Evaluation of Webmaster entries takes place before the conference so that evaluators can post the conference semifinalist list on the first full day of the national TSA conference and have plenty of time for the on-site interviews.

RESPONSIBILITIES

A. Review entries as they are received by webentry@tsaweb.org Entries are allowed only until midnight Eastern Daylight Time on May 15. Send email verification to all entrants by May 30.

B. Five (5) days prior to the national TSA conference, make links available from the national TSA website to all Webmaster entries.

C. Manage communication and pre-conference evaluation of entries [at least two (2) evaluators are recruited earlier in the year]. Collect completed rating forms (signed by the evaluator) and bring them to the conference.

D. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/ assistants have been scheduled. Inspect the area or room in which the event is to be held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.

E. On the first full day of competition, post a list of the twelve (12) semifinalists in random order.

F. Review the time limits, procedures, and regulations with the evaluators. Clear up any questions or misunderstandings. Distribute guidelines for the interview.

G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager; all must initial either of these actions on the rating form.

H. Semifinalist teams report to the event area and sign up for an interview time. Manage completion of the on-site interviews.

I. Evaluators turn in their signed rating forms and complete the finalist report. Evaluators discuss and break any ties that affect the top three (3) placements. NOTE: Determine the procedure for breaking ties before the on-site competition begins.

J Submit the finalist report, including a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.

Participant/Team ID# _____

WEBMASTER

2013 & 2014 OFFICIAL RATING FORM — HIGH SCHOOL

Website (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points) or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the far right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.)				
Content (X1)	There are several inaccuracies in the content provided, and/or many of the requirements are not met; there is not enough, or very incomplete, content.	Most information provided by the students on the website is accurate; however, not all of the requirements of the assignment have been met; information is not complete.	All information provided by the students on the website is accurate and all the requirements of the assignment have been met; there is sufficient content in the website to learn about the topic and complete a research assignment.	
Layout (X1)	The web pages are cluttered-looking or confusing; it is often difficult to locate important elements.	The web pages have an attractive and usable layout; it is easy to locate all important elements.	The web site has an exceptionally attractive and usable layout. It is easy to locate all important elements; white space, graphic elements and/or alignment are used effectively to organize material.	
Graphics (X1)	Graphics seem randomly chosen, are of low quality, and/or distract the reader; many images are broken.	Graphics relate to the theme/ purpose of the site; most are of good quality and enhance reader interest or understanding; there are no broken images.	Graphics relate well to the theme/purpose of the site; they are thoughtfully cropped, are of high quality and enhance reader interest or understanding; there are no broken images.	
Navigation (X1)	Some links do not take the reader to the sites described; a user may become lost.	Most links for navigation are clearly labeled, and they allow the reader to move from a page to related pages (forward and back); internal links take the reader where s/he expects to go; a user rarely becomes lost.	Links for navigation are clearly labeled and consistently placed; they allow the reader to easily move from a page to related pages (forward and back), and take the reader where s/he expects to go; a user does not become lost.	
Color scheme (X1)	Colors, fonts, and unvisited and visited links make the content hard to read or otherwise distract the reader.	Colors, fonts, and unvisited and visited links do not detract from the content and are consistent across pages.	Colors, fonts, and unvisited and visited links form a pleasing palette, do not detract from the content, and are consistent across pages.	
Interest (X1)	The authors have provided only the minimum amount of information and have not made the information interesting to the audience.	The authors have tried to make the content of the website interesting to the people for whom it is intended.	The authors have put forth exceptional effort to make the content of the website interesting to the people for whom it is intended.	

WEBMASTER (continued)				
Website (100 points) (continued)				
Spelling and grammar (X1)	There are many spelling and/or grammatical errors in the site.	There are a few spelling and/or grammatical errors in the site.	There are no spelling or grammatical errors, or one or two very minor spelling and/or grammatical errors in the site.	
Research base (X1)	The website lacks an adequate research base, and/or very few credible sources are referenced.	Research has been conducted appropriately, but there are few credible sources.	The website presents a comprehensive research base that includes a number of credible sources.	
Design brief solution (X2)	The design brief is missing three or more criteria and/or constraints.	The design brief is missing one or two criteria and/or constraints.	All components of the design brief are included in the website.	
			SUBTOTAL (100 points)	
Semifinalist Interview (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Articulation (X1)	The interview responses are verbose, illogical and include many “uhs, ums, hmms,” etc.	Logical and well-spoken interview responses are provided, with a few “uhs, ums, hmms,” etc.	Well spoken, distinct, and clear interview responses are provided with no or very few “uhs, ums, hmms,” etc.	
Knowledge (X2)	Team members seem to have very little understanding of the concepts in their project; vague interview answers are provided.	Team members have a general understanding of the concepts discussed and answer questions adequately.	There is clear evidence that team members have a thorough understanding of the concepts discussed; excellent interview answers are provided.	
Delivery (X1)	The delivery detracts from the message; eye contact is limited; presenters tend to look at the floor, mumble, speak inaudibly, fidget, or read most of the speech; gestures and movements may be jerky or excessive.	The delivery is generally effective, but volume, eye contact, vocal control, etc. may not be consistent; some hesitancy is observed, however, tone, facial expressions, and/or other nonverbal expressions do not detract from the message.	The delivery is extemporaneous, natural, confident, and enhances the message; posture, eye contact, gestures, facial expressions, volume, pace, etc., are excellent and indicate confidence.	
Team participation (X1)	Only one person in the group communicates with judges, with no participation from other team members.	Most team members participate, but only one member seems to fully understand the concepts.	All team members seem to fully understand the concepts and share an equal role in the interview.	
			SUBTOTAL (50 points)	

Rules violations (a deduction of 20% of the total possible points) must be initialed by the evaluator, coordinator and manager of the event. Record the deduction in the space to the right.	
(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (150 points)**	

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____

EVENT PROPOSAL INFORMATION

As technology changes and technology education attempts to keep pace and reflect these changes, new TSA events are added, some are revised, and others are dropped. TSA chapter advisors, state advisors, and others are encouraged to submit proposals for new events.

The following topics reflect potential direction for development:

Lasers/satellites/radar	Manufacturing technology
Engineering	Communications technology
Conference on-site activities	Transportation technology
Economic development	Environmental technology
Future technologies	Innovative power sources
Biotechnology problem solving	21st century technology
Electronic publishing	Hands-on based activities
STEM	Curriculum based activities
At-risk students and technological literacy	Green technology

When submitting a proposal for consideration, include these elements:

- Overview — a statement indicating general areas of focus
- Event purpose
- Eligibility for entry
- Limitations
- Specific regulations
- Required personnel
- Standards — a summary of how this event fits into science, technology, engineering and mathematics (STEM) standards

Formative ideas are welcome, but the more complete the proposal the less likely it will be misinterpreted. The event development committee acknowledges all submissions, and each is given consideration by the Competition Regulations Committee (CRC) for possible inclusion in a competitive events guide. Proposals must be submitted by October 1, 2014 to be considered for the next guide. Once submitted, ideas and events become the property of TSA, Inc.

Include your signature and complete address, and, if possible, the signature of your state advisor. Mail proposals to CRC Chairperson, c/o National TSA, 1914 Association Drive, Reston, VA 20191-1540.

EVENT REVISION SUGGESTION

As TSA expands in membership and participation in competitive events increases, parts of various competitive events (e.g., length of time of interviews) need revision. Also, whenever guidelines are misinterpreted, they are revised for better clarity. TSA encourages input from concerned persons so that competitive events continue to improve. Please use this form for comments. (Use one form for each suggestion.)

Event title _____

Note the exact section and page number in *2013 & 2014 High School Technology Activities*, *National TSA Conference Competitive Events Guide* to which you are referring.

State your suggestion. Be very specific. List exactly what should be deleted, replaced, and/or added to the event rule or procedure.

Give your rationale. List the pros and cons from your point of view.

What are the STEM standards addressed by this change?

Obtain signatures.

_____

Your signature Date State advisor's signature Date

_____

Your address/city/state/zip

_____ _____

Signature* Date Signature* Date

* Include signatures of two people from different TSA chapters who support your suggestion.

Mail to: CRC Chairperson, c/o National TSA, 1914 Association Drive, Reston, VA 20191-1540

RULES INTERPRETATION PANEL GRIEVANCE

Site of national TSA conference _____

Advisor's name _____

Chapter name _____

School name _____

Competitive event (including level) _____

Student or team identification number _____

STATEMENT OF CONCERN (Please print or type.)

_____

Signature of advisor Date

_____

Signature of state advisor Date

The decisions of the Rules Interpretation Panel (RIP) at the national conference are final.

RULES INTERPRETATION PANEL
RESPONSE TO GRIEVANCE

Panel members:

_____

Signature Date

_____

Signature Date

_____

Signature Date

Site of national TSA conference _____

Date _____

Competitive event (including level) _____

Student or team identification number _____

Advisor's name _____

Advisor's mobile phone number _____

STATEMENT OF RESPONSE

The decisions of the Rules Interpretation Panel (RIP) at the national conference are final.