

2011 & 2012

HIGH SCHOOL

TECHNOLOGY

ACTIVITIES

National TSA Conference
Competitive Events Guide

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



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TSA, THE ORGANIZATION

The Technology Student Association (TSA) is the only student organization devoted exclusively to the needs of students with a strong interest in technology. Open to those who are enrolled in or who have completed technology education courses, TSA is composed of over 150,000 middle and high school students 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. With your guidance, we hope 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.

 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 on the TSA website at www.tsaweb.org.

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 *2011 & 2012 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 and 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 Vandergriff, Ed.S
CRC Chairperson

Rosanne White, Ed.D.
TSA Executive Director



HIGH SCHOOL PROGRAM

EVENTS

The officially approved high school competitive events for the 2011 and 2012 national TSA conferences are as follows:

Animatronics
Architectural Model
Biotechnology Design
Career Comparisons
Chapter Team
Computer-Aided Design (CAD) 2D, Architecture
Computer-Aided Design (CAD) 3D, Engineering
Construction Renovation
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
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 another configuration other than the examples above, call 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. Projects and products can be entered only one (1) year.
- I. Entries must be started and completed during the current school year. All entries must be in English.
- 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. For all applicable competitive events, written work—including citations or references—must follow MLA (Modern Language Association) style.
- M. 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 MLA (Modern Language Association) style, the most current edition. If copyrighted material is used, proper written permission must be included. Failure to follow this procedure results in disqualification.
- N. 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.
- O. 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.
- P. 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.
- Q. In case of a scheduling conflict that prevents a member from participating in an event, the participant has the right to decide which event entry is eliminated.
- R. 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.

 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 (W)

highlights what has always been true—student participants must be in attendance for the duration of the conference.

 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!

- S. 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 is confidential and is not disclosed. 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.)
- T. Hazardous materials, chemicals, lighted or open flames, combustibles, wet cell batteries, and other similar substances are not allowed at the national TSA conference.
- U. Recording devices are not allowed in certain competitive events. CRC manager and event coordinator approval is required before any event may be recorded.
- V. 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.
- W. All adult advisors, chaperones, and student participants must be in attendance for the duration of the conference.
- X. 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.
- Y. 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 contest. The event manager must sign off on both a 20% deduction and a disqualification.

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 and females)

Shirt or blouse: white, button-up with turn down collar

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: female only

Tie: required for males and optional for females

Dress pants: (unacceptable: jeans, baggy pants, exterior pockets pants)

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



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



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.

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 of 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, it is suggested that event coordinators record the specific rule letter and number that represent the violation. The rating form must be initialed by the 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 specific 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. Science as inquiry
 - 1. Abilities necessary to do scientific inquiry
 - 2. Understandings about scientific inquiry
- B. 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
- C. 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
- D. 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
- E. Science and technology
 - 1. Abilities of technological design
 - 2. Understandings about science and technology
- F. 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
- G. History and nature of science
 - Unless otherwise designated in a competition's eligibility guideline, the maximum size of a team is six (6) members.
 - 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, 1995* by the National Academy of Sciences, courtesy of the National Academies Press, Washington, DC.

		SCIENCE CONTENT STANDARDS																												
Event	Standard Number	A1	A2	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	E1	E2	F1	F2	F3	F4	F5	F6	G1	G2	G3
1. Animatronics																														
2. Architectural Model																														
3. Biotechnology Design																														
4. Career Comparisons																														
5. Chapter Team																														
6. Computer-Aided Design (CAD) 2D, Architecture																														
7. Computer-Aided Design (CAD) 3D, Engineering																														
8. Construction Renovation																														
9. Debating Technological Issues																														
10. Desktop Publishing																														
11. Digital Video Production																														
12. Dragster Design																														
13. Engineering Design																														
14. Essays on Technology																														
15. Extemporaneous Speech																														
16. Fashion Design																														
17. Flight Endurance																														
18. Future Technology Teacher																														
19. Manufacturing Prototype																														
20. Music Production																														
21. On Demand Video																														
22. Photographic Technology																														
23. Prepared Presentation																														
24. Promotional Graphics																														
25. SciVis																														
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27. System Control Technology																														
28. Technical Sketching and Application																														
29. Technology Bowl																														
30. Technology Problem Solving																														
31. Transportation Modeling																														
32. Video Game Design																														
33. Webmaster																														



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)

Event	Standard Number	Technology Content Standards																			
		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	x	x	x	x	x	x	x	x	x
2. Architectural Model		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
4. Career Comparisons				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5. Chapter Team					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6. Computer-Aided Design (CAD) 2D, Architecture		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7. Computer-Aided Design (CAD) 3D, Engineering		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8. Construction Renovation					x	x	x	x	x	x	x	x	x	x	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	x	x	x	x	x	x
10. Desktop Publishing			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11. Digital Video Production		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12. Dragster Design		x	x	x	x	x	x	x	x	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
14. Essays on Technology		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15. Extemporaneous Speech		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16. Fashion Design			x	x	x	x	x	x	x	x	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	x	x	x	x	x
18. Future Technology Teacher			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19. Manufacturing Prototype				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20. Music Production					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21. On Demand Video						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22. Photographic Technology						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
23. Prepared Presentation						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24. Promotional Graphics						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25. SciVis						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26. Structural Engineering						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27. System Control Technology						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28. Technical Sketching and Application						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
29. Technology Bowl						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
30. Technology Problem Solving						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31. Transportation Modeling						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
32. Video Game Design						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
33. Webmaster							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x



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



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					
2. Architectural Model		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							
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	X	X	X	X	X	X	X	X	X	X	X	X							
4. Career Comparisons																																										
5. Chapter Team																																										
6. Computer-Aided Design (CAD) 2D, Architecture		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							
7. Computer-Aided Design (CAD) 3D, Engineering		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							
8. Construction Renovation																																										
9. Debating Technological Issues																																										
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21. On Demand Video																																										
22. Photographic Technology																																										
23. Prepared Presentation																																										
24. Promotional Graphics																																										
25. SciVis																																										
26. Structural Engineering																																										
27. System Control Technology																																										
28. Technical Sketching and Application																																										
29. Technology Bowl																																										
30. Technology Problem Solving																																										
31. Transportation Modeling																																										
32. Video Game Design																																										
33. Webmaster																																										



TSIA AND THE LEADERSHIP COMPONENT

At one time, the art of learning and practicing leadership skills, such as of 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 is 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* (an ITEEA/ITEA publication)] that students learn by participating in TSA's competitive events program. In the *2011 & 2012 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 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.

TSA believes that acquiring leadership skills is critical to the success of young people in technology. The high school leadership lessons



leadership skills learned through TSA competitive events:

creative thinking

critical thinking

communication

decision making

ethics

evaluation

organization

problem solving

self-esteem

teamwork

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 – A 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.



HIGH SCHOOL LEADERSHIP LESSONS

► 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 (best case scenario) 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? etc. Have students share and record their thoughts and examples in their leadership portfolios.



TSA AND CAREERS

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. They were developed by the U.S. Department of Education in order to organize career planning and help schools better prepare learners for their futures. *The 16 Careers Clusters* chart offers general information about career categories and the kinds of work opportunities prominent in those areas. The *TSA Competitions and Career Clusters* grid illustrates the interconnectedness between individual TSA competitions and the 16 career categories. Use both of 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)

 Manufacturing	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)
 Marketing, Sales & Service	Planning, managing, and performing marketing activities to reach organizational objectives. (N)
 Science, Technology, Engineering & Mathematics	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)
 Transportation, Distribution & Logistics	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)

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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 Model		X	X		X		X	X	X	X	X	X		X		X	
Biotechnology Design		X	X						X					X		X	X
Career Comparisons		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				
Construction Renovation		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		
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	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



EVENTS

Animatronics
Architectural Model
Biotechnology Design
Career Comparisons
Chapter Team
Computer-Aided Design (CAD) 2D, Architecture
Computer-Aided Design (CAD) 3D, Engineering
Construction Renovation
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
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



ANIMATRONICS

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

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 semifinalist 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. Point deductions will be assessed 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 check in their entries at the time and place stated in the conference program.
- B. Each team will submit a notebook and model at the designated check-in time specified in the conference program.
- C. During check-in, each team selects a demonstration time from the available times posted. When selecting a demonstration time, teams should avoid conflicts with other events for which team members are registered.
- D. 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.

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 display may not exceed 48" wide, 48" high and 30" deep.
- B. The animtronics project 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. 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. Some form of fluid power system must be incorporated to aid in the movement of the animtronics device. If no use of fluid power is incorporated, the animtronics device will lose the maximum of ten (10) points, which are awarded for incorporating a fluid power system into the device.
- 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:
 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
 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 as a power source.
- 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.nimbacreations.com
www.animalmakers.com
www.garnerholt.com
www.dreamation.com/Animatronics.htm



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 Building Plan*

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

TSA AND CAREERS

This competition has connections 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 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

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

- A. Coordinator's notebook, containing:
 - 1. Event guidelines, one (1) copy each for coordinator and evaluators
 - 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. Results envelope
- B. Table for presentation
- C. Table 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(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 twenty percent (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. Secure the initials of the coordinator and manager 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.



ANIMATRONICS

2011 & 2012 OFFICIAL RATING FORM**HIGH SCHOOL**

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (20 pts.)											
Cover page	1 pt.										
Title page	1 pt.										
Table of contents	1 pt.										
Description of purpose.....	3 pts.										
Design and test log	10 pts.										
List of resources	2 pts.										
Plan of Work log	2 pts.										
Presentation (20 pts.)											
Clear and concise communication	5 pts.										
Organization	5 pts.										
Demonstration of knowledge and poise	5 pts.										
Equal team participation	5 pts.										
Model appearance (20 pts.)											
Creativity/originality	5 pts.										
Entertainment value	5 pts.										
Educational value	5 pts.										
Aesthetics	5 pts.										
Model performance (40 pts)											
Three (3) separate movements	5 pts.										
Sound inclusion	5 pts.										
Lights inclusion	5 pts.										
Sensor inclusion	5 pts.										
Use of gears, linkages, cabling systems, etc.	10 pts.										
Inclusion of a fluid power system	10 pts.										
SUBTOTAL	100 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
TOTAL	100 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____						Signature: _____					



ARCHITECTURAL MODEL

OVERVIEW

Participants develop a set of architectural plans and related materials for an annual architectural design challenge and construct an architectural model to accurately depict their design.

In 2011 participants design a museum for manual arts, industrial arts, and technology education.

In 2012 participants design a senior citizen day care center.

PURPOSE

Demonstrate an understanding and aptitude for the process of architectural design, development of plans, and basic modeling techniques.

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 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. A semifinalist list in random order is posted.



Participants in this event should concentrate their efforts on the planning and design process prior to beginning the construction of the model.



- C. 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.
- D. Semifinalists will utilize their models and documentation for reference during the interview process.
- E. 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 plastic front sleeve for the cover page should be used for this notebook. The cover page must include an original graphic design that incorporates aspects of the student/team architectural design, as well as the event title, theme, conference city and state, and the current year. 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
 3. A description of the style and merits of the design concepts; one (1) page
 4. 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
 5. 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 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
 6. 3D drawings/renderings, if included [drawing sheet cut size B—(11" x 17")]; pages as needed
 7. List of resources/references; 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.

8. 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
- C. Nothing that identifies the participant's name, school, chapter, or state can be included on the model or notebook.
- D. Model construction materials and techniques:
 1. Balsa wood, illustration board, or similar materials are suggested (but not limited to) for use as interior walls, exterior walls, and roof construction.
 2. Foam-core board is to be used for the base of the model as well as the site board. To prevent warping of the site board, students may choose to laminate two pieces together or to use a larger thickness of foam-core board. They also may add a simple frame underneath. A piece of plywood laminated or added to the base should not be used because of the increased weight.
 3. Dowels may be used to represent columns or circular components
 4. A variety of commercially produced materials is available that may be used to illustrate or simulate the appearance of regular construction materials. Although these materials may be used to enhance a model, they are not recommended for use or required. Participants choosing to use any of these materials are reminded to pay close attention to the scale of the materials as they relate to the scale of the model.
 5. The model may not include any electrical or battery powered enhancements.
 6. Only the items listed specifically in Regulations A-D are to be included with the model and notebook.
- E. Model construction – All participants in this event are encouraged to contact a local architect or a school of architectural design 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.

No glass or liquid may be used as part of any 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, four (4) copies
 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 twenty percent (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. Secure the initials of the coordinator and manager 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.

ARCHITECTURAL MODEL

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook development (40 pts)											
Cover page (graphic of the design).....1 pt.											
Title page1 pt.											
Table of contents1 pt.											
Design description/											
concept justification and merits6 pts.											
Interior/exterior finish materials schedule2 pts.											
Plans (reproduction copies, 11x17 with scale noted)											
Floor.....5 pts.											
Sectional5 pts.											
Foundation5 pts.											
Roof.....5 pts.											
Landscape.....5 pts.											
References/resources2 pts.											
Plan of Work log (team entries only)2 pts.											
Subtotal_____											
Design process (25 pts.)											
Effective representation											
of the design problem5 pts.											
Traffic flow pattern/room arrangement5 pts.											
Planning design within each room/area5 pts.											
Exterior design/aesthetic appeal5 pts.											
Creativity and innovation5 pts.											
Subtotal_____											
Architectural model (15 pts)											
(24" square site board with foam core model and site board base)											
Quality of construction5 pts.											
Appropriate and effective use of materials5 pts.											
Effectiveness in representing and											
depicting the design5 pts.											
Subtotal_____											
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.											
SUBTOTAL80 pts.											
Interview (semifinalists only)20 pts.											
TOTAL100 pts.											
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 2011 is Genetic Engineering.

The biotechnology area of focus for 2012 is Pharmaceutical/Agricultural Chemicals.

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.



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.



PROCEDURE

- A. Team members choose a contemporary biotechnology issue related to the current year's designated area of focus that they would like to research. Resources may include but are not limited to books, interviews, web sites, 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 are 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 title of the project/problem, 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:
 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
 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. ACD 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. A model or prototype is required.
 3. 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.
 4. If operating instructions are necessary, they must be clearly displayed.
 5. **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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) each for coordinator and evaluators
 - 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 foot 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 twenty percent (20%) of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and CRC manager. Secure the initials of the coordinator and manager 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 set up with a computer and monitor.
- 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.



BIOTECHNOLOGY DESIGN

2011 & 2012 OFFICIAL RATING FORM**HIGH SCHOOL**

PARTICIPANT/TEAM ID#												
EVALUATIVE CRITERIA												
Documentation (45 pts.)												
Cover page	1 pt.											
Title page	1 pt.											
Table of contents	1 pt.											
Explanation of problem	4 pts.											
Solution to problem	8 pts.											
Multimedia printout	3 pts.											
Supporting graphics (logs, graphs, etc.)	4 pts.											
Plan of Work log	3 pts.											
References and resources	5 pts.											
CD or DVD with the team's multimedia presentation	5 pts.											
Overall quality and effectiveness	10 pts.											
Display (55 pts.)												
Effective communication of problem	12 pts.											
Effective communication of solution (Models, if present, are evaluated here.)	15 pts.											
Creativity	10 pts.											
Artisanship and overall quality of display	18 pts.											
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.											
SUBTOTAL	100 pts.											
Interview— semifinalists only (25 pts.)												
Presentation is well-organized, clear, and articulate with participation from both representatives	10 pts.											
Multimedia presentation is used effectively	5 pts.											
Responses to questions are thoughtful and knowledgeable	10 pts.											
TOTAL	125 pts.											
Comments:												
I certify these results to be true and accurate to the best of my knowledge.												
<u>Evaluator</u>												
Printed name: _____ Signature: _____												



CAREER COMPARISONS

OVERVIEW

During the school year participants thoroughly research various technology-related careers that are associated with one (1) of the given technology areas listed below. After documenting the research, each student submits a cover letter and resume for one (1) of the careers and completes a job application on site. Semifinalists also participate in an on-site job interview.

Choose one (1) of the following technology-related career areas and research three (3) careers within that area.

- Biotechnology
- Communications
- Energy and power
- Engineering
- Manufacturing
- Medical technology
- Science and mathematics
- Transportation
- Construction

PURPOSE

Participants document a notebook demonstrating research in three (3) different careers in a given technological area. Prepare a resume and cover letter for one (1) of the careers, complete a formal job application for the career, and be prepared to participate in a mock interview as a semifinalist.

ELIGIBILITY

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

TIME LIMITS

- A. Each participant is allowed fifteen (15) minutes to complete a job application.
- 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 three (3) careers within the selected technology area and gain enough understanding to answer job-specific questions. 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. Research should include at least one (1) of the following, with proper documentation (and citing of sources, as necessary) for the experience:
 1. Job shadow
 2. Personal interview
 3. Volunteer effort
 4. Tour of facility
 5. Internship experience
- C. Participants report to the event area at the time and place stated in the conference program.
- D. Each participant brings a completed resume and cover letter, and a black or blue ink pen with which to fill out a job application. Participants are encouraged to use an erasable pen or, as an alternative, they may bring Wite-Out (or some other liquid correction fluid) to use for the application, as needed.
- E. Upon completion of the job application, participants turn in entries comprised of a resume, a cover letter and a job application.
- F. Entries are reviewed by evaluators to determine the twelve (12) semifinalists. Neither students nor advisors are present at this time.
- G. A semifinalist list in random order is posted.
- H. Semifinalists report to the event area at the time and place stated in the conference program to schedule and participate in a mock interview.



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

- I. Participants pick up their notebooks from the display area at the time and place stated in the conference program.

REGULATIONS

- A. All notebooks must be complete before entering the event area.
- B. No materials other than a notebook, a black or blue ink pen and Wite-Out (or some other liquid correction fluid to use for the application, as needed) may be brought into the event area
- 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:
 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
 3. Brief description of each career researched; up to two (2) pages for each of three (3) careers
 4. Description and documentation of job shadow, personal interview, volunteer effort, tour, or internship; up to two (2) pages
 5. Resume; up to two (2) pages
 6. Cover letter; one (1) page
- D. Only participants are allowed in the event area. Should a participant finish before the allotted time, s/he is allowed to leave quietly but may not re-enter the event area.

 Using your own identity is expected and highly recommended.

EVALUATION

Evaluation is based on the individual components of the problem. All scores carry over to the final score.



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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, cover letter and application. 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 has connections 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 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 COMPARISONS

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, four (4) copies
 - 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. Copies of blank job application for each participant
- C. Interview questions appropriate to the annual selection of technology-related careers
- D. Stapler and staples
- E. Tables and chairs for participants
- F. Tables and chairs for evaluators

RESPONSIBILITIES

Job application

- 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 twenty percent (20%) of the total possible points or disqualify the entry must be discussed and verified with the evaluators, event coordinators, and a CRC manager. Secure the initials of the coordinator and manager on the rating forms.
- E. Participants may begin filling out the job application upon their arrival to the event as long as their names appear on the list of entries. Ideally, there will be enough space for all participants at one table, but depending upon space constraints and the number of entries, participants may have to be rotated into the room.
- F. Each entry must include the participant's identification number in the upper right-hand corner of the entry.
- G. Place completed job application inside notebook and turn in to the judges.
- H. Evaluators independently assess the entries and then tally their rating forms.
- I. 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.

Mock interview

- A. Inspect the area(s) in which the interviews are being 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.

CAREER COMPARISONS

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (3 pts.)											
Cover page1 pt.											
Title page1 pt.											
Table of contents1 pt.											
Research (30 pts.)											
Binder format, neatness, spelling and punctuation .5 pts.											
Evidence of research of three (3) careers15 pts.											
Other supporting information10 pts.											
Resume and cover letter (27 pts.)											
Organization6 pts.											
Content (clear, concise, pertinent)12 pts.											
Neatness4 pts.											
Format, spelling and punctuation5 pts.											
Job application (10 pts.)											
Completeness3 pts.											
Neatness, spelling4 pts.											
Knowledge of career position3 pts.											
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.											
SUBTOTAL70 pts.											
Interview, semifinalists only (30 pts.)											
Introduction5 pts.											
Content of answers10 pts.											
Confidence, maturity, enthusiasm5 pts.											
Personal appearance (poise, posture, eye contact)5 pts.											
Voice/language (grammar, clarity)5 pts.											
TOTAL100 pts.											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____						Signature: _____					



CHAPTER TEAM

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 comprised of the same six (6) members.

TIME LIMITS

In this event, the top ten (10) scoring middle schools and high schools are recognized, and the top three (3) of both levels receive trophies.

- 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



Each additional thirty (30)-second period over the time limit is a five (5)-point penalty.

ATTIRE

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

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.]

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.

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.

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.



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

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

- 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. Chapter paraphernalia (officer symbols and gavel only) is 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 or non-programmable calculator may be used by a chapter team if desired.
- I. Official timing will stop at the team's final gavel to end the meeting.
- J. 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. Five (5) points will be deducted for every thirty (30)-second interval over the allotted time.
- K. All materials given to team members, including the chapter minutes recorded during the demonstration, must be given to the evaluators before the team leaves the room.
- L. 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.

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, please refer to pages 451-456 in the publication noted above (*Robert's Rules of Order, Newly Revised*).

STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, three (3)
- 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, four (4) copies
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluators/assistants
 - 5. Opening and closing ceremonies script
 - 6. The TSA Creed
 - 7. List of parliamentary actions
 - 8. Copies of secretary's minutes
 - 9. Copies of treasurer's report
 - 10. Paper, pens, one (1) calculator
 - 11. Semifinalist list for posting
 - 12. 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

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 twenty percent (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. Secure the initials of the coordinator and manager 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.

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.



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 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 additional pages as necessary)

Secretary's signature _____ Date _____

CHAPTER TEAM

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

	PARTICIPANT/TEAM ID#																				
EVALUATIVE CRITERIA																					
<p>Team written test score10 pts. (computed by dividing the team average by 5)</p>																					
<p>Team appearance (24 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Poise</td> <td>12 pts.</td> </tr> <tr> <td>Official dress</td> <td>12 pts.</td> </tr> </table>												Poise	12 pts.	Official dress	12 pts.						
Poise	12 pts.																				
Official dress	12 pts.																				
<p>Preparation of meeting place (10 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Placement of flags</td> <td>3 pts.</td> </tr> <tr> <td>Placement of officer symbols</td> <td>6 pts.</td> </tr> <tr> <td>Officer seating arrangement</td> <td>1 pt.</td> </tr> </table>												Placement of flags	3 pts.	Placement of officer symbols	6 pts.	Officer seating arrangement	1 pt.				
Placement of flags	3 pts.																				
Placement of officer symbols	6 pts.																				
Officer seating arrangement	1 pt.																				
<p>Knowledge of TSA procedures (28 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Opening ceremonies (3 pts. per officer)</td> <td>18 pts.</td> </tr> <tr> <td>Closing ceremonies</td> <td>10 pts.</td> </tr> </table>												Opening ceremonies (3 pts. per officer)	18 pts.	Closing ceremonies	10 pts.						
Opening ceremonies (3 pts. per officer)	18 pts.																				
Closing ceremonies	10 pts.																				
<p>Knowledge of parliamentary procedure (70 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Correct order of business</td> <td>5 pts.</td> </tr> <tr> <td>Voting procedures</td> <td>5 pts.</td> </tr> <tr> <td>Debate (quality and quantity, excluding president, 3 pts. per officer)</td> <td>15 pts.</td> </tr> <tr> <td>Three (3) given parliamentary actions</td> <td>30 pts.</td> </tr> <tr> <td>Additional motions and parliamentary actions (done correctly 3 pts. each, up to 15 pts.).....</td> <td>15 pts.</td> </tr> </table>												Correct order of business	5 pts.	Voting procedures	5 pts.	Debate (quality and quantity, excluding president, 3 pts. per officer)	15 pts.	Three (3) given parliamentary actions	30 pts.	Additional motions and parliamentary actions (done correctly 3 pts. each, up to 15 pts.).....	15 pts.
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Three (3) given parliamentary actions	30 pts.																				
Additional motions and parliamentary actions (done correctly 3 pts. each, up to 15 pts.).....	15 pts.																				
<p>Communication (18 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Grammar</td> <td>6 pts.</td> </tr> <tr> <td>Enunciation</td> <td>6 pts.</td> </tr> <tr> <td>Volume</td> <td>6 pts.</td> </tr> </table>												Grammar	6 pts.	Enunciation	6 pts.	Volume	6 pts.				
Grammar	6 pts.																				
Enunciation	6 pts.																				
Volume	6 pts.																				
<p>Chapter minutes (15 pts.)</p> <table style="margin-left: 20px;"> <tr> <td>Completeness and accuracy</td> <td>10 pts.</td> </tr> <tr> <td>Format</td> <td>2 pts.</td> </tr> <tr> <td>Grammar, legibility</td> <td>3 pts.</td> </tr> </table>												Completeness and accuracy	10 pts.	Format	2 pts.	Grammar, legibility	3 pts.				
Completeness and accuracy	10 pts.																				
Format	2 pts.																				
Grammar, legibility	3 pts.																				
<p>Time deduction Five (5) points per 30-second interval over the 15 minutes allotted _____</p>																					
<p>Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.</p>																					
<p>TOTAL175 pts.</p>																					
<p>Comments:</p>																					
<p>I certify these results to be true and accurate to the best of my knowledge.</p>																					
<p><u>Evaluator</u></p>																					
<p>Printed name: _____ Signature: _____</p>																					



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

CAD involves two (2) separate events:

CAD 2D, Architecture

CAD 3D, Engineering

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

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

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.

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 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. Printed entries are labeled with each participant's conference identification number and collected.
- H. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.
- I. Participants break down and remove their equipment.

REGULATIONS

- A. Participants provide their own systems, including hardware [only one (1) CPU and one (1) monitor], 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, five (5) copies
 - 2. Official rating forms, nine (9) copies (3 per evaluator)
 - 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 twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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.

COMPUTER-AIDED DESIGN (CAD) 2D, ARCHITECTURE		HIGH SCHOOL									
2011 & 2012 OFFICIAL RATING FORM											
PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Design, originality, and creativity (25pts.)											
Design 10 pts.											
Functionability 10 pts.											
Originality 5 pts.											
Sheet layout and views of details (15pts.)											
Views 5 pts.											
Details 5 pts.											
Lettering 5 pts.											
Standards and symbols (20pts.)											
Drawing uses appropriate symbols 6 pts.											
Drawing uses appropriate architectural standards 9 pts.											
Scale 5 pts.											
Aesthetics 10 pts.											
Use of CAD functions 10 pts.											
Use of features 10 pts.											
Dimensions 5 pts.											
Scale 5 pts.											
SUBTOTAL 100 pts.											
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.											
TOTAL 100 pts.											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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

- CAD involves two (2) separate events:
 - CAD 2D, Architecture
 - CAD 3D, Engineering

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.

- 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. Printed entries are labeled with each participant's conference identification number and collected.
- H. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.
- I. 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, five (5) copies
 2. Official rating forms, nine (9) copies (3 per evaluator)
 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 twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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.

COMPUTER-AIDED DESIGN (CAD) 3D, ENGINEERING

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#													
EVALUATIVE CRITERIA													
Modeling technique (25 pts.)													
Correct geometry 15 pts.													
Appropriate procedures 10 pts.													
Dimensioning (correct size and porportion) 10 pts.													
Design, originality, and creativity (25 pts.)													
Design 10 pts.													
Functionality 10 pts.													
Originality 5 pts.													
Orientation of the model 15 pts.													
Use of engineering (15 pts.)													
Practices 9 pts.													
Conventions 6 pts.													
Scale 5 pts.													
Asthetics 5 pts.													
SUBTOTAL 100 pts.													
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.													
TOTAL 100 pts.													
Comments:													
I certify these results to be true and accurate to the best of my knowledge.													
<u>Evaluator</u>													
Printed name: _____							Signature: _____						



CONSTRUCTION RENOVATION

If you are a hands-on problem solver, then grab a friend and consider this event. It tests not only your knowledge of construction systems but also your abilities to work as part of a team and to think on your feet.

OVERVIEW

Participants develop a set of presentation boards to include plans, illustrations and finishes for a specified space. The solution must include all applicable construction systems. A specific design problem will be provided each year on the TSA website.

PURPOSE

Participants have the opportunity to demonstrate an understanding of interior design and elements of construction and remodeling.

ELIGIBILITY

Participants are limited to one (1) team of two to five (2-5) members per chapter, one (1) entry per team.

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. Team members access the design problem for the specific year's national conference on the official TSA website. Team members then prepare their documentation, display and 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 semifinalists list in random order is posted.

- D. Semifinalists report to the event area at the time and place stated in the conference program.
- E. Semifinalist teams explain their solution in a presentation format with a question and answer session while standing at their display. Teams may have two to five (2-5) members present during the presentation.
- F. No more than two (2) team members pick up their team's entry from the display area at the time and place stated in the conference program.

REGULATIONS

- A. All work must be completed during the current school year.
- B. Entries must include documentation in a standard three (3)-ring binder with a clear front sleeve for a cover page. The cover page must include the design problem title, 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:
 1. Title page with the design problem title, the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; one (1) page
 3. A description of the team's solution; one (1) page
 4. Demolition plan; maximum of two (2) pages
 5. Written description (can include sketches, drawings, illustrations, photographs, etc.) of how the following construction systems will be incorporated and applied to the team's solution (any and all that apply); building codes, building permits, construction methods and materials, electrical wiring, plumbing, safety, etc. maximum of six (6) pages.
 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
- C. Display guidelines for the team's solution are as follows:
 1. The size of the display may not exceed 15" deep x 4' wide x 3' high.
 2. The interior design challenge for the current year's conference is identified.
 3. The entry must include a minimum of two (2) 20" x 30" Foamcore presentation boards. The boards may be together or separate, but they must be free standing.
 4. The floor plan and elevations of the solution, as well as illustrative perspectives and color material samples (color swatches), must be mounted on the presentation boards. Photograph images of furniture are permitted.

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



5. The decor must be conceptualized with a minimum of five (5) color variations and/or textures as shown through mounted material samples - not five different color schemes.
6. The floor plan must be drawn in $\frac{1}{4}'' = 1'-0''$ scale and drawn in ink or computer printout. Elevations may be the same scale or smaller to accommodate presentation board layout.
7. Any model or additional display items (including the notebook) can not exceed the display dimensions listed in C.1. above.

EVALUATION

Evaluation is based on the documentation, the display, and the presentation/interview (semifinalists only).

STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- CRITICAL THINKING — Students analyze and evaluate a problem, using logic. Suggested leadership lessons: *Figure It Out and Put Yourself In Their Shoes*
- PROBLEM SOLVING — Students work to develop a plan and then complete it. Suggested leadership lessons: *Debate It* and *Effective Brainstorming*
- TEAMWORK — Students work together as a team to solve an on-site problem. Suggested leadership lessons: *Effective Meetings* and *Stepping Stones*

Additional leadership skills promoted in this event: communication, creative thinking, evaluation, organization

TSA AND CAREERS

This competition has connections 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 Career Clusters grid* as resources for information about careers.

CAREERS RELATED TO THIS EVENT

- Architect
- Interior designer
- Construction manager
- Home builder
- Home inspector



TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

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

CONSTRUCTION RENOVATION 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
- E. Person assigned for security

MATERIALS

- A. Coordinator's notebook, containing:
 - 1. Event guidelines, one (1) copy each for coordinator and evaluators
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluators/assistants
 - 5. ID tags or stick-on tabs to number entries
 - 6. Marking pens for evaluators
 - 7. Semifinalists list for posting
 - 8. Results envelope
- B. Display tables for entries

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 state 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 display and notebook. 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. Evaluators independently assess the entries.
- G. For participants who violate the rules, the decision either to deduct twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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. 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.
- K. Semifinalists present their presentations and then are questioned by the three (3) evaluators, each of whom completes a separate rating form. These scores are then added to the initial evaluation scores for a final total. (Be sure the time allowed and the questions used are similar for each interview.)
- L. Evaluators average their scores to determine the ranking of the ten (10) finalist teams. Evaluators discuss and break any ties.
- M. Complete and submit the finalist report, which includes a ranking of the ten (10) finalist teams, and all related forms in the results envelope to the CRC room.
- N. If necessary, manage security and the removal of materials from the event area.

CONSTRUCTION RENOVATION

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Documentation (40 pts.)											
Cover page	1 pt.										
Title page	1 pt.										
Table of contents	1 pt.										
Description of team's solution	8 pts.										
Demolition plan	8 pts.										
Written description of construction systems	18 pts.										
Plan of Work log	3 pts.										
Display (40 pts.)											
Design:											
Knowledge of space (use and needs)	4 pts.										
Knowledge of finish materials	4 pts.										
Use of color/texture	4 pts.										
Flow between areas	4 pts.										
Creativity of design	4 pts.										
Presentation boards:											
Creativity	4 pts.										
Neatness	4 pts.										
Accuracy	4 pts.										
Technique	4 pts.										
Organization	4 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
Presentation – semifinalists only (20 pts.)											
Presentation is well-organized, clear, and articulate, with participation from all representatives	10 pts.										
Responses to questions are thoughtful and knowledgeable	10 pts.										
TOTAL	100 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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.

2011: Medical technology

Subtopic 1 – Money that is available for cancer research should be directed toward prevention instead of cures.

Subtopic 2 – The use of performance enhancing drugs should not be regulated or restricted in sports.

Subtopic 3 – Should genetic engineering techniques and processes be used to eliminate multiple sclerosis?

2012: Biotechnology

Subtopic 1 – Is it appropriate to use emerging synthetic genomic engineering technology to build new forms of “life”?

Subtopic 2 – Should genetic engineering techniques and processes be used in agriculture?

Subtopic 3 – Should companies that develop genetically altered plants and seeds be allowed to have a monopoly on the products they develop?

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. During the full debate format, each team will be allowed two (2) minutes to question the opposing team.
- D. 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. The subtopic and pro and con views will be assigned at the conference during the pre-debate meeting. 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. Depending on the number of entries, time constraints and room availability, the event manager and coordinator may elect to hold preliminary heats (based on either the “Quick Debate” format, as described in Procedure F, or the “Full Debate” format, as described in Procedure G). The “Full Debate” format will be used for the semifinals.
- F. Order of debate for a Quick 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. Order of debate for a Full Debate format.

1. Pro speaker, maximum of three (3) minutes
2. Questioning by con team, maximum of two (2) minutes
3. Con speaker, maximum of three (3) minutes
4. Questioning by pro team, maximum of two (2) minutes
5. Conference break, two (2) minutes
6. Pro rebuttal, maximum of three (3) minutes
7. Con rebuttal, maximum of three (3) minutes

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

- I. 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 list.
- J. 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.

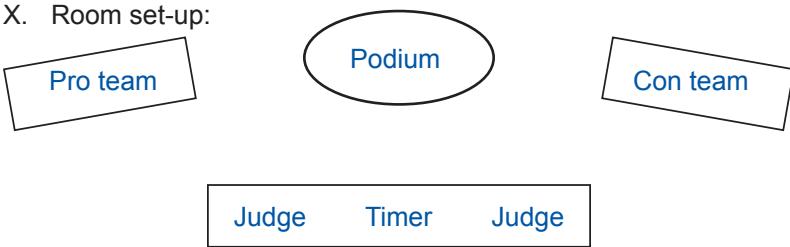
K. When the judges and teams are ready, the pro speaker will be instructed to move to the podium and begin. Timing starts when the speaker begins. After 2 minutes 45 seconds, the timer will hold up a 4" x 6" card on which is written "15 seconds." Penalty points will be deducted when a speaker exceeds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

L. If the full debate format is being used, the con team will be allowed two (2) minutes to question the pro team. Time will start once the speaker has been seated. Questioning will stop when the timer announces "2 minutes." The team answering the question will be given time to complete the answer to the question presented by the opposing team.

M. When the pro speaker is finished and has been seated or when questioning has been completed, the con speaker will move to the podium and begin.

N. If the full debate format is being used, the pro team will be allowed two (2) minutes to question the con team. Time will begin once the speaker has been seated. Questioning will stop when the timer announces "2 minutes." The team answering the question will be given time to complete the answer to the question presented by the opposing team.

- O. When the con speaker is finished and has been seated or when questioning has been completed, the timer will announce a two (2) minute conference period in which both teams may prepare their rebuttal.
- P. 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.
- Q. When the con rebuttal speaker (as in P. 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.
- R. 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. Three (3) copies should be made of the reference list.
- S. Should there be an odd number of teams entered in this event, one team will debate twice, based on a random drawing from a hat. 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.
- T. If a preliminary heat format is being used, 10–14 semifinalists (must be an even number) will be posted in random order.
- U. 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.
- V. Each team reports to the preparation room at its assigned time.
- W. Procedures D — R will be followed to determine the ten (10) finalists.
- X. 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. One 3-ring binder of reference material, as noted on the reference list provided to the judges, may be used during the debate. The binder may be inspected by the judges as needed and will be returned (if collected) to the participants at the end of the preliminary or semifinalist rounds.
- E. Audio visual materials of any form may not 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. Team scores are penalized one (1) point per ten (10)-second interval for speaking over the allotted time.
- K. Questioning and refutation of the opposing team:
 1. Questions to the opposing team must be orderly and polite.
 2. Questions to the speaker may be asked by either member of a team.
 3. The speaker being questioned is to return to his/her seat before his/her response begins.
 4. The speaker may consult with his/her teammate, but only the speaker may respond to the question.
 5. Only questions may be asked during the questioning time; rebuttal statements are not allowed and judges may call for the question if necessary.
 6. Once the timer announces the end of the questioning period, the questioning team may not finish a question. The opposing team may finish its answer to the last posed question.
 7. The speaker must answer questions in a timely manner. The judges may call for the question if there is an unreasonable delay.

- L. 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 sheet of 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 sheet of 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) for the coordinator and one (1) 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 view side and one (1) table and two (2) chairs for the con view 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. Fifteen (15) 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.
- 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 twenty percent (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. Secure the initials of the coordinator and manager 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 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 S), teams will randomly select from a hat 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 during the Quick Debate format or when the "con" speaker has finished answering questions (posed by the pro team) during the Full Debate format. 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 "con" rebuttal speaker will approach the podium and begin, followed by the "pro" 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 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. Depending on the number of entries and heats, between 10 and 14 semifinalists will be selected. (Only an even number of semifinalists should be selected.)
- Y. At the time and place stated in the conference program, meet with the semifinalists to review scheduling and procedures.
- Z. Follow procedures H – R for the semifinalist round of debates.
 - AA. All communication related to evaluators and participants during the presentation/debate should be done 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:



DEBATING TECHNOLOGICAL ISSUES	
2011 & 2012 OFFICIAL RATING FORM	
HIGH SCHOOL	
PARTICIPANT/TEAM ID#	
EVALUATIVE CRITERIA	
Points of argument15 pts. (strength of argument, relevance of support, use of facts and examples)	
Materials and evidence15 pts. (adequate and accurate research, credible sources as noted on the summary of references sheet, substantiated evidence, application/use of research during debate)	
Organization15 pts. (sequential speech, smooth transitions)	
Refutation15 pts. (appropriate questions and answers)	
Delivery15 pts. (speakers could be heard, persuasive tone of voice used, good eye contact, poised performance)	
Teamwork15 pts. (participation, collaboration, respect)	
Overall impact/impression10 pts. Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.	
TOTAL100 pts.	
Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____ Signature: _____	



DESKTOP PUBLISHING

OVERVIEW

Participants develop a notebook, a tri-fold pamphlet, a three (3)-column newsletter, and a poster. All participants (not just semifinalists) then work to solve an on-site problem that demonstrates their abilities to use the computer to design, edit, and print materials for publication.

The theme for 2011 is A Whole New World.

The theme for 2012 is Beyond Tradition.

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.

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

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.

ATTIRE

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

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

PROCEDURE

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



 Students should avoid the use of templates for this event and instead create publications from scratch that incorporate the basic principles of design.

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

- 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, 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

- A. Participants supply their own computer work station with USB drive, power strip/surge protector, and software. A laptop computer is recommended. Anyone who does not provide these items will not be allowed to compete in the on-site event.
- B. The notebook items [a tri-fold pamphlet, a three (3)-column newsletter, and a small poster] must follow these guidelines:
 - 1. The notebook items are developed in color on white 8½" x 11" paper. Color, preprinted, or designed paper may not be used.
 - 2. The notebook items must incorporate the selected theme. 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.
 - 3. The trifold pamphlet and three-column newsletter may be printed on both sides of the white 8½" x 11" paper. The poster should be printed only on one side. All items should be put in clear sheet protectors and placed in the notebook, which is a standard three (3)-ring binder. Items may be removed and examined by evaluators. Additional items may not be included.
 - 4. The notebook is identified using only the participant's conference identification number.
- C. Clip art may be used for the notebook items and for the on-site project. No templates may be used.
- D. 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 conference identification number.

- E. Participants leave the event room only with permission from the event coordinator.
- F. The on-site project should be saved and submitted when a participant completes his/her work and/or when time elapses.
- G. 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students ensure that 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 has connections 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 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

- Advertising or marketing executive
- Editor or copy editor
- Graphic designer
- 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
- D. Computer coordinator, one (1)

MATERIALS

- A. Coordinator's notebook, containing:
 - 1. Event guidelines, five (5) copies
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluatorsassistants
 - 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 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 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 twenty percent (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. Secure the initials of the coordinator and manager 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.

DESKTOP PUBLISHING

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (50 pts.)											
Tri-fold pamphlet	10 pts.										
Three (3)-column newsletter	10 pts.										
Poster	10 pts.										
Theme	10 pts.										
Proper layout and graphic design	10 pts.										
On-site project (50 pts.)											
Final printed product neatness, spelling, grammar, mechanics	10 pts.										
Originality of solution to the on-site problem	10 pts.										
Page layout	10 pts.										
Graphics	10 pts.										
Creativity	10 pts.										
SUBTOTAL	100 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
TOTAL	100 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____						Signature: _____					



DIGITAL VIDEO PRODUCTION

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

OVERVIEW

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

The theme for 2011 is Drama.

The theme for 2012 is Suspense.

PURPOSE

Participants have the opportunity to use digital video/film skills, tools, and processes to communicate, entertain, inform, analyze, or illustrate the given year's theme. An extremely powerful and ubiquitous medium, film 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 film should not exceed five (5) minutes in length. If the film's duration 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 film 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. Films must be submitted on a DVD, playable from a stand-alone DVD player.
- B. The film should not exceed five (5) minutes in length. If the film's duration 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 (not must) be a group project.
- E. All film footage must be the original work of the team and must have been completed within the current school year.
- F. 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. NOTE: Failure to follow this procedure results in disqualification.
- G. The film and an 8½" x 11" notebook are turned in to the event coordinator. The notebook is presented and organized in a professional manner. Each of the sections is double-spaced and no smaller than 11 pt. type. 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 title of the film, the conference city and state, and the year. The inside of the binder must include the following single-sided, 8½" x 11" pages:
 1. Title page with the event title, the title of the film, the conference city and state, and the year; one (1) page
 2. Table of contents
 3. Purpose and description of film; one (1) page
 4. Team's self-evaluation of the film 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 film; one (1) page



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.



8. List of references that includes sources for materials (copyrighted and non-copyrighted); pages as needed
9. Permission letters for copyrighted material (this includes music clips and images); pages as needed
10. Signed consent forms for all film participants
11. 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 film footage and on the accompanying documentation. Depending upon the stated purpose, films are judged on story concept, artistic and/or social value, 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 film. Suggested leadership lessons: *Color Hunt* and *The Leadership Chronicles*
- EVALUATION — Students review and critique work throughout the development of their film. 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 has connections 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 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



TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

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

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 each for coordinator and evaluators
 - 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 event evaluator
 - 8. Results envelope
- B. Tables and chairs for evaluators
- C. Computer capable of reading a DVD, and monitor - 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 twenty percent (20%) of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager. Secure the initials of the coordinator and manager 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 computers to appropriate personnel.

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

DIGITAL VIDEO PRODUCTION

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Preproduction (24 pts.)											
Cover page 1 pt. Title page 1 pt. Table of contents 1 pt. Purpose and description (clearly stated and well written) 3 pts. Hand-sketched storyboard 8 pts. Script 3 pts. Self-evaluation (thoughtful, intelligent) 5 pts. List of hardware and software used 1 pt. Plan of Work log 1 pt.											
Documentation (6 pts.)											
Completeness (all sections of notebook are thoroughly completed, including references) 2 pts. Organization 2 pts. Appearance (the documentation is visually appealing and well organized) 2 pts.											
Production (20 pts.)											
Story concept 5 pts. Stylistic value 5 pts. Camera techniques 5 pts. Transitions and pace 5 pts.											
Impressions (50 pts.)											
Creativity and originality 10 pts. Technical attributes (to include sound if applicable) 10 pts. Artistic and/or social value 10 pts. Overall impact 20 pts.											
Time deduction											
Three (3) points for each fifteen (15) seconds over the five (5) minutes allotted for the film											
SUBTOTAL 100 pts.											
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.											
TOTAL 100 pts.											
RANK ORDER											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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.



Note:

2011 is a “Flashback” year, featuring external wheel dragsters ONLY.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Each dragster and drawing is 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.



- 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 and design points are combined with race points to determine the final standings.

REGULATIONS

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.

- A. Each entry must be submitted 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"x17" 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.
- B. The official distance between the start line and the finish line on the race track is twenty (20) meters.
- C. ***Dragsters that do not meet the following specifications/tolerances are disqualified from the race.***

Dragster body

DB1. 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: 2011 is a "Flashback" year. Dragster bodies may not have internal wheels (i.e., no shell cars).

MINIMUM	MAXIMUM
DB2. Body length.....	200mm.....305mm
DB3. Body height with wheels	75mm
DB4. Body mass (completed car without CO ₂) (2011) 30g - external wheel bodies only(2012) 70g	
DB5 Body width at axles, front and back	35mm.....42mm
DB6. Vehicle total width (including wheels)	90mm

Axles/axle holes/wheelbase

- A1. Dragsters must have two (2) axles per car, no more.
- A2. 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
- A3. Rear axle hole from rear of car 9mm.....100mm
- A4. Wheelbase (axle distance apart at farthest points).. 105mm.....270mm
- A5. Bearings, bushings and lubricants may be used.
- A6. Glue may be used to secure bearings to body.

Spacer washers/clips

- S1. Spacer washers 8
- S2. Axle clips.....8
- S3. 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)

- P1. 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.
- P2. Hole depth 48mm.....54mm
- P3. Safety zone thickness..... 3mm
- P4. Chamber diameter 19mm.....20mm
- P5. Lowest point of chamber diameter to race surface
(with wheels)..... 26mm.....40mm

Eye screws

ES1. 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.

ES2. Inside diameter 3mm 5mm

ES3. Distance apart (at farthest points)..... 150mm 270mm

Wheels

W1. 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.

W2. Front diameter 30mm 37mm

W3. Front width (at surface contact point) 1.5mm 5mm

W4. Rear diameter 30mm 40mm

W5. Rear width (at surface contact point) 12mm 18mm

D. 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.

E. All CO₂ cartridges for the race are provided by national TSA.



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

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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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
- D. Assistants, two (2)

MATERIALS

- A. Coordinators box, containing:
 - 1. Event guidelines, five (5) copies
 - 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 (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. Ultra violet ink and light to mark cars and check for cars that have been previously entered

RESPONSIBILITIES

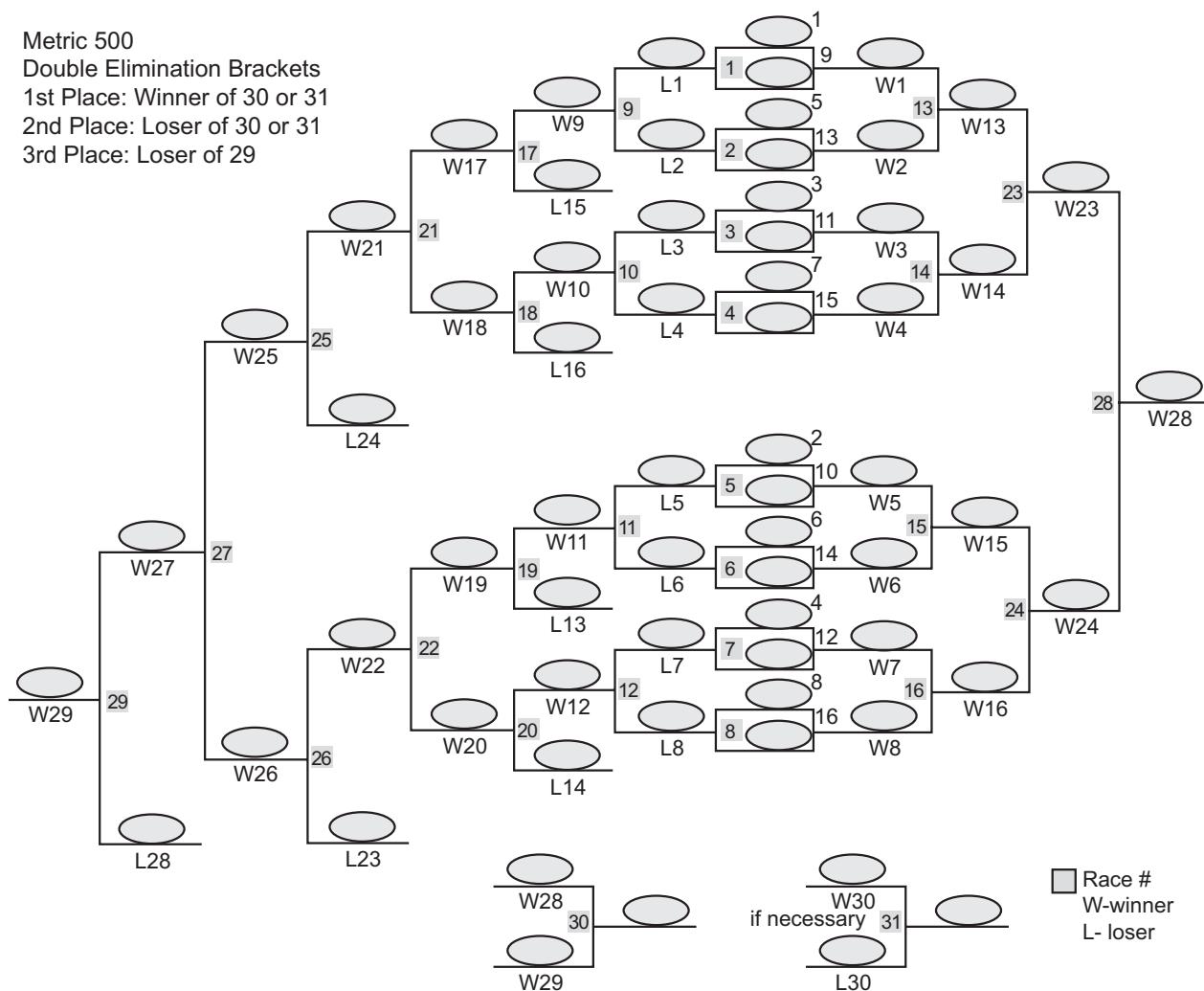
- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's notebook. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.
- B. Inspect the area(s) in which the event is being held for appropriate set-up, including 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 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 ultra-violet ink.
- M. For participants who violate the rules, the decision either to deduct twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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





DRAGSTER DESIGN

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL



ENGINEERING DESIGN

OVERVIEW

Participants work as part of a team to solve a design problem. Through use of a model/prototype, display, and design notebook, the team explains in detail how it has solved the problem and the solution's impact on society and the environment. Semifinalists demonstrate the problem and solution in a timed presentation.

PURPOSE

Participants have the opportunity to apply the principles and practices of engineering and universal design in developing the solution to a design problem that incorporates the application of scientific and mathematical principles and concepts, that demonstrates application in areas of technology, and that assesses the impact of the solution on society and the environment.

ELIGIBILITY

Participants are limited to one (1) team of three to five (3-5) students per chapter; one (1) entry per team.

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.



The design problem in this event is entirely up to the participant. Examples of past projects are a device to open jars, a wheelchair with better mobility, a practical robotic application, etc. Read the regulations carefully and then choose a new or improved design in which you are interested.



 "thinking out of
the box"

Each design team should utilize this process or concept when researching within the varied fields of engineering to identify and select its design problem.

Participants are encouraged to develop new and improved products for addressing existing problems. They may also consider developing products or solutions to address issues related to new and emerging technologies.

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 team's solution, its marketplace potential, and its impact on society and the environment. Evaluators are free to ask questions.
- 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. The entire solution (including model/prototype, design portfolio, display and any equipment needed for the presentation) must be contained within a 15" deep x 3' wide x 4' high.
- B. The model/prototype must include the use of at least three (3) different types of materials.
- C. A documentation notebook is required and must be submitted with the display. A standard three (3)-ring binder with a clear plastic front sleeve for the cover page should be used for this notebook. The cover page must include an original graphic design that incorporates aspects of the student/team engineering design, as well as the event title, conference city and state, and the current year. 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
 - 3. 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

4. A description of the problem solving steps; one (1) or more pages
 5. 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
 6. Evidence of research conducted by the design team; two (2) or more pages
 7. Documentation of brainstorming; one (1) or more pages
 8. 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
 9. A detailed description of the final solution, including an explanation of the steps of operation; one (1) or more pages
 10. A three (3)-dimensional technical or CAD drawing and/or rendering of the final solution; one (1) or more pages (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)
 11. Math and science concepts and applications involved in the final design solution; one (1) page
 12. Explanation of the areas of technology that are an integral part of the solution, including as many as apply; one (1) or more pages:
 - a. Medical technology
 - b. Agriculture and biotechnology
 - c. Energy and power
 - d. Information and communication
 - e. Transportation
 - f. Manufacturing
 - g. Construction
 13. A list of references and resources utilized; MLA style must be used in citing all references and resources; one (1) or more pages
 14. Evaluation of how well the final solution meets the design brief problem and explains the possible impact of the solution on society and/or the environment, one (1) or more pages
- D. Any special set-up and/or equipment required for the display or semifinalist interview is the responsibility of the participants.
- E. The static display must not require the use of electricity for review and evaluation by the judges.

 This event evolved from a previous partnership with JETS and the National Engineering Design Challenge. Information relative to previous design problems for the event may be found by visiting <http://www.udeducation.org/teach/shortevents/competitions/nedc.asp>

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



EVALUATION

Please refer to the official rating form for more information.

STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

- Civil engineer
- Environmental scientist
- Health and safety specialist
- Manufacturing consultant
- Prosthetic 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, five (5) copies
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluatorsassistants
 - 5. Pens for evaluators
 - 6. Semifinalist list for posting
 - 7. Results envelope
- B. Chairs, one (1) per participant
- C. Stopwatch for timing 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(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 modelprototype, 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 twenty percent (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. Secure the initials of the coordinator and manager on the rating form.
- H. Evaluators average their scores to determine the twelve (12) semifinalists 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 set up with a computer and monitor.
- 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 three (3) 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.



ENGINEERING DESIGN

2011 & 2012 OFFICIAL RATING FORM		HIGH SCHOOL
PARTICIPANT/TEAM ID#		
EVALUATIVE CRITERIA		
Model/prototype (40 pts.)		
Marketability and usefulness10 pts.		
Effectiveness of design10 pts.		
Creativity and innovation10 pts.		
Appearance and quality of construction10 pts.		
Display (10 pts.)		
Clear and effective presentation of the design5 pts.		
Appearance and quality5 pts.		
Design notebook (30 pts.)		
Cover page1 pt.		
Title page1 pt.		
Table of contents1 pt.		
Design brief3 pts.		
Problem solving steps2 pts.		
Plan of Work log1 pt.		
Research3 pts.		
Brainstorming2 pts.		
Three (3) solutions2 pts.		
Final solution description2 pts.		
Technical drawing2 pts.		
Math and science concepts2 pts.		
Technology areas2 pts.		
References/resources2 pts.		
Evaluation of the design, including impact of the solution on society and the environment4 pts.		
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.		
SUBTOTAL80 pts.		
Presentation (semifinalists only)20 pts.		
TOTAL100 pts.		
Comments:		
I certify these results to be true and accurate to the best of my knowledge.		
<u>Evaluator</u>		
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 a persuasive 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 2011 conference is “The Effects of the Decline of Housing Development” with these subtopics:

- The transient movement of Americans
- The construction industry
- School population
- Financial security of cities and states

The topic for the 2012 conference is “The Impacts of Ever-changing Technology on Schools” with these subtopics:

- Budgets
- Computers
- World Wide Web
- Classroom technologies

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 a persuasive 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.

 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.

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

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 and it is this subtopic on which the participants write.
- 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.

REGULATIONS

- A. Each participant is allowed to bring one (1) 3" x 5" note card for each subtopic, a dictionary, and a thesaurus to the event. All research material brought into the event area must be contained on the note cards. 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.

- 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 paper only, using proper MLA bibliography format], and the relevant note card.
- G. All essays become the property of TSA, Inc.

EVALUATION

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

STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) 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 twenty percent (20%) of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager. Secure the initials of the coordinator and manager 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 note card 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.



ESSAYS ON TECHNOLOGY

2011 & 2012 OFFICIAL RATING FORM**HIGH SCHOOL**

PARTICIPANT/TEAM ID#																							
EVALUATIVE CRITERIA																							
Artisanship of writing (21 pts.)		Clarity	7 pts.	Convincing	7 pts.	Insightful	7 pts.																
Organization-structure-flow (20 pts.)		Thesis (position) statement clarity	4 pts.	Introduction	4 pts.	Body	4 pts.	Conclusion	4 pts.	Flow	4 pts.												
Concepts (24 pts.)		Technically correct	8 pts.	Important and relevant	8 pts.	Supported by research	8 pts.																
Research and references (15 pts.)		Depth	5 pts.	Voice	5 pts.	Relevance	5 pts.																
Mechanics (20 pts.)		Punctuation	5 pts.	Spelling	5 pts.	Neatness	5 pts.	Bibliography format	5 pts.														
SUBTOTAL		100 pts.																					
Rules violation (must be initialed by coordinator and manager)		minus 20% of the total possible pts..																					
TOTAL		100 pts.																					
Comments:																							
I certify these results to be true and accurate to the best of my knowledge.																							
<u>Evaluator</u>																							
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.
- 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) cards has a "time remaining in minutes" number on it (4, 3, 2, 1, $\frac{1}{2}$, and 0) that 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 note cards.

- 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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 each for coordinator and evaluators
 - 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. Table and chairs for three (3) evaluators and the timekeeper
- E. Chairs for the audience, for semifinals only
- F. 3" x 5" blank note cards, for participants to use to outline their presentation
- G. Pencils
- H. 3" x 5" topic cards—a minimum of fifteen (15) different topics from which to select
- I. 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. 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. For participants who violate the rules, the decision either to deduct twenty percent (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. Secure the initials of the coordinator and manager on the rating form.
- F. 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.]
- G. 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.

- H. Evaluators average their scores and discuss and break any ties when all presenters have spoken.
- I. If heats are used, determine 12-15 semifinalists and post a semifinalist list. Repeat the process in F. (above) to determine the 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.



2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#															
EVALUATIVE CRITERIA															
Knowledge of subject20 pts. Importance and appropriateness of subject, suitability of material used, accuracy of statements, and evidence of purpose															
Organization20 pts. Organization of content, utility of thought, logical development, language used, sentence structure, accomplishment of purpose, conclusions															
Power of expression20 pts. Fluency, emphasis, directness, sincerity, communicative ability, and conveyance of thought and meaning															
Voice10 pts. Quality, pitch, articulation, pronunciation and force															
Stage presence10 pts. Personal appearance, poise, body posture, attitude, confidence, personality, and ease before an audience															
General effect20 pts. Extent to which the speech was interesting, understandable, convincing, pleasing, and attention-holding															
SUBTOTAL100 pts.															
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.															
Time deductions 1 point for each 10-second interval over 5 minutes or under 3 minutes															
TOTAL100 pts.															
Comments:															
I certify these results to be true and accurate to the best of my knowledge.															
<u>Evaluator</u>															
Printed name: _____ Signature: _____															



FASHION DESIGN

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 2011 is to design two (2) costumes for a current Broadway play of the team's choice.

The theme challenge for 2012 is to design two (2) outfits that correspond to a specific historical period, such as the Victorian era, or any other historical period with a particular fashion style.

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

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 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].
- I. Final evaluation from judges takes place immediately following the completion of the interview and runway presentation.

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. Participants will utilize a 32-quart plastic storage box to submit their portfolio and garments. Garments should be put on hangers and placed in protective plastic bags, garment bags, or on dressmakers' dummies.
- B. Portfolio
 1. The portfolio should be twenty (20) pages long, and must include the following pages:
 - 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
- C. Patterns/mock-ups Full-sized student-made pattern(s) and paper mock-ups [three to four (3-4) patterns and mock-ups on appropriate lightweight paper or inexpensive cloth]
- D. Garments
- 1. Three (3) garments must be chosen for initial judging and put in the storage box, on hangers, or on dressmakers' dummies with the portfolio.
 - 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. The presentation and interview evaluates 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, garments, an interview and the final runway presentations during the on-site portion of the event. Scores on the portfolios and garments will determine the twelve (12) semifinalists. Points earned from the interview on-site runway presentation event will be added to the portfolio score to determine the final ranking, first through tenth (1st-10th) place.



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

- Fashion designer
- Fashion layout editor
- Fashion magazine editor
- Model
- Tailor

FASHION DESIGN

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for heats, two (2) or more
- C. Evaluators for the twelve (12) semifinalist team presentations, two (2) or more
- D. Timekeeper

MATERIALS

- A. Coordinator's notebook, containing:
 - 1. Event guidelines, one (1) copy each for coordinator and evaluators
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluatorsassistants
 - 5. Marking pens or pencils for each evaluator
 - 6. Semifinalist list for posting
 - 7. One (1) stopwatch
 - 8. Results envelope
- B. Podium, microphone, sound system/CD player, extension cord, and walkway/model presentation area taped/roped off
- C. Tables and chairs for three (3) evaluators
- D. Chairs for audience
- E. One (1) table, approximately 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 twenty percent (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. Secure the initials of the coordinator and manager 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 team to the event coordinator or assistant in the event room.
 - I. Each team is allowed two (2) 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, 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 list in random order that is submitted to the CRC chairperson for posting.
- M. 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.
- O. 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.
- P. If necessary, manage security and the removal of materials from the event area.

FASHION DESIGN

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

		PARTICIPANT/TEAM ID#													
EVALUATIVE CRITERIA															
Portfolio (35 pts.)															
Title page		1 pt.													
Table of contents		1 pt.													
Literature research summary		10 pts.													
Interpretation of theme		5 pts.													
Explanation of garment types, etc.		5 pts.													
Design process sketches		5 pts.													
Computer-drawn final drawings		5 pts.													
Resources/references		3 pts.													
Patterns/mock-ups (10 pts.)															
Two (2) or more garment hand-made patterns		5 pts.													
Creativity, originality, difficulty, interpretation of theme		5 pts.													
Quality of garments (20 pts.)															
Proper sewing techniques used/evident		5 pts.													
Quality fabric and lining		5 pts.													
Use of notions (buttons, zippers, snaps, embroidery, embellishments, etc.)		5 pts.													
Pressed, ironed, hanging on hangars or on dressmaker's dummy, in a garment bag		5 pts.													
PORTRFOLIO SUBTOTAL		65 pts.													
On-site presentation —semifinalists only (35 pts)															
Interview and presentation		10 pts.													
Quality of garments on models		15 pts.													
Organization and depiction of the theme		10 pts.													
Rules violation (must be initialed by coordinator and manager)		minus 20% of the total possible pts.													
TOTAL		100 pts.													
Comments:															
I certify these results to be true and accurate to the best of my knowledge.															
<u>Evaluator</u>															
Printed name: _____ Signature: _____															



FLIGHT ENDURANCE

 Every year it's amazing all over again 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.

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.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one 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.



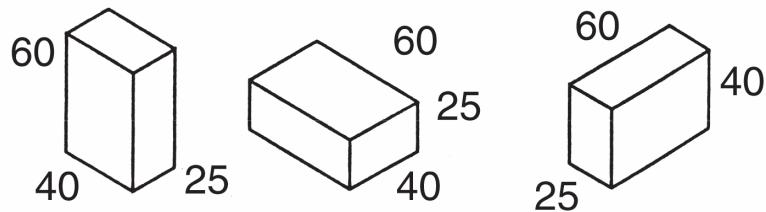
Read the General Rules and Regulations in the front of this guide for information that applies to all of TSA's competitive events.

Flight Log

Member name:			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 to connect the wings and tail to the fuselage.
 8. The two wheels must be a minimum of 15mm in diameter, in plastic or wood, and they must roll.
- 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

The Academy of Model Aeronautics (AMA) welcomes your inquiries and may have suggestions and technical information that may further your knowledge and interest in model aircraft. Here's how to contact the AMA:

AMA
5161 E. Memorial
Muncie, Indiana 47302
phone 765.287.1256 (Education Department)
fax 765.289.4248
www.modelaircraft.org
www.webwings.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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 through 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 has connections 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 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, four (4) copies
- 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 twenty percent (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. Secure the initials of the coordinator and manager 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. Notebooks of the sixteen (16) semifinalists are judged and rated with a factor ranging from 1.01 (low) to 1.20 (high). This factor is multiplied by the total of the two (2) official flights to determine the final ranking of 1-10.
- K. Secure the signatures of the evaluators on the official rating form after they have reviewed it.
- 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.

FLIGHT ENDURANCE

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#												
EVALUATIVE CRITERIA												
Flight #1 (time)												
Flight #2 (time)												
Landing bonus (10 seconds per flight)												
FLIGHT TOTAL												
Notebook 1.01 for no flight log or report 1.20 for best accurate report and flight log												
SUBTOTAL (To calculate, multiply notebook factor by flight total.)												
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.												
TOTAL												
Comments:												
I certify these results to be true and accurate to the best of my knowledge.												
<u>Evaluator</u>												
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 the "College Search and Selection" page, 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 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 technology education teacher/s is recommended, as is the use of this website: <http://www.iteaconnect.org/Resources/institutionalmembers.htm>. Using no more than two (2) 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 of no more than 250 words explaining why s/he is a good candidate to become a technology education/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).
- 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 all handouts, resources and a list of materials used in the presentation of the activity 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 binder 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 audiovisual 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

 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 notebook, essay and lesson plan/activity must be the result of the participant's own efforts.
- B. All parts of the entry are contained in the notebook. 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:
 - 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
 - 3. College research summaries; two (2) pages
 - 4. College essay; one (1) page
 - 5. Letter of recommendation; one (1) page
 - 6. Lesson plan/activity; pages as needed
 - 7. Copies of handouts; 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.
- 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.] Science, math, and engineering skills also should be stressed. 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. Four (4) copies of all handouts, materials and resources should be prepared and distributed to the judges, who will act as students in the classroom.
- G. Audiovisual materials such as charts, graphs, posters, displays, flip charts, transparencies and models may be included. All audiovisual materials must be provided by the participant.
- 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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: *Creative 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 has connections 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 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, four (4) copies
 - 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. Evaluators tally and turn in the rating forms. Any tie that affects the top three (3) places should be broken by using the highest average score for evaluative criteria.
- 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. For participants who violate the rules, the decision either to deduct twenty percent (20%) of the total possible points or disqualify the entry must be discussed and verified with the evaluators, event coordinators, and a CRC manager. Secure the initials of the coordinator and manager on the rating forms.
- K. Evaluators submit their signed score sheets to the coordinator, who turns them into the CRC room with the top three (3) rankings.
- L. If necessary, manage security and the removal of materials from the event area.

FUTURE TECHNOLOGY TEACHER

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#													
EVALUATIVE CRITERIA													
Notebook (60 points)													
College search and selection													
Three (3) colleges offering technology education													
identified with summary of findings10 pts.													
College essay													
Content/organization/format5 pts.													
Spelling and grammar5 pts.													
Letter of recommendation.....5 pts.													
Lesson plan													
Rationale (appropriateness for the													
unit being studied)5 pts.													
Age-appropriate goals and objectives5 pts.													
ITEEA/ITEA standards correlation5 pts.													
Concise procedures5 pts.													
Assessment (evaluation of students)5 pts.													
Handouts and resources for the activity													
Clarity of directions and procedures5 pts.													
Quality (spelling/ grammar/													
appropriate images)5 pts.													
Presentation (40 points)													
Introduction (method to gain students' attention)...5 pts.													
Knowledge of material5 pts.													
Organization5 pts.													
Stage presence (poise, posture, personality,													
confidence, proper attire, enthusiasm).....5 pts.													
Voice/language													
(grammar, pitch, pronunciation)5 pts.													
Innovation/creativity of lesson planned10 pts.													
Use of materials and/or audio visual aids5 pts.													
SUBTOTAL100 pts.													
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.													
TOTAL100 pts.													
Comments:													
I certify these results to be true and accurate to the best of my knowledge.													
<u>Evaluator</u>													
Printed name: _____ Signature: _____													



MANUFACTURING PROTOTYPE

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 2011 is TSA officer symbols, plus the gavel and block.

The product for 2012 is a complete desk set. The set must include—but is not limited to—a coaster, a double paper tray, a pen and pencil holder, and a business card holder.

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 effective use of the selected material (craftsmanship).
 - 6. The product should function in a manner that solves the problem identified at the beginning of the challenge (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. The documentation is contained in a standard three (3)-ring binder, with a clear front sleeve for a cover page. The cover page must include the product name, the event title, the conference city and state, and the year (all of these items must be centered on the cover page in consecutive lines). The inside of the binder must include the following single-sided, computer-generated (except for the working drawings) 8½" x 11" pages:

 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.

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



- a. Title page with the event title, the conference city and state, and the year; one (1) page
- b. Table of contents
- 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 that were 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 (also, size and market value) used to fabricate the product must be incorporated. 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) pages

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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, four (4)
 - 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 to deduct twenty percent (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. Secure the initials of the coordinator and manager 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.

MANUFACTURING PROTOTYPE

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Documentation (50 pts.)		Cover sheet	1 pt.								
		Title page	1 pt.								
		Table of contents	1 pt.								
		Description of product	8 pts.								
		Design effort	8 pts.								
		Working drawing	10 pts.								
		Materials list	4 pts.								
		Tool and machine list	2 pts.								
		Production plan	14 pts.								
		Plan of Work log	1 pt.								
Product (50 pts.)		Craftsmanship	5 pts.								
		Product function	10 pts.								
		Product solution	10 pts.								
		Aesthetics	5 pts.								
		Originality	10 pts.								
		Overall quality	10 pts.								
SUBTOTAL		100 pts.									
Rules violation (must be initialed by coordinator and manager)		minus 20% of the total possible pts.									
TOTAL		100 pts.									
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____						Signature: _____					



MUSIC PRODUCTION

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.

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.

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 (4) minute maximum length.
- D. Musical pieces thirty (30) seconds or less will be disqualified.
- E. All entries become the property of TSA, Inc. 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 be included.
- H. Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated using 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. Each of the sections is double-spaced and no smaller than 11 point type. 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:
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
 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 official rating form; one (1) page
 6. Lyrics; pages as needed
 7. Audio CD(s) track list: This list must itemize each musical track used in the musical piece and indicate which CD track the musical track corresponds to. Any processing, effects, panning, or other recording/mastering techniques used throughout the musical production process must be described; pages as needed.
 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.

TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

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



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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

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. Evaluators of semifinalists, two (2) evaluators for top twelve (12) semifinalists

MATERIALS

- A. Coordinator's notebook, containing:
 1. Event guidelines, one (1) copy each for coordinator and evaluators
 2. Official rating forms
 3. List of entries with finalist report
 4. List of evaluatorsassistants
 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 twenty percent (20%) of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager. Secure the initials of the coordinator and manager on the rating form.
- H. Each team of evaluators averages its two (2) 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. The interviewers average their two (2) scores to determine the interview score and then add that score to the subtotal score for a maximum of 125 points (25 + 100 maximum points). The total of these two (2) scores determines the ranking of the competitors. 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.

MUSIC PRODUCTION

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (35 pts.)											
Cover page	1 pt.										
Title page	1 pt.										
Table of contents	1 pt.										
Plan of Work log	5 pts.										
Purpose and description	3 pts.										
Self-evaluation	5 pts.										
Track timeline	15 pts.										
List of hardware and software	2 pts.										
References (if appropriate)	2 pts.										
Musical piece (65 pts.)											
Creativity	5 pts.										
Artisanship	5 pts.										
Style	5 pts.										
Energy	5 pts.										
Degree of interest	5 pts.										
Uniqueness	5 pts.										
Coherence	5 pts.										
Technical skill	10 pts.										
Appropriateness	10 pts.										
Overall appeal	10 pts.										
Time deduction											
5 pts off for each 5 seconds under the one (1) minute minimum length											
5 pts off for each 15 seconds over the four (4) minute maximum length											
SUBTOTAL	100 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
Finalist interview (25 pts.)											
TOTAL	125 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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, 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 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.



- 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 coordinators. The notebook is presented and organized in a professional manner. Each of the sections is double-spaced and no smaller than 11 point type. 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:
 - 1. Title page with the event title, the conference city and state, and the year; one (1) page

2. Table of contents
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

EVALUATION

Evaluation is based on the completed video production and the accompanying documentation. Depending upon 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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 each for coordinator and evaluators
 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. 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. Secure the entries in the designated area.
- F. One (1) hour before the judging is scheduled to begin, meet with your evaluatorsassistants 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 twenty percent (20%) of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager. Secure the initials of the coordinator and manager 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.

ON DEMAND VIDEO

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (30 pts.)											
Cover page	1 pt.										
Title page	1 pt.										
Table of contents	1 pt.										
Purpose and video description	5 pts.										
Script											
2-column format	2 pts.										
Writing quality	4 pts.										
Correlation with video	4 pts.										
Completeness	3 pts.										
Shot log	5 pts										
List of video equipment and software used	2 pts.										
Reference and resources	2 pts.										
Production (40 pts.)											
Story concept	10 pts.										
Stylistic value	10 pts.										
Camera technique	5 pts.										
Transitions and pace	5 pts.										
Use of props incorporated	5 pts.										
Line of dialogue incorporated	5 pts.										
Impression (30 pts.)											
Creativity and originality	10 pts.										
Artistic and/or social value	10 pts.										
Overall impact	10 pts.										
SUBTOTAL	100 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
TOTAL	100 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____	Signature: _____										



PHOTOGRAPHIC TECHNOLOGY

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.

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 a storyboard/outline and media presentation of newsworthy TSA conference activities and events.

The theme for 2011 is Doors.
The theme for 2012 is Perspectives.

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 and access to a computer with multimedia software, a standard 15 pin VGA cable port, and a USB port, as well as a USB memory stick to compete in the semifinals.
- E. The event coordinator distributes the description of the semifinalist assignment, specific directions, and time lines for the three (3) stages of the semifinals to each semifinalist at the time identified in the conference program.
- 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. Evaluation during the third stage takes place at the designated time following the completion of stage two (2) of the semifinals.
- K. Upon completion of the second stage, each semifinalist is assigned a presentation time. S/he reports to the assigned area at that time to give the presentation. Each semifinalist will bring his/her computer for the presentation. An LCD projector (for the participant's use) will be provided by TSA.



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 are to utilize a one inch (1") three (3)-ring binder with a clear plastic front sleeve for the cover page to submit their photographic prints and documentation materials for judging.
- 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. All prints must be processed and printed on 8½" x 11" photographic paper, leaving a one inch (1") border at the bottom and placed in sheet protectors.
- F. All prints smaller than 8½" x 10" must utilize a black, white, or gray background..
- G. Captions or descriptions must be included for each print and are to be centered below the print on the backing.
- 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 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
3. A description of the entrant's interpretation of the theme and justification for the selection of the various shots/images that have been included in the display; no more than two (2) pages
4. All prints, fifteen (15) submitted for judging and properly labeled. Smaller prints may be combined on the same page and placed front to back in the sheet protectors to conserve space and the number of sheet protectors needed.
5. All consent forms; include a page with a statement to verify the fact that no consent forms are included when deemed unnecessary
6. All original prints are must be placed in a separate sheet protector directly behind the finished print. Original prints for multiple imaging must be placed directly behind the finished print in separate sheet protectors with a description of the special processing placed on the back side of the prints.
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 envelope attached to a single sheet of paper)
8. List of resources and references utilized

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 submitted 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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/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, four (4) copies
 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 lower right-hand corner of the cover of the documentation notebook. 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 twenty percent (20%) of the total possible points or to disqualify and remove the entry from display must be discussed and verified with the evaluators, event coordinator, and a CRC manager. The initials of the coordinator and manager must be secured 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. 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.

PHOTOGRAPHIC TECHNOLOGY

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Documentation and images (100 pts.)											
Cover page1 pt.											
Title page1 pt.											
Table of contents1 pt.											
Description of interpretation and justification5 pts.											
Required number of prints (3"x5" to 8½"x10")											
five (5) black and white5 pts.											
five (5) color5 pts.											
five (5) entrant's choice5 pts.											
Caption/descriptions center below each print5 pts.											
Lighting and special effects5 pts.											
Composition of images15 pts.											
Processing and finishing of images5 pts.											
Creativity5 pts.											
Effective and appropriate depiction of the theme10 pts.											
Visual impact of images5 pts.											
Consent forms5 pts.											
Printed copies of all original images.....10 pts.											
CD or DVD documentation (to include a file identified as Cover Page Graphic File)10 pts.											
Resources/references2 pts.											
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.											
TOTAL100 pts.											
On-site challenge (100 pts.)											
Composition of images15 pts.											
Lighting and special effects15 pts.											
Creativity in imaging15 pts.											
Captions and descriptions15 pts.											
Effectiveness in depicting theme15 pts.											
Presentation quality and impact25 pts.											
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.											
TOTAL100 pts.											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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 the 2011 conference is Snapshot of Innovation. The theme for the 2012 conference is TSA: Our Dreams, Tomorrow's Reality.

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.



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.



- B. Participants will report to the holding area, as stated in the conference program, fifteen (15) minutes prior to the assigned presentation time.
- 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
- 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) each for coordinator and evaluators
 - 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 twenty percent (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. Secure the initials of the coordinator and manager 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, 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. 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.

2011 & 2012 OFFICIAL RATING FORM		HIGH SCHOOL
PARTICIPANT/TEAM ID#		
EVALUATIVE CRITERIA		
Presentation (70 pts.) Introduction (interest and appeal) 10 pts. Knowledge of material (factual support) 15 pts. Organization (clarity and sequence) 15 pts. Stage presence (personal appearance, poise, posture, attitude, personality, and confidence) 10 pts. Voice/language (grammar, pitch, pronunciation, articulation, and clarity) 10 pts. Conclusion 10 pts.		
Use of audio/visual materials (30 pts.) Creativity in use 10 pts. Quality of materials 10 pts. Transitions between media use 10 pts.		
Time deduction One (1) point per ten (10)-second interval over or under the time allotted for the presentation, and the set-up and take-down.		
SUBTOTAL 100 pts.		
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.		
TOTAL 100 pts.		
Comments:		
I certify these results to be true and accurate to the best of my knowledge.		
<u>Evaluator</u> 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 2011 the options are:

- Dragster Design
- CAD 2D, Architecture
- Promotional Graphics

For 2012 the options are:

- On Demand Video
- Biotechnology Design
- Prepared Presentation

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 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.
- D. Entries are picked up only at the time and place stated in the conference program.

REGULATIONS

- A. The Promotional Graphics event is an individual event. No recognition is given for a group effort.
- B. 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 presented either in portrait or landscape layout and must be printed on letter size (8½" x 11") photo paper or card stock (either glossy or matte finish is acceptable) and placed in a three (3)-hole punch clear plastic sheet protector when submitted at check-in.
 2. The design must be produced using a desktop publishing system, i.e. Photoshop, CorelDraw, 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 [type face(s) may be original or traditional in design]:
 - 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.tsaweb.org). Failure to follow the information provided in the policies results in disqualification.

Read the regulations carefully to avoid these common rules violations:

- competition option not included
- incorrect competition option 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.

The TSA logo may be used with or without the registered trademark symbol (the circle R).

8. 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.10). 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.10). This information must be inserted between the promotional graphic and the typed technical explanation in the clear plastic page protector.
 9. 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.) This information also must be inserted behind the promotional graphic in the clear plastic page protector.
 10. 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 competition option must be included. This should be inserted facing out behind the promotional graphic in the clear plastic page protector.
- C. The winning designs for Promotional Graphics may be used on promotional posters, or in publications.
- D. 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, four (4) copies
 - 2. Official rating forms
 - 3. List of entries with finalist report
 - 4. List of evaluators/assistants
 - 5. Results envelope
- B. Equipment
 - 1. Marking pens for evaluators, six (6)
 - 2. Display area—either tables for laying out the entries, or a system for hanging the entries
 - 3. Two (2) or more two (2)-inch ring binder notebooks for entry collection and judging
 - 4. Table and chair 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. 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.
- C. Place an entry number in the bottom right corner of the clear plastic sheet protector on each entry, and secure the provided

binder notebooks for evaluation. Secure the entries in the designated area.

- D. 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.
- E. For participants who violate the rules, the decision either to deduct twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager on the rating form.
- F. Evaluators independently assess the entries in each of the binder notebooks.
- G. Evaluators total their scores for each qualified entry to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.
- 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.
- I. If necessary, manage security and the removal of materials from the event area.



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

PROMOTIONAL GRAPHICS

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Impact (35 pts.)											
Effective depiction of competitive event 20 pts. Eye appeal 15 pts.											
Graphic (25 pts)											
Graphics used are appropriate for the chosen competition 10 pts. Fonts are readable, attractive, have appropriate dimension and placement 5 pts. Final product presentation (sharp clean edges of graphics and fonts; entry is clear of smudges, smears, pencil or other extraneous marks)..... 10 pts. [Proof of permission to use copyrighted image(s) must be included. A release form must be present if photographs of individuals are used. Clipart must be documented.]											
Design elements (20 pts)											
Balance (visual weight of design elements) 5 pts. Dominance (eyes are drawn to main message) 5 pts. Proportion (size relationships within the design) 5 pts. Unity (design elements flow together) 5 pts.											
One page technical explanation (20 pts.)											
Technical explanation, including programs used and process..... 5 pts. Explanation of inspiration/how graphic relates to competition option 5 pts. Grammar/spelling..... 5 pts. Cited work in MLA format..... 5 pts.											
SUBTOTAL 100 pts.											
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.											
TOTAL 100 pts.											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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.

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.

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.

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 should 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.

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.
- E. The presentation team may not exceed two (2) members.
- 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.



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

- G. The 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 notebook must be presented and organized in a professional manner. Each of the written sections is to be double-spaced and not smaller than 12 pt. type. 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
 3. Purpose of visualization; one (1) page
 4. Hand-sketched storyboard that documents the flow and progression of the visualization in with written notes; special effects, audio cues, dialogue, transitions, and scene duration should be incorporated into the storyboard
 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
- 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

Science, Technology, Engineering, Mathematics

PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students will portray 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 has connections 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 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 _____				

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 each for coordinator and evaluators
 - 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 for each evaluation team 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 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. 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 its 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 twenty percent (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. Secure the initials of the coordinator and manager on the rating form.
- G. The number of evaluators depends upon the number of entries thereof. Each group of two (2) evaluators averages its two (2) scores to determine the top four (4) entries from the initial group of twenty (20) entries. The top four (4) entries from each 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 semifinalists 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 members will explain their work and answer any questions the evaluators may ask.
- K. Semifinalist 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.



SCIVIS

2011 & 2012 OFFICIAL RATING FORM**HIGH SCHOOL**

PARTICIPANT/TEAM ID#												
EVALUATIVE CRITERIA												
Notebook (25 pts.)												
Cover page	1 pt.											
Title page	1 pt.											
Table of contents	1 pt.											
Purpose	5 pts.											
Hand-sketch storyboard	5 pts.											
Written description	5 pts.											
References, if appropriate	2 pts.											
Permission letters, if appropriate	1 pt.											
List of software and hardware	2 pts.											
Plan of Work log	2 pts.											
NOTE:												
Violation of copyright will result in disqualification.												
Visualization (50 pts.)												
Originality	5 pts.											
Creativity	5 pts.											
Social value	5 pts.											
Artistic value	5 pts.											
Technical skill	10 pts.											
Scientific value	10 pts.											
Overall effectiveness	10 pts.											
SUBTOTAL	75 pts.											
Finalist interview (25 pts.)												
Clear, concise, well-organized and professional; knowledgeable of visualization processes and scientific content												
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.											
TOTAL	100 pts.											
Comments:												
I certify these results to be true and accurate to the best of my knowledge.												
<u>Evaluator</u>												
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.

PURPOSE

Working as a team, within time and material constraints, participants have an opportunity to construct a tower 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 height 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.



Structural
Engineering
assignments change
every two years and
can be bridges, towers,
trusses, etc. A tower
is the designated
problem for 2011 and
2012.

ATTIRE and SAFETY EYEWEAR

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

Students will be 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 as safety eyewear. Should a team member remove his/her eye wear, s/he will be 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

- A. Participants report to the event area at the time and place stated in the conference program.
- B. Teams will supply their own cutting tools and fabrication supplies, which will be inspected for compliance at check-in. All tools and supplies must fit in a single box with interior measurements of twelve inches by six inches by four inches (12" x 6" x 4"). Tools that do not fit in the box will not be permitted on the competition floor. It is recommended that all tools be labeled with the school name and current contact information. The official box will be provided by the judges at check-in.
 1. Two cutting devices; the team will check in and use two (2) of the following:
 - a. A modeling knife (with a single replacement blade)
 - b. A miter box and saw
 - c. A blade and anvil cutter
 - d. Another approved cutting device; item 10. (below) may be the second cutting device, but it will not be considered as a primary cutting device
 2. A total of one (1) ounce of "super glue"; cyanoacrylate (CA) glue comes in a variety of thicknesses. As an example, the team may elect to use one half ($\frac{1}{2}$)-ounce of thin CA and one half ($\frac{1}{2}$)-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 ($\frac{1}{2}$) ounce in a one (1) ounce bottle will be considered one (1) ounce.]
 3. A single bottle of accelerator; spray accelerator must be limited to pump applicators
 4. Straight pins as needed
 5. Simple clamps such as clothes pins, binder's clips or twisty ties
 6. A single one (1)-foot ruler
 7. A cutting board
 8. Assorted emery boards
 9. Marking device (i.e., pen, pencil, and a set of color pencils or markers)
 10. Linesman pliers
 11. One (1) roll of masking tape
- C. Teams will pick up the following supplied materials:
 1. Consumable supplies; these are the materials supplied to make the structure. The basswood may be withheld until the drawing is complete.
 - a. Twenty (20) feet of $\frac{3}{32}$ " x $\frac{3}{32}$ " basswood
 - b. One (1) 3" x 5" note card
 - c. load plate [three inch (3") square of $\frac{1}{4}$ " plywood]

2. Planning and fabrication supplies. The following materials may **not** be part of the structure submitted for testing:
 - a. 11" x 17" paper with $\frac{1}{4}$ " grids for sketching the structure
 - b. Pin board, as provided
 - c. A sheet of wax paper
 - d. Structure label
- D. Students are seated in teams of two (2) by a monitor.
- E. The construction procedure is explained.
- F. A random drawing determines the height of the structure.
- G. The height of the structure is recorded, the ending time is set, and then both are announced.
- H. Remaining materials are distributed to each team when the sketch is completed.
- I. Participants may leave early, but they must complete check-in as directed.
- J. All work stops at the coordinator's signal.
- K. Teams return all supplied items as directed.
- L. The team must label the structure with the team registration number.
- M. Structures are allowed to dry in a secure area until time for testing.
- N. Structures are checked for rules violations and violations are recorded on evaluation forms.
- O. Structures are weighed before testing.
- P. Testing is completed by evaluators and is open to all conference participants.
- Q. Structures are destructively tested to determine failure weight.
- R. The efficiency rating of each structure is calculated and ranking is determined.
- S. Teams failing to comply with coordinator or monitors' directions receive a penalty of twenty percent (20%) of the team's score.
- T. Videotaping of the testing of a participant's structure is permitted by the participant or his/her representative; videotaping is allowed on only one (1) destructive test.

REGULATIONS

- A. All work is done by the team in the area specified and within the time specified by the evaluators.
- B. The materials to be distributed to each team consist of twenty (20) feet of $\frac{3}{32}$ " x $\frac{3}{32}$ " basswood and one 3" x 5" note card.
- C. Tools for construction may not be used as part of the structure and must be removed before structure check-in.
- D. A sketch of the structure on the provided graph paper must be completed before cutting or construction may begin.
- E. The height of the structure is selected by a random draw of the event coordinator and is an even number between 10" and 16".
- F. Definitions that apply to the structure
 1. Lamination: Two (2) pieces of basswood glued together surface to surface with the grain running parallel. Lamination of more than two (2) pieces is not permitted.

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

CORRECT LAMINATION



INCORRECT LAMINATION



2. Failure weight: The greatest weight recorded during testing before failure of the structure.
3. Failure to comply: If a structure fails to comply with any regulation, a penalty reduction of twenty percent (20%) of the greatest weight held in the contest is subtracted from the team's failure weight.
4. Gusset: A panel or bracket attached to corners or intersections to add strength or stiffness. Note cards may be cut and used as gussets to strengthen the joints of structures. Note card gussets are to be no larger than the diameter of a current issue American quarter dollar coin. The gussets may not touch another note card gusset. They may not be sandwiched between two (2) laminated members.

- G. The structure must be attached to the load plate. The load plate is a three inch (3") square of $\frac{1}{4}$ " plywood. The load plate will be placed on the breaker and is not part of the tower height. The load plate must be weighed before the contest, and the mass of the load plate is subtracted from the total mass of the tower.
- H. Internal members may be used to simulate cross bracing, but the participant must be certain to avoid blocking the center (location of the testing rod).

EVALUATION

- A. The structure is weighed before testing and the weight is recorded on the evaluation form.
- B. An increasing load is applied to the structure via the test block until the structure fails.
- C. The failure weight is recorded on the evaluation form.
- D. The efficiency is determined by the failure weight \times 4.54, divided by the weight of the structure in grams.
- E. The efficiency is rounded off to three (3) decimal places and recorded on the evaluation form.
- F. 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.
- G. Structures that violate guidelines will receive a deduction of 20% of the greatest weight held for the first violation.
- H. Structures are not to be tested if:
 1. there are two (2) or more rule violations.
 2. the structure cannot be placed on the tester.
 3. the testing device 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.
 6. there is evidence of conduct unbecoming a TSA conference participant during check-in, fabrication, or testing.



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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
 - 1. A minimum of one (1) per twenty (20) teams
 - 2. A timekeeper
- C. Evaluators to qualify structures after construction, two (2) or more
- D. 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, pin boards, cutting boards, wax paper, 11" x 17" graph paper with $\frac{1}{4}$ " grid. 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, four (4) copies
 - 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 height of the tower 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 $\frac{1}{4}$ " x $\frac{1}{4}$ " 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. 20' of $\frac{3}{32}$ " x $\frac{3}{32}$ " basswood
 - 2. One (1) 3" x 5" note card
 - 3. A load plate for each team
- 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 been 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 above: 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 height by random draw and announce dimension details. Post the height 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.
- 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. Failure to comply with monitors during the event results in a deduction of twenty percent (20%) of the team's score.
6. 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 twenty percent (20%).
7. 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 twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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 that is 3½ inches square and ¾ inch thick.
 6. The failure weight is recorded on the evaluation 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.

STRUCTURAL ENGINEERING									
2011 & 2012 OFFICIAL RATING FORM									
HIGH SCHOOL									
PARTICIPANT/TEAM ID#									
EVALUATIVE CRITERIA									
Check here when structure plan is received. (The structure plan has no point value. However, a plan must be submitted or the entry is not considered for competition.)									
Check here for proper structure size. (The structure must be within the specified size limits for this particular conference.)									
Load failure									
Weight of structure, in grams									
Efficiency rating (See the rules for proper formula. All rating should be accurate to three (3) decimal places, e.g., 1.123.)									
SUBTOTAL (% of greatest efficiency)									
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.									
TOTAL100 pts.									
Comments:									
I certify these results to be true and accurate to the best of my knowledge.									
<u>Evaluator</u>									
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

This challenging event attracts a special kind of student—team players who are creative and who can perform under pressure.

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.

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 question or two (2) 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

- 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:

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



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.
- 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.

A drought in the southeast has forced many cities to implement severe water restrictions on all city residents. Unfortunately, many city residents fail to follow the restrictions.

A particular city has determined that the average household uses approximately 400 gallons of water per day. Household water use is measured by water meters that calculate the gallons per hours used in each home. The water meters measure water use by revolutions of a gear on a motor. Each revolution equals 10 gallons of water used.

In an effort to conserve and regulate water use, the city's public water works system has approached your engineering firm and asked it to design an autonomous system that will monitor and regulate water use.

The system will consist of two stages—yellow and red. Stage One—Yellow represents limited water restrictions and monitors household water use, restricting it to 400 gallons of water per day. Stage Two—Red represents severe water restrictions and continues to monitor household water use but limits water use to 200 gallons on Tuesday, Thursday and Sunday and 300 on Monday, Wednesday and Friday. Efficiency and cost are essential given the southeast current economic status.

Your assignment is to construct a prototype that will implement the autonomous system described above.

EVALUATION

Teams are evaluated on their written work, model function, and programming structure and efficiency.

STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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 (3 points):

Description of the team solution (explain the unique features of the program and model) (10 points):

Directions to evaluators to start the system (2 points):

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, four (4) copies
 - 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 twenty percent (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. Secure the initials of the coordinator and manager 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.

SYSTEM CONTROL TECHNOLOGY

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#	
EVALUATIVE CRITERIA	
Inventor's log sheet (15 pts.)	
Description of problem 3 pts. Description of final solution 10 pts. Clear directions to actuate solution 2 pts.	
Model function (45 pts.)	
Realistic, industrial simulation 10 pts. Dependable solution 20 pts. Conservation of materials (efficiency) 10 pts. Ingenuity 5 pts.	
Computer program (40 pts.)	
Program is in a logical order 10 pts. Program illustrates efficient use of software to accomplish task 10 pts. Program is user friendly 10 pts. Program automatically resets 10 pts.	
SUBTOTAL 100 pts.	
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.	
TOTAL 100 pts.	
Comments: <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
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.



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.

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.

REGULATIONS

- A. An answer sheet (scan type) for the written test is 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.

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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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, four (4) copies
 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
- D. Current Technical Sketching and Application problems for semifinalists
- E. Graph or drawing 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 twenty percent (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. Secure the initials of the coordinator and manager 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.

TECHNICAL SKETCHING AND APPLICATION

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#												
EVALUATIVE CRITERIA												
Written test score	50 pts.											
Drawing test, semifinalists only (50 pts.)												
Line quality	10 pts.											
Accuracy of solution	15 pts.											
Dimensioning accuracy	15 pts.											
Neatness, letter uniformity, and general appearance	10 pts.											
SUBTOTAL	100 pts.											
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.											
TOTAL	100 pts.											
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

If there were an event “popularity contest,” Technology Bowl would be right up there with Chapter Team.

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 comprised of the same three (3) members.

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 scantron forms.
- 2. Late participants are disqualified and restricted from the test area.
- 3. Participant entry numbers are assigned during event registration and must be entered on the test paper in the space indicated.
- 4. Participants must stop work immediately when time is called.
- 5. Should a participant complete the test before the time allocated, the participant holds the test paper and remains seated quietly without distracting anyone else. Failure to do so results in disqualification of the participant.
- 6. All test papers must be turned in before leaving the test area.

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



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" 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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 each for coordinator and evaluators
 - 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. Answer sheets (scantron 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 answer sheets (scantron 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 twenty percent (20%) of the total possible points or to disqualify a participant must be discussed and verified with the evaluators, event coordinator, and a CRC manager. Secure the initials of the event coordinator and manager 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 (ORAL)

ROUND # _____

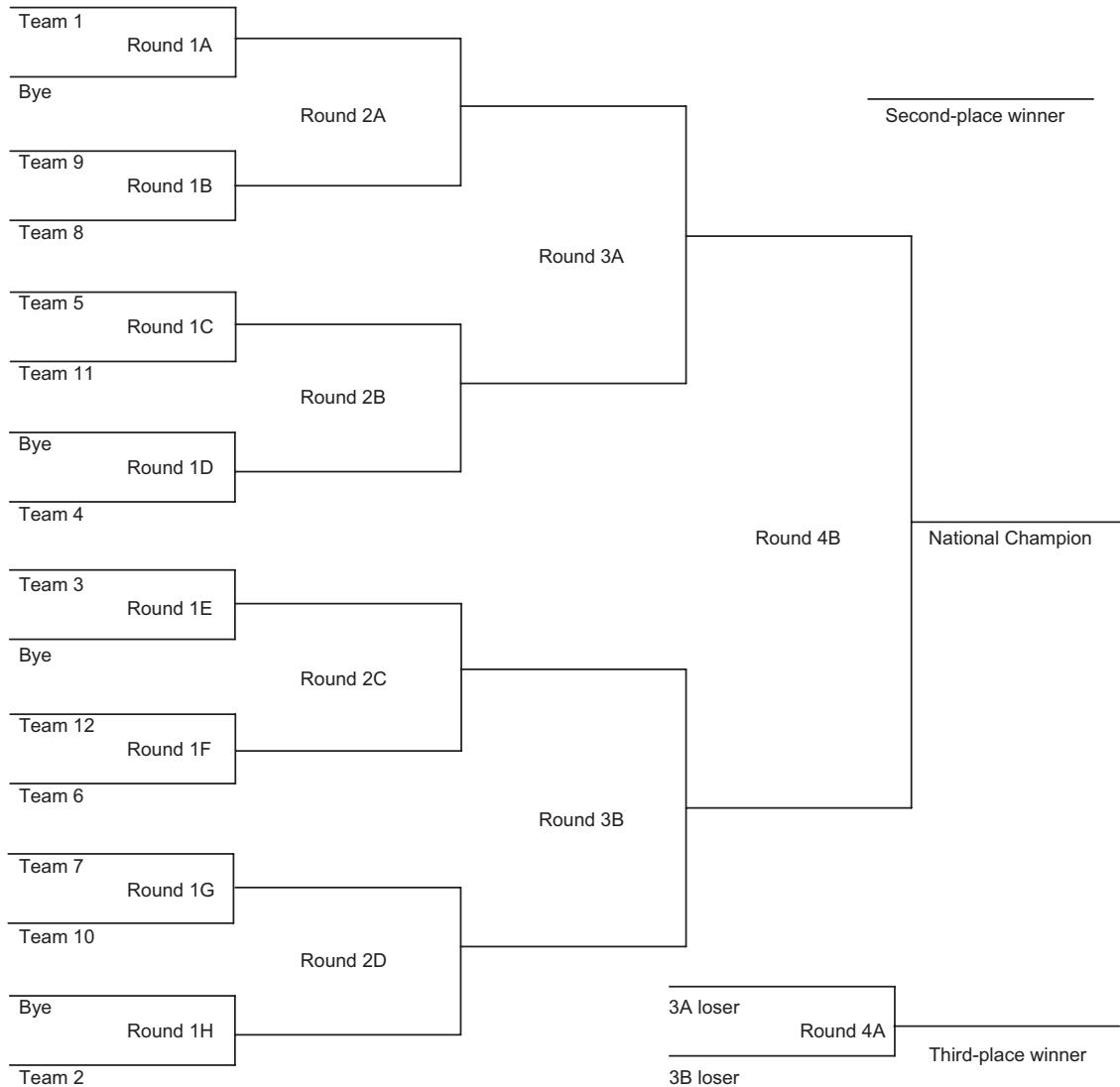
SCOREKEEPER'S
SIGNATURE _____**2011 & 2012 OFFICIAL RATING FORM****HIGH SCHOOL**

Ques. No.	Points	Team ID: Chapter	Team ID: Chapter
1.	+10 for correct, -5 for incorrect		
2.	+10 for correct, -5 for incorrect		
3.	+10 for correct, -5 for incorrect		
4.	+10 for correct, -5 for incorrect		
5.	+10 for correct, -5 for incorrect		
6.	+10 for correct, -5 for incorrect		
7.	+10 for correct, -5 for incorrect		
8.	+10 for correct, -5 for incorrect		
9.	+10 for correct, -5 for incorrect		
10.	+10 for correct, -5 for incorrect		
11.	+10 for correct, -5 for incorrect		
12.	+10 for correct, -5 for incorrect		
Bonus	+15 for answering the bonus question correctly, -5 for an incorrect answer, and +5 for answering the additional question correctly		
SUBTOTAL 140 pts.			
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.			
TOTAL 140 pts.			
Tie breaker questions			
1.			
2.			
3.			
4.			
5.			

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 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

This event requires the participant to bring the required supplies in the toolbox.

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. Electrical pliers
 2. Scissors
 3. Ruler
 4. One (1) roll $\frac{3}{4}$ " masking tape
 5. 3" C-clamp
 6. Sandpaper
 7. Safety glasses, two (2) pairs
 8. Surform type tool or file

9. Set of colored pencils (6 or more pencils)
 10. One (1) ounce of cyanacrylate glue
- 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. If the solution is to be tested for repeatability, the team has thirty (30) seconds to reset the device.

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.

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



STEM INTEGRATION

This event has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) each for coordinator and evaluators
 - 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 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. Distribute materials, as appropriate, prior to event.
- 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 twenty percent (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. Secure the initials of the coordinator and manager 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.

TECHNOLOGY PROBLEM SOLVING

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#	
EVALUATIVE CRITERIA	
Successful solution (50 pts.) Solves problem in total with repeatability = 50 pts. Solves problem in total without repeatability = 40 pts. Solves some elements = 5 to 20 pts. No reasonable attempt made = 0 pts.	
Sketches of multiple ideas for solutions (20 pts.) Quality sketches for three (3) unique ideas = 20 pts. Sketches for two (2) unique ideas = 10 to 15 pts. Sketches for one (1) unique idea = 5 to 10 pts. No sketches = 0 pts.	
Description of problem solving process (30 pts.) All major aspects addressed and in proper order = 30 pts. All major aspects addressed, but not in order = 20 pts. Some major aspects addressed = 5 to 15 pts. No attempt made = 0 pts.	
Economic use of material (used only to break a tie) Successful solution with least cost = 5 pts. Successful solution with second least cost = 4 pts. Successful solution with third least cost = 3 pts. Successful solution with fourth least cost = 2 pts. Successful solution with fifth least cost = 1 pt.	
SUBTOTAL100 pts.	
Rules violation (must be initialed by coordinator and manager)minus 20% of the total possible pts.	
TOTAL100 pts.	
Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____ Signature: _____	



TRANSPORTATION MODELING

OVERVIEW

Participants use engineering skills to design and fabricate a CO₂-powered scale model of a vehicle that meets the current year's stated design theme.

The design theme for 2011 is a custom golf cart.

The design theme for 2012 is a pre-1960 antique vehicle.

PURPOSE

Participants are provided with an opportunity to explore and experience aspects of the automotive design and engineering process, including research, conceptualization, development of drawings, prototype and model construction, and testing.

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. 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 notebook must meet the following specifications:

Model

- M1. The scale model must accurately reflect the annual design problem (see above).
- M2. 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, fenders, 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
M3. Body total width (including wheels).....	none.....	4"
M4. Body height with wheels when raced (after non-fixed parts have been removed)....	none.....
		5"
M5. Body mass (completed model without CO ₂)	none.....	2 pounds

Cartridge hole

C1. 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 $\frac{1}{8}$ " thickness around the entire power plant hole must be maintained on the vehicle for safety.

C2. Hole depth.....	2"	2 $\frac{1}{8}$ "
C3. Safety zone thickness	$\frac{1}{8}$ "	
C4. Chamber diameter	$\frac{3}{4}$ "	$1\frac{3}{16}$ "
C5. Lowest point of chamber diameter to race surface (with wheels)	$1\frac{1}{8}$ "	$1\frac{5}{8}$ "

Eye Screws

ES1. Vehicles must have two (2) screw eyes per car that meet tolerances, no more. 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.

ES2. Inside diameter	$\frac{1}{8}$ "	$\frac{1}{4}$ "
ES3. Distance apart (at farthest points).....	5"	none

Wheels

W1. Dimensions should be consistent with the scale of the body.

W2. Wheels must roll.

Notebook

The submitted notebook must be bound and may not exceed 12" x 18". 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. Also, pages that are 11" x 17" in size should be folded to fit in the notebook:

NB1. 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. 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:

	Maximum pages	Maximum size
NB2. Title page with the event title, the conference city and state, and the year. Don't forget! Your documentation must not include the name of your chapter or state.1 page	8½" x 11"
NB3. Table of contents.....	1 page	8½" x 11"
NB4. Description of designer's vehicle, noting 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	1 page	8½" x 11"
NB5. Photo examples of current or past vehicles that are similar to this year's theme or that were used as inspiration for the entry.....	1 page	8½" x 11"
NB6. Concept drawings/detailed sketches or 3D CAD modeling	2 pages	11" x 17"
NB7. Photos of the clay, foam, or wax mock up	1 page	8½" x 11"
NB8. Final technical illustrations (orthographic).....	2 pages	11" x 17"
NB9. Photos of the production of the model	1 page	8½" x 11"



Display

The model may 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.

- D. No repair or maintenance on entries is allowed after the entries have been registered. In the event the vehicle is damaged by the conference personnel, the event coordinator determines whether the vehicle may be repaired by the student entering the vehicle. Designated accessories that are 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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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) each for coordinator and evaluators
 - 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 (4 pre-tied, 2 on track, 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 twenty percent (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. Secure the initials of the coordinator and manager 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, 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.

TRANSPORTATION MODELING

2011 & 2012 OFFICIAL RATING FORM
HIGH SCHOOL

PARTICIPANT/TEAM ID#											
EVALUATIVE CRITERIA											
Notebook (40 pts.)											
Cover page	1 pt.										
Title page	1 pt.										
Table of contents	1 pt.										
Vehicle description/history report	12 pts.										
Photo examples of current/past similar vehicles ...	5 pts.										
Concept drawings/detailed sketches or 3D CAD modeling.....	5 pts.										
Photos of clay/foam or wax model.....	5 pts.										
Final technical illustrations.....	5 pts.										
Photos of production of the model.....	5 pts.										
Model (55 pts.)											
Appropriateness to problem	25 pts.										
Model appearance	20 pts.										
Model detail	10 pts.										
Time trial (maximum of 5 pts.)											
See the point allocation list in the event rules, Procedure D.											
SUBTOTAL	100 pts.										
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.										
TOTAL	100 pts.										
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
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. The game should have 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

Three (3) teams per state. There will be a minimum of two (2) people 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.

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. The notebook must be 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:

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



1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents
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. 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

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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 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 _____				

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 each for coordinator and evaluators
 - 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) laptop computers 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
- F. One (1) computer with monitor and DVD drive for each evaluation team for initial evaluation
- G. One (1) computer with monitor and DVD drive for semifinalist 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 twenty percent (20%) of the total possible points, or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager. Secure the initials of the coordinator and manager on the rating form.
- H. Each group of evaluators totals 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. 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 two (2) scores and add their result to the semifinalist's subtotal score for a maximum score of 150 points ($25 + 125$). 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.

VIDEO GAME DESIGN

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

EVALUATIVE CRITERIA											
Notebook (35 pts.)											
Cover page 1 pt. Title page 1 pt. Table of contents 1 pt. Purpose/description 5 pts. Explanation of how to play game, including control functions 6 pts. Self-evaluation 6 pts. Hand-sketched storyboard 5 pts. List of hardware/software 2 pts. References /copyrights/items not created by team 3 pts. Plan of Work log 5 pts.											
Game (80 pts.)											
Creativity 10 pts. Artisanship 10 pts. Technical skill 10 pts. Flow 10 pts. Story 10 pts. Social value 10 pts. Overall appeal 20 pts.											
Bonus points (10 pts.)											
Unique and exceptional features											
SUBTOTAL 125 pts.											
Rules violation (must be initialed by coordinator and manager) minus 20% of the total possible pts.											
Semifinalist interview (25 pts.)											
(Equal participation from both members) Explanation of notebook and game, including purpose and value 10 pts. Knowledge of software, design, and development process 10 pts. Responses to questions are thoughtful and knowledgeable 5 pts.											
TOTAL 150 pts.											
Comments:											
I certify these results to be true and accurate to the best of my knowledge.											
<u>Evaluator</u>											
Printed name: _____ Signature: _____											



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 two (2) 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: 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 TSA conference,



Webmaster
has unique entry
requirements. Entries
must be posted online
by May 15.



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

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 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.

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.

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 has connections to the STEM standards noted below. Please refer to the STEM integration section of this guide.

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 has connections 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 Career Clusters grid* as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer engineer
Webmaster
Website designer
Web technician

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, four (4) copies
 - 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 examination
- C. Internet Explorer, Chrome, Firefox, Safari, opera, Flock or most current state-of-the-art software
- D. One (1) to three (3) microcomputers or laptops 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.
- F. High speed Internet access for evaluators' use in the interview room

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 percent (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. Secure the initials of the coordinator and manager 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.

WEBMASTER

2011 & 2012 OFFICIAL RATING FORM

HIGH SCHOOL

PARTICIPANT/TEAM ID#																			
EVALUATIVE CRITERIA																			
Overall website design and originality	15 pts.																		
Proper spelling and grammar	10 pts.																		
School CTE program	15 pts.																		
TSA chapter information	15 pts.																		
Scope and sequence of design brief presentation	25 pts.																		
Website compatibility	10 pts.																		
Rules violation (must be initialed by coordinator and manager)	minus 20% of the total possible pts.																		
SUBTOTAL	90 pts.																		
Interview (semifinalists only)	10 pts.																		
Responses are correct and articulate, with participation from all representatives.																			
TOTAL	100 pts.																		
Comments:																			
I certify these results to be true and accurate to the best of my knowledge.																			
<u>Evaluator</u>																			
Printed name: _____										Signature: _____									



FORMS APPENDIX

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
At-risk students	Curriculum based activities
STEM	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 CRC for possible inclusion in a competitive events guide. Proposals must be submitted by October 1, 2012 in order 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 *2011 & 2012 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.

Are there any STEM standards addressed by this change?

Obtain signatures.

Your signature	Date	State advisor's signature	Date
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Your address/city/state/zip

Signature*	Date	Signature*	Date
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* 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 _____

Adviser'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 _____

STATEMENT OF RESPONSE

The decisions of the Rules Interpretation Panel (RIP) at the national conference are final.