

Technology Student Association (TSA) High School Competitive Events Guide

for the 2017 and 2018
National TSA Conferences

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



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CONTENTS

<u>ACKNOWLEDGMENTS</u>	vi
<u>TSA, THE ORGANIZATION</u>	vii
TSA, Inc. Mission	.viii
TSA Mission	.viii
The Role of Competitive Events	.viii
<u>COMPETITIVE EVENTS PROGRAM</u>	1
Levels of Competition	1
General Rules and Regulations	1
The Official TSA Competitive Event Rating Form/Rubric	4
National TSA Dress Code	5
Competition Regulations Committee	6
Rules Interpretation Panel	6
Event Coordinators	7
Awards	7
<u>SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) INTEGRATION</u>	8
Science Content Standards (Grades 9-12)	12
Technology Content Standards	14
Criteria for Accrediting Engineering Programs (ABET, Inc.)	16
Principles and Standards for School Mathematics	19
<u>TSA AND CAREERS</u>	20
The Career Clusters	20
TSA Competitions and the Career Clusters	23
<u>LEADERSHIP. EDUCATION. ACHIEVEMENT. PERSONAL GROWTH. (LEAP)</u>	24

<u>HIGH SCHOOL COMPETITIVE EVENTS</u>	24
Competitions	25
Competitive Events Eligibility.....	27
<u>3D Animation</u>	28
<u>Animatronics</u>	39
<u>Architectural Design</u>	52
<u>Biotechnology Design</u>	66
<u>Chapter Team</u>	78
<u>Children's Stories</u>	95
<u>Coding</u>	109
<u>Computer-Aided Design (CAD), Architecture</u>	120
<u>Computer-Aided Design (CAD), Engineering</u>	131
<u>Computer Integrated Manufacturing (CIM)</u>	142
<u>Debating Technological Issues</u>	156
<u>Digital Video Production</u>	170
<u>Dragster Design</u>	184
<u>Engineering Design</u>	197
<u>Essays on Technology</u>	209
<u>Extemporaneous Speech</u>	219
<u>Fashion Design and Technology</u>	229
<u>Flight Endurance</u>	240
<u>Future Technology Teacher</u>	251
<u>Music Production</u>	263
<u>On Demand Video</u>	277
<u>Photographic Technology</u>	289
<u>Prepared Presentation</u>	303
<u>Promotional Design</u>	314
<u>Scientific Visualization (SciVis)</u>	327
<u>Software Development</u>	341
<u>STEM Careers</u>	353

<u>Structural Design and Engineering</u>	362
<u>System Control Technology</u>	377
<u>Technology Bowl</u>	388
<u>Technology Problem Solving</u>	401
<u>Transportation Modeling</u>	411
<u>Video Game Design</u>	421
<u>Webmaster</u>	433
<u>FORMS APPENDIX</u>	446



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TSA, THE ORGANIZATION

The Technology Student Association (TSA) is a national organization of students engaged in science, technology, engineering, and mathematics (STEM). Open to students enrolled in or who have completed technology education courses, TSA's membership includes over 245,000 middle and high school students in approximately 2,000 schools spanning 49 states. TSA is supported by educators, parents, and business leaders who believe in the need for a technologically literate society. Members learn through challenging competitive events, leadership opportunities, and membership activities. From engineers to business managers, our alumni credit TSA with having a positive influence on their lives.

Explore what TSA has to offer by using this guide and by visiting www.tsaweb.org for information. With competitive events that range from video game design to software development and much more, there is something to capture the imagination of and bring out the best in all students. We hope, that with teacher guidance, students will enjoy the challenge of TSA's competitive events at local, state, regional, and national TSA conferences.

The competitions in this guide support a broad spectrum of goals related to science, technology, engineering, and mathematics (STEM) curriculum, as well as a focus on future career choices.

For more information about becoming a TSA member, visit www.tsaweb.org and click on Join TSA, or call TSA's toll free number, 888/860-9010.

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 Science, Technology, Engineering, and Mathematics (STEM); members apply and integrate these concepts through co-curricular activities, competitions, and related programs.

 Each competitive event has an event manager and a coordinator who are responsible for answering questions about the event's guidelines. Manager and coordinator names and contact information can be found on the TSA website at www.tsaweb.org under Directory/Competition Regulations Committee.

THE ROLE OF COMPETITIVE EVENTS

To embrace its mission, TSA offers competitive events, as well as recognition in both STEM and leadership arenas. TSA believes that by participating in carefully designed competitions, students learn to do their best, thereby becoming “winners” whether or not they place in a competition. Many teachers find that TSA’s 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 *Technology Student Association (TSA) High School Competitive Events Guide for the 2017 and 2018 National TSA Conferences* is the result of the work of the CRC managers, competitive event coordinators, teachers, and the proposals of numerous TSA state and chapter advisors, as well as students whose suggestions make TSA competitions 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 STEM standards. Additionally, 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 is a complement to curricular activities in the classroom.

Thank you for your interest in TSA and your support of its programs.

Rosanne T. White, Ed.D.
TSA Executive Director



COMPETITIVE EVENTS PROGRAM

LEVELS OF COMPETITION

- A. The breakdown of grades noted below is used to designate categories for curricular event entries. Each category 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 their chapter affiliates. For example, if the ninth grade is housed in a 9-12 high school, students must compete in high school events.

If the ninth grade is housed in a 6-9 or 7-9 school, ninth grade students must compete in middle school events.

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

GENERAL RULES AND REGULATIONS

- A. It is the intent of TSA to involve as many members as possible in competitive events and provide recognition in a setting of fair play practices using TSA event guidelines.
- B. Other than for the VEX event, 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 year of graduation. It is permissible for students who graduate midyear to compete at the national conference that immediately follows their end-of-year graduation.
- D. Students must be registered and be in attendance with an adult chaperone 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 competitive events. Lack of knowledge or understanding about a particular event is neither reason nor excuse for an individual to request an accommodating adjustment or change.

 General Rules

apply to *all* competitive events and are in addition to each event's specific guidelines.

- F. It is essential that students and advisors routinely check the TSA website www.tsaweb.org for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Competition Updates. When students participate in any TSA competitive event, they are responsible for knowing of all updates and changes related to that event.
- G. The TSA competitive event limit is six (6) per conference participant, individual and team events combined.
- H. Team members in an event 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.
- I. Entries (projects and/or products) may be submitted for one (1) year, and one (1) competition, only. An infraction of this rule results in disqualification.
- J. For all entries that require documentation, materials (comprising a "portfolio") must be secured in a clear front report cover; visit this [site](#) for a sample report cover.
- K. Entries must be started and completed during the current school year. All entries must be in English. Unless otherwise specified, no identifying information—other than an ID#—is to be included on an entry. Exceptions to this rule are those events that require content aligned with a school or community; such an exception will be noted in the guidelines for specific events.
- L. Unless otherwise noted, for all events that require a display, the size of the display may not exceed 15" deep x 3' wide x 4' high.
- M. 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 the use of a pencil (e.g., for taking a written test, for producing required sketches).
- N. For all applicable competitive events, citations or references must follow Modern Language Association (MLA) style.
- O. 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. If copyrighted material is used, proper written permission must be included. Failure to follow this procedure results in disqualification.

 Visit this site

(<http://mlaformat.org>)

—just one of many—to learn about MLA style.

- P. 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. The decisions of judges related to competitive events are final.
- Q. Students must check in and pick up their event entries at the times and places noted in the conference program, or as announced at the national TSA conference.
- R. 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.
- S. When a conference event scheduling conflict could prevent an individual from participating in an event, the individual has the right to decide which event is eliminated.
- T. During a conference, should a documented emergency arise in a team event that involves written and semifinalist segments, team member substitution may be allowed if approved by the event manager and coordinator.
- U. All events are judged in accordance with the stated event criteria as noted in this competitive events guide. Concern about any event during the national TSA conference should be submitted in writing to the Rules Interpretation Panel (RIP) at the conference. The RIP will render a decision at the conference. The decisions of the RIP at the national conference are final. (For more information, refer to the Rules Interpretation Panel section at the end of this guide.)
- V. Hazardous materials, chemicals, lighted or open flames, combustibles, wet cell batteries, and other similar substances are not allowed at the national TSA conference. Competition entries or presentations by participants must not include racial or ethnic slurs/symbols; reference to gang affiliation; or vulgar, violent, subversive, or sexually suggestive language or images. In addition, entries or presentations should not promote products that students may not legally buy, such as tobacco, alcohol, or illegal drugs. Images of guns, knives, or other weapons are discouraged and may be cause for disqualification.
- W. Recording devices are not allowed at conferences in certain competitive events. CRC manager and event coordinator approval is required before any event may be recorded.

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

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

 Rule (Y)

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

- X. Out of courtesy to other conference competitors and to avoid any perception of impropriety, no electronic communication devices of any kind are permitted during competition. Cell phones, iPads/tablets, electronic readers, etc., *must* be turned off.
- Y. Anyone who wishes to attend the national TSA conference must complete conference registration. All adult advisors, chaperones, and student participants must be in attendance for the duration of the conference.
- Z. National TSA provides guidelines for student and team entry content, but it does not bear responsibility for content choices made by participants. Entries are evaluated on the basis of the event's official rating form.
- AA. Rules violations and disqualifications: A rules violation that gives a conference contestant an unfair advantage will result in a twenty percent (20%) deduction of the total possible points for an event. The manager of an event also has the right to disqualify a contestant when this type of incident occurs. The event manager must sign off on both a twenty percent (20%) deduction and a disqualification.
- AB. TSA may choose to keep national TSA conference student entries. Such entries may be used by national TSA for promotional purposes. Should that occur, credit for any such entry would be noted by TSA. The *2017 & 2018 High School Technology Activities, National TSA Conference Competitive Events Guide* contains a rating form/rubric for each competition. Rubrics have been embraced by STEM educators because they provide a clear way to evaluate subjective assessments. The use of descriptors (minimal, adequate, and exemplary) for each criterion being measured in rubrics allows them to impart consistency and greater understanding to the evaluation process.

THE OFFICIAL TSA COMPETITIVE EVENT RATING FORM/ RUBRIC

The TSA rating form/rubric adds universal rigor and relevance to TSA's competitive events, addresses the desire of students to have quality feedback about their performance in these events, and provides a way for TSA members to better prepare for competitions, for advisors to carefully assist them in the process, and for judges to effectively evaluate participants and their entries with consistency.

NATIONAL TSA DRESS CODE

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

- During general sessions at a national TSA conference, student members must wear competition or general session TSA attire. Adults must dress appropriately. No flip flops, halter tops, tank tops, or shorts are permitted for anyone at general sessions.
- When students compete in any competitive event they must wear competition attire. For Chapter Team only, at both the middle school and high school levels, competitors also must wear a navy blue blazer with an official TSA patch; males (only) must wear the official TSA logo neck tie.
- Students not in appropriate competition attire when they compete may be allowed to participate in an event, but they will lose twenty percent (20%) of the total possible competition points.

Buying TSA

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

COMPETITION ATTIRE

Shirt or blouse: official TSA shirt (royal blue)

Pants or skirt: gray

Socks: black or dark blue (males only)

Shoes: black dress shoes (unacceptable: athletic shoes, army boots, combat, or work boots)

Sandals: females only may wear black open-toe shoes or sandals

Required for the middle school or high school level Chapter Team event only, but may be worn for other competitions if preferred by contestant:

Blazer: navy blue with official TSA patch

Tie: scarlet red imprinted with official TSA logo (males only)

GENERAL SESSION ATTIRE

Shirt or blouse: button-up shirt with a turned down collar or a polo/golf shirt; however, the official TSA shirt (royal blue) is preferred

Dress skirt or pants: gray (unacceptable: jeans, baggy pants, exterior pocket pants, shorts)

Socks: black or dark blue

Shoes: dress shoes or dress boots (unacceptable: athletic shoes, combat, or work boots); females only may wear open-toe shoes or sandals

CASUAL ATTIRE

The same as general session attire, OR appropriate t-shirts, shorts, or jeans.

National TSA conference registrants must wear conference identification badges at all times.



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

COMPETITION REGULATIONS COMMITTEE

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

Ideas and feedback regarding events are always welcome. There are guidelines and forms at the end of this guide for proposing a new event or for suggesting revisions to 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 the 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 ensures continuity from year to year for competitive event rules and regulations. RIP members will maintain a panel throughout national TSA conferences.

Immediately following the initial contact of an individual with concern about a rule, the RIP panel will meet to discuss and analyze the situation. Depending upon the severity of the problem, the individual may be asked to submit the grievance in writing, using the Rules Interpretation Panel Grievance form (see Forms Appendix). It is the intent of the panel to resolve all grievances at the conference with a response in writing to the advisor.

EVENT COORDINATORS

TSA is grateful for the work of its event coordinators, many of whom are teachers attending the conference with students from their chapters.

Competitive event coordinators are present for conference event check-in and check-out if they are coordinating an event in which these 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.

Event managers support coordinators as they supervise competitive events throughout the year and at national TSA conferences.

AWARDS

- A. At the awards ceremony, up to 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 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 only for each event is available on the national TSA website shortly after the conference.

Following the annual national TSA conference, the 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.



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

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

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

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

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

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

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



SCIENCE CONTENT STANDARDS (GRADES 9-12)

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

Students should develop:

 - 1. Abilities necessary to do scientific inquiry
 - 2. Understandings about scientific inquiry
- C. Physical science

Students should develop an understanding of:

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

Students should develop an understanding of:

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

Students should develop an understanding of:

 - 1. Energy in the earth system
 - 2. Geochemical cycles
 - 3. Origin and evolution of the earth system
 - 4. Origin and evolution of the universe
- F. Science and technology

Students should develop:

 - 1. Abilities of technological design
 - 2. Understandings about science and technology

G. Science in personal and social perspectives

Students should develop an understanding of:

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

H. History and nature of science

Students should develop an understanding of:

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

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



		SCIENCE CONTENT STANDARDS																																	
Event	Standard Number	A1	A2	A3	A4	A5	B1	B2	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	E1	E2	E3	E4	F1	F2	G1	G2	G3	G4	G5	G6	H1	H2	H3
1. 3D Animation		x	x				x	x													x	x								x					
2. Animtronics		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
3. Architectural Design		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
4. Biotechnology Design		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
5. Chapter Team		x	x	x																															
6. Children's Stories																					x														
7. Coding		x																			x	x													
8. Computer-Aided Design (CAD), Architecture		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
9. Computer-Aided Design (CAD), Engineering		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
10. Computer-Integrated Manufacturing (CIM)		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
11. Debating Technological Issues		x	x																		x	x	x	x	x	x	x	x	x	x	x				
12. Digital Video Production																					x	x	x	x	x	x	x	x	x	x	x				
13. Dragster Design		x																			x	x	x	x	x	x	x	x	x	x	x				
14. Engineering Design		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
15. Essays on Technology		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
16. Extemporaneous Speech		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
17. Fashion Design and Technology																					x	x	x	x	x	x	x	x	x	x	x				
18. Flight Endurance																				x															
19. Future Technology Teacher																					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	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	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	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	x	x	x	x	x	x				
24. Promotional Design		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
25. Scientific Visualization (SciVis)		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
26. Software Development		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
27. STEM Careers		x	x	x	x	x			x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
28. Structural Design and Engineering									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
29. System Control Technology									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
30. Technology Bowl									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
31. Technology Problem Solving									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
32. Transportation Modeling									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
33. Video Game Design									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				
34. Webmaster									x	x	x	x	x	x							x	x	x	x	x	x	x	x	x	x	x				

TECHNOLOGY CONTENT STANDARDS

- Standard 1: Students will develop an understanding of the characteristics and scope of technology.
- Standard 2: Students will develop an understanding of the core concepts of technology.
- Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technologies and other fields of study.
- Standard 4: Students will develop an understanding of the cultural, social, economic, and political aspects of technology.
- Standard 5: Students will develop an understanding of the effects of technology on the environment.
- Standard 6: Students will develop an understanding of the role of society in the development and use of technology.
- Standard 7: Students will develop an understanding of the influence of technology on history.
- Standard 8: Students will develop an understanding of the attributes of design.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.
- Standard 11: Students will develop the abilities to apply the design process.
- Standard 12: Students will develop the abilities to use and maintain technological products and systems.
- Standard 13: Students will develop the abilities to assess the impact of products and systems.
- Standard 14: Students will develop an understanding of and be able to select and use medical technologies.
- Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.
- Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.
- Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.
- Standard 18: Students will develop an understanding of and be able to select and use transportation technologies.
- Standard 19: Students will develop an understanding of and be able to select and use manufacturing technologies.
- Standard 20: Students will develop an understanding of and be able to select and use construction technologies.

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



		TECHNOLOGY CONTENT STANDARDS																			
Event	Standard Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. 3D Animation		x		x		x		x		x		x		x		x		x		x	
2. Animatronics			x		x		x		x		x		x		x		x		x		x
3. Architectural Design				x		x		x		x		x		x		x		x		x	
4. Biotechnology Design				x		x		x		x		x		x		x		x		x	
5. Chapter Team					x		x		x		x		x		x		x		x		x
6. Children's Stories					x		x		x		x		x		x		x		x		x
7. Coding						x		x		x		x		x		x		x		x	
8. Computer-Aided Design (CAD), Architecture		x			x		x		x		x		x		x		x		x		x
9. Computer-Aided Design (CAD), Engineering			x		x		x		x		x		x		x		x		x		x
10. Computer Integrated Manufacturing (CIM)		x		x		x		x		x		x		x		x		x		x	
11. Debating Technological Issues		x		x		x		x		x		x		x		x		x		x	
12. Digital Video Production		x		x		x		x		x		x		x		x		x		x	
13. Dragster Design		x		x		x		x		x		x		x		x		x		x	
14. Engineering Design		x		x		x		x		x		x		x		x		x		x	
15. Essays on Technology		x		x		x		x		x		x		x		x		x		x	
16. Extemporaneous Speech		x		x		x		x		x		x		x		x		x		x	
17. Fashion Design and Technology				x		x		x		x		x		x		x		x		x	
18. Flight Endurance				x		x		x		x		x		x		x		x		x	
19. Future Technology Teacher				x		x		x		x		x		x		x		x		x	
20. Music Production					x		x		x		x		x		x		x		x		x
21. On Demand Video						x		x		x		x		x		x		x		x	
22. Photographic Technology						x		x		x		x		x		x		x		x	
23. Prepared Presentation						x		x		x		x		x		x		x		x	
24. Promotional Design							x		x		x		x		x		x		x		x
25. Scientific Visualization (SciVis)							x		x		x		x		x		x		x		x
26. Software Development							x		x		x		x		x		x		x		x
27. STEM Careers								x		x		x		x		x		x		x	
28. Structural Design and Engineering								x		x		x		x		x		x		x	
29. System Control Technology									x		x		x		x		x		x		x
30. Technology Bowl										x		x		x		x		x		x	
31. Technology Problem Solving										x		x		x		x		x		x	
32. Transportation Modeling											x		x		x		x		x		x
33. Video Game Design												x		x		x		x		x	
34. Webmaster													x		x		x		x		x

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

Engineering programs must have documented student outcomes that prepare graduates to attain the program educational objectives.

Student outcomes are outcomes (a) through (k) plus any additional outcomes that may be articulated by the program.

- A. An ability to apply knowledge of mathematics, science and engineering
- B. An ability to design and conduct experiments, as well as to analyze and interpret data
- C. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- D. An ability to function on multidisciplinary 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 solutions in a global, economic, environmental, and social context
- 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 *2016-2017 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 they 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. 3D Animation	X	X	X	X	X	X	X	X	X	X	X	
B. An ability to design and conduct experiments, as well as to interpret data	2. Animtronics	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. Architectural Design	X	X	X	X	X	X	X	X	X	X	X	
D. An ability to function on multi-disciplinary teams	4. Biotechnology Design	X	X	X	X	X	X	X	X	X	X	X	
E. An ability to identify, formulate and solve engineering problems	5. Chapter Team	X	X	X	X	X	X	X	X	X	X	X	
F. An understanding of professional and ethical responsibility	6. Children's Stories	X	X	X	X	X	X	X	X	X	X	X	
G. An ability to communicate effectively	7. Coding	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. Computer-Aided Design (CAD), Architecture	X	X	X	X	X	X	X	X	X	X	X	
I. A recognition of the need for and an ability to engage in life-long learning	9. Computer-Aided Design (CAD), Engineering	X	X	X	X	X	X	X	X	X	X	X	
J. A knowledge of contemporary issues	10. Computer Integrated Manufacturing (CIM)	X	X	X	X	X	X	X	X	X	X	X	
K. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	11. Debating Technological Issues	X	X	X	X	X	X	X	X	X	X	X	
L. A recognition of the need for and an ability to engage in life-long learning	12. Digital Video Production	X	X	X	X	X	X	X	X	X	X	X	
M. An ability to communicate effectively	13. Dragster Design	X	X	X	X	X	X	X	X	X	X	X	
N. An understanding of professional and ethical responsibility	14. Engineering Design	X	X	X	X	X	X	X	X	X	X	X	
O. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	15. Essays on Technology	X	X	X	X	X	X	X	X	X	X	X	
P. An ability to communicate effectively	16. Extemporaneous Speech	X	X	X	X	X	X	X	X	X	X	X	
Q. An understanding of professional and ethical responsibility	17. Fashion Design and Technology	X	X	X	X	X	X	X	X	X	X	X	
R. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	18. Flight Endurance	X	X	X	X	X	X	X	X	X	X	X	
S. An ability to communicate effectively	19. Future Technology Teacher	X	X	X	X	X	X	X	X	X	X	X	
T. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	20. Music Production	X	X	X	X	X	X	X	X	X	X	X	
U. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	21. On Demand Video	X	X	X	X	X	X	X	X	X	X	X	
V. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	22. Photographic Technology	X	X	X	X	X	X	X	X	X	X	X	
W. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	23. Prepared Presentation	X	X	X	X	X	X	X	X	X	X	X	
X. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	24. Promotional Design	X	X	X	X	X	X	X	X	X	X	X	
Y. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	25. Scientific Visualization (SciVis)	X	X	X	X	X	X	X	X	X	X	X	
Z. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	26. Software Development	X	X	X	X	X	X	X	X	X	X	X	
AA. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	27. STEM Careers	X	X	X	X	X	X	X	X	X	X	X	
BB. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	28. Structural Design and Engineering	X	X	X	X	X	X	X	X	X	X	X	
CC. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	29. System Control Technology	X	X	X	X	X	X	X	X	X	X	X	
DD. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	30. Technology Bowl	X	X	X	X	X	X	X	X	X	X	X	
EE. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	31. Technology Problem Solving	X	X	X	X	X	X	X	X	X	X	X	
FF. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	32. Transportation Modeling	X	X	X	X	X	X	X	X	X	X	X	
GG. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	33. Video Game Design	X	X	X	X	X	X	X	X	X	X	X	
HH. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	34. Webmaster	X	X	X	X	X	X	X	X	X	X	X	

PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS

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

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

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		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. 3D Animation																																				
2. Animatronics																																				
3. Architectural Design																																				
4. Biotechnology Design																																				
5. Chapter Team																																				
6. Children's Stories																																				
7. Coding																																				
8. Computer-Aided Design (CAD), Architecture																																				
9. Computer-Aided Design (CAD), Engineering																																				
10. Computer Integrated Manufacturing (CIM)																																				
11. Debating Technological Issues																																				
12. Digital Video Production																																				
13. Dragster Design																																				
14. Engineering Design																																				
15. Essays on Technology																																				
16. Extemporaneous Speech																																				
17. Fashion Design and Technology																																				
18. Flight Endurance																																				
19. Future Technology Teacher																																				
20. Music Production																																				
21. On Demand Video																																				
22. Photographic Technology																																				
23. Prepared Presentation																																				
24. Promotional Design																																				
25. Scientific Visualization (SciVis)																																				
26. Software Development																																				
27. STEM Careers																																				
28. Structural Design and Engineering																																				
29. System Control Technology																																				
30. Technology Bowl																																				
31. Technology Problem Solving																																				
32. Transportation Modeling																																				
33. Video Game Design																																				
34. Webmaster																																				



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



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The 16 Career Clusters



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Agriculture, Food & Natural Resources

- Agribusiness Systems
- Animal Systems
- Environmental Service Systems
- Food Products & Processing Systems
- Natural Resources Systems
- Plant Systems
- Power, Structural & Technical Systems
- Architecture & Construction

Architecture & Construction

- Construction
- Design/Pre-Construction
- Maintenance/Operations

Arts, A/V Technology & Communications

- A/V Technology & Film
- Journalism & Broadcasting
- Performing Arts
- Printing Technology
- Telecommunications
- Visual Arts

Business Management & Administration

- Administrative Support
- Business Information Management
- General Management
- Human Resources Management
- Operations Management

Education & Training

- Administration & Administrative Support
- Professional Support Services
- Teaching/Training

Finance

- Accounting
- Banking Services
- Business Finance
- Insurance
- Securities & Investments

Government & Public Administration

- Foreign Service
- Governance
- National Security
- Planning
- Public Management & Administration
- Regulation
- Revenue & Taxation

Health Sciences

- Biotechnology Research & Development
- Diagnostic Services
- Health Informatics
- Support Services
- Therapeutic Services

Hospitality & Tourism

- Lodging
- Recreation, Amusements & Attractions
- Restaurants & Food/Beverage Services
- Travel & Tourism

Human Services

- Consumer Services
- Counseling & Mental Health Services
- Early Childhood Development & Services
- Family & Community Services
- Personal Care Services

Information Technology

- Information Support & Services
- Network Systems
- Programming & Software Development
- Web & Digital Communications

Law, Public Safety, Corrections & Security

- Correction Services
- Emergency & Fire Management Services
- Law Enforcement Services
- Legal Services
- Security & Protective Services



Manufacturing

- Health, Safety & Environmental Assurance
- Logistics & Inventory Control
- Maintenance, Installation & Repair
- Manufacturing Production Process Dev.
- Production
- Quality Assurance

Marketing

- Marketing Communications
- Marketing Management
- Marketing Research
- Merchandising
- Professional Sales

Science, Technology, Engineering & Mathematics

- Engineering & Technology
- Science & Mathematics

Transportation, Distribution & Logistics

- Facility & Mobile Equipment Maintenance
- Health, Safety & Environmental Management
- Logistics Planning & Management Services
- Sales & Service
- Transportation Operations
- Transportation Systems/Infrastructure Planning, Management & Regulation
- Warehousing & Distribution Center Operations

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More information on the Career Clusters® can be found at www.careertech.org.

TSA COMPETITIONS AND THE 16 CAREER CLUSTERS®



PATHWAYS TO COLLEGE & CAREER READINESS

Event	Cluster letter	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3D Animation												X				X	
Animatronics				X						X				X			
Architectural Design		X	X		X		X	X	X	X	X	X	X		X	X	
Biotechnology Design		X	X						X					X		X	X
Chapter Team					X			X					X				
Children's Stories				X		X					X						X
Coding												X					X
Computer-Aided Design (CAD), Architecture			X	X								X	X				
Computer-Aided Design (CAD), Engineering			X	X								X	X				
Computer Integrated Manufacturing (CIM)						X			X			X		X		X	X
Debating Technological Issues									X						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 and Technology					X									X			
Flight Endurance																	X
Future Technology Teacher									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 Design					X							X					
Scientific Visualization (SciVis)					X								X				X
Software Development						X							X	X	X		X
STEM Careers		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Structural Design and Engineering			X						X		X			X	X		X
System Control Technology															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				



The *2017 & 2018 High School Competitive Events Guide* introduces TSA's new leadership program, **Leadership. Education. Achievement. Personal Growth. (LEAP)** and the LEAP Be. Know. Do. criteria.

LEAP Be. Know. Do. Criteria

The purpose of LEAP is to encourage students to be the best member they can be, as they seek knowledge about themselves, the organization, and their community, while demonstrating leadership:

Embrace every opportunity to **be** reflective, ethical, trustworthy, decisive, confident, optimistic, flexible, and innovative. Strive to **know** your resources, your community, your chapter, your state delegation, your technological skills, your responsibilities, and your organization. Accept the challenge to **do** things that support your goals.

Communicate, motivate others, advocate for yourself and others, solve problems, think critically, think creatively, act with integrity, serve others, and be a lifelong learner.

Inherent to the LEAP Be. Know. Do. criteria are the five practices described in the Student Leadership Challenge (SLC).*

Model the Way (clarify values and set an example for others)

Inspire a Shared Vision (enlist others to get involved in an activity based on a common goal)

Challenge the Process (look for innovative ways to improve)

Enable Others to Act (facilitate relationships and foster collaboration)

Encourage the Heart (recognize contributions of others and create a spirit of community)

To embrace the LEAP Be. Know. Do. criteria and realize the impact that the SLC five practices can have on the development of student leadership, LEAP has been integrated into each TSA competition as part of the official rules and rubric in the *2017 & 2018 High School Technology Activities, National TSA Conference Competitive Events Guide*. Students should use the [Student Leadership Challenge resources](#), in addition to other TSA website LEAP resources, as they complete the new TSA competitive event LEAP leadership resume requirement for all TSA competitions. Participants who advance to the semifinalist level of an event will be required to participate in a LEAP interview.

LEAP Leadership Resume and Interview

An individual or team LEAP Leadership Resume is required for all competitive events and must be submitted 1) at event check-in, or 2) when participants arrive at an event at a designated event time, whichever applies.

For events with an existing semifinalist portion, the LEAP Interview will be conducted as part of the semifinalist portion of the event and will involve semifinalists responding to interview questions about their submitted LEAP Resume for an additional five (5) minutes.

For all other events, the LEAP Interview will be conducted in a separate LEAP semifinalist portion and will involve semifinalists responding to interview questions about their submitted LEAP Resume for a maximum of five (5) minutes.

More information about LEAP, including specific instructions and resources can be found on the [TSA website](#) or through the links that follow:

[LEAP Competitive Event Guidelines](#)

[LEAP Resume Statement Example Chart](#)

[LEAP Resume Individual Event Instructions \(Quick Guide\)](#)

[LEAP Resume Template – Individual Event](#)

[LEAP Resume Team Event Instructions \(Quick Guide\)](#)

[LEAP Resume Template – Team Event](#)

[Judging Protocol](#)

*Kouzes, James and Posner, Barry. *The Student Leadership Challenge – Five Practices for Becoming an Exemplary Leader*. San Francisco: John Wiley & Sons, Inc., 2008

HIGH SCHOOL COMPETITIVE EVENTS



COMPETITIONS

New and revised events:

3D Animation

Coding

Computer Integrated Manufacturing (CIM)

Fashion Design and Technology

STEM Careers

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

3D Animation
Animatronics
Architectural Design
Biotechnology Design
Chapter Team
Children's Stories
Coding
Computer-Aided Design (CAD), Architecture
Computer-Aided Design (CAD), Engineering
Computer Integrated Manufacturing (CIM)
Debating Technological Issues
Digital Video Production
Dragster Design
Engineering Design
Essays on Technology
Extemporaneous Speech
Fashion Design and Technology
Flight Endurance
Future Technology Teacher
Music Production
On Demand Video
Photographic Technology
Prepared Presentation
Promotional Design
Scientific Visualization (SciVis)
Software Development
STEM Careers
Structural Design and Engineering
System Control Technology
Technology Bowl
Technology Problem Solving
Transportation Modeling
Video Game Design
Webmaster

COMPETITIVE EVENTS ELIGIBILITY

2017 & 2018 HIGH SCHOOL COMPETITIONS	ELIGIBILITY
3D Animation	three (3) teams of two (2) members per state
Animatronics	one (1) team per chapter
Architectural Design	one (1) team, or one (1) individual, per chapter
Biotechnology Design	three (3) teams per state, two to six (2-6) members per team
Chapter Team	one (1) team of six (6) members per chapter
Children's Stories	one (1) team, or one (1) individual, per chapter
Coding	one (1) individual or one (1) team of two to three (2-3) members per chapter
CAD, Architecture	two (2) individuals per state
CAD, Engineering	two (2) individuals per state
Computer Integrated Manufacturing (CIM)	one (1) team of two (2) members per chapter
Debating Technological Issues	three (3) teams of two (2) members per state
Digital Video Production	three (3) teams per state; an individual may participate solo in this event
Dragster Design	two (2) individuals per chapter, one (1) entry each
Engineering Design	three (3) teams of three (3) or more members per state
Essays on Technology	three (3) individuals per state
Extemporaneous Speech	three (3) individuals per state
Fashion Design and Technology	three (3) teams of two to four (2-4) members per state
Flight Endurance	two (2) individuals per chapter, one (1) entry each
Future Technology Teacher	three (3) individuals per chapter
Music Production	three (3) teams per state; an individual may participate solo in this team event
On Demand Video	one (1) team of two (2) or more members per chapter
Photographic Technology	one (1) individual per chapter
Prepared Presentation	three (3) individuals per state
Promotional Design	three (3) individuals per state, one (1) entry each
Scientific Visualization (SciVis)	three (3) teams per state; an individual may participate solo in this team event
Software Development	one (1) team per chapter
STEM Careers	six (6) individuals per state
Structural Design and Engineering	one (1) team of two (2) members per chapter
System Control Technology	one (1) team of three (3) members per state, one (1) entry per team
Technology Bowl	one (1) team of three (3) members per chapter
Technology Problem Solving	one (1) team of two (2) members per chapter
Transportation Modeling	one (1) individual per chapter
Video Game Design	three (3) teams per state, with a minimum of two (2) members per team
Webmaster	one (1) team of three to five (3-5) members per chapter

GO/NO GO SPECIFICATIONS

Each competition now has a Go/No Go Specifications checklist placed at the beginning of the official rating form/rubric. Required specifications in the checklist must be met, or the individual or team will not be allowed to compete in the event. See each competition's official rating form/rubric for details.

OVERVIEW

Participants demonstrate their knowledge of 3D animation technology and design skills to creatively solve the challenge posted on the national TSA website. Semifinalists participate in an on-site competition in which they further demonstrate their 3D design skills and proficiency in 3D animation technology.



Sample projects:

- Educational walkthrough of an active chemistry lab
- Walkthrough of a derelict spaceship
- Tour of an old west frontier town
- Interactive visit to a tinker's workshop

ELIGIBILITY

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

TIME LIMITS

- A. Entries must be started and completed within the current school year.
- B. Thirty (30) minutes of set-up time is allowed for the semifinalist on-site problem.
- C. Semifinalist teams will have three (3) hours to work on the on-site problem.
- D. Each semifinalist team will be interviewed for no more than five (5) minutes about the team's entry and design process. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entry, documentation, and a LEAP Leadership Resume at the time and place stated in the conference program.

- B. Entries will be evaluated by judges, and a list of twelve (12) semifinalist teams (in random order) will be posted.
- C. Semifinalist teams will report to the location stated in the conference program. They will have thirty (30) minutes to set up for the on-site problem, and three (3) hours to complete the problem.
- D. After completion of the on-site problem, judges will interview each semifinalist team for no more than five (5) minutes about the team's entry and design process. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- E. Semifinalist teams must leave their equipment and entry for judging and will pick up their equipment at the time and place stated in the conference program.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. Participants must turn in their entry in a video format that is readable across multiple platforms (Apple, Windows, etc.) on a USB flash drive, with corresponding documentation in a portfolio for preliminary judging.
- B. Documentation materials (comprising "a portfolio") are required and should be secured in a [clear front report cover](#). The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 - a. Title page with the event title, the conference city and state, the year, and the student ID number; one (1) page
 - b. Table of contents; pages as needed
 - c. Description of final design; one (1) page
 - d. Storyboard; pages as needed
 - e. List of hardware and software used; one (1) page
 - f. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); one (1) page
 - g. References cited; pages as needed



- h. Completed and signed Student Copyright Checklist; one (1) page
- C. The entry must be the sole work of the participants and completed within the school year
- D. Participants will provide their own systems for the on-site portion of the competition (may include one [1] laptop/desktop loaded with desired software; computer; one [1] monitor; power strip; 20' extension cord; paper; and pencils).
- E. During the on-site portion of the competition, semifinalist teams will receive a design problem that they must complete within the allotted three (3) hours. It is highly recommended that students spend some time sketching and planning their solution.
- F. During the on-site portion of the competition, participants may not leave the room without the permission of the event coordinator.
- G. Semifinalist teams will each have a five (5)-minute interview with the judges about their project
- H. Semifinalist teams must leave their equipment and entry for judging and return to claim their equipment at the time and place stated in the conference program.
- I. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Entries are evaluated on the quality of the portfolio, the design quality of the 3D animation, the solution to the design problem, and the LEAP requirements. Semifinalist teams are evaluated on the design quality of their solution to the on-site problem and their interview. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Graphic designer
- Animator
- Art director
- Film and video editor



3D ANIMATION EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for check-in; two (2)
- C. Evaluators; two (2) or more
- D. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Paper for the required sketching/planning, as needed
- C. Tables for presentations
- D. 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 packet. 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 to begin, meet with 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 and collect LEAP Leadership Resumes at the time stated in the conference program.

- E. Evaluators independently assess the entries to determine the twelve (12) semifinalists.
- F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- G. Submit semifinalist results to the CRC for posting.
- H. Have each semifinalist team sign up for a specific time for its interview (within the time frame designated for the event). Once each team has scheduled an interview time, inform teams that they are to return fifteen (15) minutes before their scheduled interview time.
- I. Evaluators independently assess each semifinalist team's interview. They may take notes, but evaluation occurs only after all team members have left the event room. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- J. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- L. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

3D ANIMATION			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
<p>Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.</p> <ul style="list-style-type: none"><input type="checkbox"/> Documentation is present in a clear front report cover.<input type="checkbox"/> Video is readable/playable on judge's device.<input type="checkbox"/> Completed Student Copyright Checklist is present.<input type="checkbox"/> Completed LEAP Leadership Resume is present.<input type="checkbox"/> ENTRY NOT EVALUATED			
Portfolio (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio See Regulation B (X1)	The portfolio is unorganized and/or missing three or more components.	The portfolio includes most components and is generally organized.	All components of the portfolio are included, and content and organization are clearly evident.
Description (X1)	The description of the final design is unclear.	The description of the final design is explained appropriately.	The description of the final design is clear and concisely written.
Storyboarding and planning (X1)	The storyboard is present but it is sloppy; it is apparent the storyboard was not utilized in the creation of the animation.	The storyboard is drawn appropriately and generally correlates with the completed animation; there is some evidence the storyboard was referred to during the construction of the animation.	The storyboard is fully developed and includes camera/light directions; the storyboard is of exceptional aesthetic and artistic quality and clearly correlates to the animation; there is clear evidence the storyboard was used extensively during the project development for goal setting, organization, and task-assignment.
Plan of Work log (X1)	The log is poorly organized and/or incomplete.	The log is adequately detailed and organized, and it contains most of the required components.	The log is well-documented, and it contains all the required components.
SUBTOTAL (40 points)			

Record scores in the column spaces below.

Animation (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Aesthetics and artisanship (X1)	Project lacks neatness; animation is extremely choppy; miscellaneous strands/strokes float around the project; parts are disconnected and/or are out of place; overall project is jumpy.	Project is mostly neat; there are one or two elements that are disconnected, free-floating, or out of place; project is mostly smooth, with a few jumpy parts.	Project is very neat; there are no elements that are disconnected or out of place; project moves smoothly and cleanly with little to no jumpy parts.
Modeling and surfacing (X1)	There are errors in the overall object construction; objects are inappropriate for the assignment; appropriate surfacing is not used in the overall assignment.	Most objects are well formed with few mistakes; objects are mostly believable and appropriate for the assignment; most surfaces seem real and appropriate for the intended objects.	All objects are well formed, with no mistakes; objects and surfaces are believable and appropriate for the assignment.
Camera and lighting techniques (X1)	Lighting or camera techniques are poorly used in the overall animation; shadows are non-existent or are distracting.	Camera techniques and lighting are used, but they may be minimal or may not enhance the overall animation; they adequately add to the 3D quality; shadows are mostly realistic, and camera movements are satisfactory.	There is evidence of advanced and effective camera movements; effective lighting techniques are used to enhance the overall look and mood of the animation.
Creativity/originality (X1)	There is little original thought or creativity in the design and production to solve the design challenge.	There is some evidence of creativity/originality in the animation.	There is strong evidence of an animation that is fresh and personally creative; project has its own look and feel, and it completely stands out as original.
SUBTOTAL (40 points)			

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

Indicate the rule violated: _____

Semifinalist Project (80 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Sketches and planning (X2)	The sketches are present but they are sloppy; it is apparent that little planning was utilized in the creation of the animation.	The sketches are drawn appropriately and generally correlate with the completed animation; there is some evidence the sketches were referred to during the construction of the animation.	The sketches are fully developed, of good quality, and the final product closely represents the planning sketches.
Modeling and surfacing (X2)	There are errors in the overall object construction; objects are inappropriate for the assignment; appropriate surfacing is not used in the overall assignment.	Most objects are well formed with few mistakes; objects are mostly believable and appropriate for the assignment; most surfaces seem real and appropriate for the intended objects.	All objects are well formed, with no mistakes; objects and surfaces are believable and appropriate for the assignment.



Semifinalist Project (continued) (80 points)			
Camera and lighting techniques (X2)	Lighting or camera techniques are poorly used in the overall animation; shadows are non-existent or are distracting.	Camera techniques and lighting are used, but they may be minimal or may not enhance the overall animation; they adequately add to the 3D quality; shadows are mostly realistic, and camera movements are satisfactory.	There is evidence of advanced and effective camera movements; effective lighting techniques are used to enhance the overall look and mood of the animation.
Creativity/originality (X2)	There is little original thought or creativity in the design and production to solve the design challenge.	There is some evidence of creativity/originality in the animation.	There is strong evidence of an animation that is fresh and personally creative; project has its own look and feel, and it completely stands out as original.
SUBTOTAL (80 points)			

Semifinalist Interview (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Interview (X2)	Team shows little knowledge of 3D design concepts or tools; only one team member participates in the interview.	Team shows adequate knowledge of 3D design concepts and tools; both team members participate in the interview.	Team shows exceptional knowledge of 3D animation and design tools; both team members contribute equally during the interview.
LEAP Leadership Resume/Interview See Regulation I and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (40 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (200 points)

Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____	Signature: _____



ANIMATRONICS

OVERVIEW

Animatronics refers to a robotic device that emulates a human or an animal, or brings an inanimate object “to life.” Teams will produce an animatronics device complete with an appropriate display. The animatronics device must use control technology in its performance and fulfill the requirements of the theme to communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject, or concept. Sound, lights, and surrounding environment are to accompany the device. The design problem for the current school year will be posted on the national TSA website under Competitions/Themes and Problems.

ELIGIBILITY

- A. Participants are limited to one (1) team, one (1) entry per chapter.
- B. There is a limit of three (3) representatives per team for the presentation and for the semifinalist LEAP 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 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 portfolio and must conclude on or before the five (5)-minute time limit. Five (5) points will be deducted for exceeding the time limit. The judges’ interview is not considered part of the presentation time.
- E. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume

for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants will check in their entry (animatronic device, display, and portfolio) and submit a LEAP Leadership Resume at the time and place stated in the conference program.
- B. At check-in, each team will select an initial presentation time from the available times posted. When selecting a demonstration time, teams should avoid conflicts with other events for which team members are registered.
- C. Participants report for the presentation/interview at the selected demonstration time with the animatronics device, display, and portfolio. Only three (3) participants are allowed to set up equipment and present the project.
- D. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- E. Semifinalist teams will report at the time/place stated in the conference program to sign up for a semifinalist LEAP interview.
- F. No more than three (3) representatives per team report for the semifinalist LEAP interview. The interview will last a maximum of five (5) minutes.
- G. 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.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. The display may not exceed 15" deep x 3' wide x 4' high. The device may extend beyond the dimensions of the display during the demonstration.

- B. The animatronics device must have three (3) or more separate movements. An exterior shell or skin is required. It must be removable in order to show the judges the internal components of the project. Fluid power, gearing systems, linkages, and/or cabling systems, etc., should be incorporated to aid in the movement of the device.
- C. Sound, lights, and sensors must be used in the project model.
- D. Control technology must be used during the performance.
- E. Fluid power **MUST** be used to aid in the movement of the animatronics device. If no fluid power is used, a ten (10)-point deduction will be incurred.
- F. Documentation materials (comprising “a portfolio”) are required and should be secured in a **clear front report cover**. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, the year, and the team/chapter ID number (identification numbers are issued on site); one (1) page
 2. Table of contents; pages as needed
 3. Purpose and description 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. Electrical diagram of animatronic model; two (2) pages
 6. Fluid power systems diagram, including labels; one (1) page
 7. List of resources that includes materials, parts, software, hardware, and sources of information used in the development of the project; one (1) page
 8. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); one (1) page
 9. Completed Student Copyright Checklist (see Forms Appendix or TSA website); permission letters for copyrighted material, if incorporated; pages as needed
- G. A wet cell battery may not be used in the animatronics device.
- H. The animatronics device may use AC power, but the participant will only have access to an AC outlet during the demonstration/presentation.
- I. Should the device suggest anything that is inappropriate by language, sound, or movement, immediate disqualification will result.



- J. A team that fails to appear for its demonstration forfeits evaluation.
- K. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on performance, device artisanship, documentation of design efforts, and LEAP requirements. Please refer to the official rating form for more information.

NOTES

Learn more about animatronics by visiting the following:

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

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

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



ANIMATRONICS

EVENT COORDINATOR

INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistant for check-in and portfolio collection, one (1)
- C. Evaluators, two (2) or more for the portfolio evaluation and two (2) or more for the presentation/interview (preferably same two [2])
- D. Evaluators for semifinalist LEAP interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables 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 packet. 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 to begin, meet with 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 and collect LEAP Leadership Resumes 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/interview time.
- E. At the designated time, evaluators individually assess and score entry portfolios (prior to presentations/interviews).
- F. Notify the event manager immediately of any team reporting for the presentation/interview portion of the event that is not on the coordinator's report. A team not on the report 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 each team's demonstration presentation/interview to determine twelve (12) semifinalists. Evaluators may take notes, but scoring occurs only after all team members have left the event room.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- I. Submit semifinalist results to the CRC for posting.
- J. Meet with semifinalist teams at the time/place stated in the conference program to allow teams to sign up for a LEAP interview time.
- K. Inspect the area in which the interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
- L. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist LEAP interviews begin.
- M. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length. Evaluators determine the ranking of the finalists and discuss and break any ties.
- N. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- O. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

ANIMATRONICS			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
<p>Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.</p> <ul style="list-style-type: none"><input type="checkbox"/> Skins/shells are removable.<input type="checkbox"/> Interior skeleton and mechanism are accessible for inspection.<input type="checkbox"/> Documentation is present in a clear front report cover.<input type="checkbox"/> Completed LEAP Leadership Resume is present.<input type="checkbox"/> ENTRY NOT EVALUATED			
Documentation (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
<p>Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.</p>			
Portfolio components See Regulation F (X1)	Portfolio is unorganized and/or is missing three or more components.	Portfolio has most components, and it is somewhat organized.	Only one or no components are missing in the portfolio; content and organization are clearly evident.
Purpose and description (X1)	Purpose and description of the animatronics design idea are unclear.	Purpose and description are explained appropriately.	Purpose and description of the animatronics design are clear and concise; presentation interests the reader.
Design and test log (X1)	Design and test log is illogical and unorganized and/or shows no evidence of growth from the initial design to the final solution; log is missing two or more of the following components: date of test(s), test duration, and/or problems/redesigns.	Most components of the design and test log are incorporated, and some evidence is shown that the log was used to shape the design of the animatronics device; the log is mostly neat, organized, and concise.	The log is neat, organized, and concise; it includes all components and shows evidence that it was used to shape the animatronics design from conception through redesign(s) and then to completion.
Electrical diagram (X1)	The diagrams are missing important views that will aid in the explanation, and/or most electrical symbols are incorrect.	The diagrams have most views that will aid in the explanation, and/or most electrical symbols are correct.	The diagrams include views to aid in communicating design; all electrical symbols are correct.
Fluid power diagram (X1)	The fluid power systems diagram is missing important views or labels to effectively communicate the design.	The fluid power systems diagram has most views or labels to adequately communicate the design.	The fluid power systems diagram includes all views to aid in communicating the design.
SUBTOTAL (50 points)			

Record scores in the column spaces below.

Demonstration Presentation/interview (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Team seems unprepared and unorganized for the presentation/interview, with an illogical explanation of the project.	Team is prepared for the interview and is somewhat organized in its presentation to judges; team's presentation thesis is, for the most part, logical and/or clear.	Team's presentation/interview with judges is well organized; the interview is concise and logical, with a clear explanation of the development of the project.
Knowledge (X1)	Team members seem to have little understanding of the concepts in their project; vague interview answers are provided.	Team members have a generalized understanding of the concepts discussed and answer questions adequately.	Evidence is clear that team members have a thorough understanding of the concepts discussed; they answer questions thoroughly.
Articulation (X1)	The presentation and interview provide an unclear, unorganized, and or illogical description of the project.	The presentation and interview offer a somewhat logical and easy-to-understand project description.	The presentation/interview provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The team is verbose and/or uncertain in its presentation/interview; participants' posture, gestures, and lack of eye contact diminish the delivery.	The team is somewhat well-spoken and clear in its presentation/interview; participants' posture, gestures, and eye contact result in an acceptable delivery.	The team is well-spoken and distinct in its presentation/interview; participants' posture, gestures, and eye contact result in a polished, natural, and effective delivery.
Team participation (X1)	Only one person in the group communicates with judges; there is little or no participation from other team members.	Team members all participate to some extent and seem to understand the concepts.	Team members seem to fully understand the concepts and share an equal role in the interview.
SUBTOTAL (50 points)			

Model Appearance (30 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Creativity (X1)	Model lacks creativity; no or very few design principles are integrated in the model.	Some elements of creativity are evident, and most essential design principles are included and used somewhat effectively.	Model exudes creativity; essential design principles and elements are integrated.
Aesthetics and artisanship (X1)	Work is unorganized and/or sloppy; model seems to be an afterthought and/or thrown together.	Some layout and design principles are integrated into the model, and aesthetics are adequate.	There is exemplary use of layout and design principles; artistic and aesthetic values are incorporated.
Originality (X1)	Model lacks imagination, originality, and artistic detail.	Model is somewhat innovative.	Model is inspiring, inventive, and resourceful.
SUBTOTAL (30 points)			

**Model Function (60 points)**

Skin and skeletal function: There is no point value for the skin and skeletal function of the animatronics model. The model's skin must be removable in order to reveal skeletal function and mechanics located beneath the skin. If the skin is not removable then the entry will not be evaluated.

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Sound inclusion (X1)	There is little or no sound included, or the design suggests that the inclusion of sound was an afterthought to the model.	Sound is included, and it somewhat contributes to the overall function of the model.	The inclusion of sound is creative and effectively contributes to the design and performance of the model.	
Light inclusion (X1)	Light is minimal, or the design suggests that the inclusion of lights was an afterthought to the model.	Light is included, and it somewhat contributes to the overall function of the model.	The inclusion of a fluid power system(s) and the fluidity of movement that this system(s) provides in an animatronics model creatively and effectively contribute to the model's design and performance.	
Sensor inclusion (X1)	Sensors are included minimally, or the design suggests that the inclusion of sensors was an afterthought to the model.	Sensors are included, and they somewhat contribute to the overall function of the model.	The inclusion of sensors (and the interactivity that sensors allow) in the model is creative and effectively contributes to its design and performance.	
Control technology (X1)	Little control technology is used during the performance.	Some basic control technology is used during the performance.	Advanced control technology is used during the performance; the model is fully autonomous.	
Fluid power system inclusion (X1)	A fluid power system is included, but it functions inadequately or not at all.	A fluid power system is included, and it contributes somewhat to the overall function of the model.	The inclusion of a fluid power system(s) and the fluidity of movement that this system(s) provides in an animatronics model creatively and effectively contribute to the model's design and performance.	
Use of gears, linkages, cabling, etc. (X1)	The use of gears, linkages, cabling, etc. is minimally apparent or improperly incorporated into the model; the team shows little understanding of how to properly use these systems in the model.	Most gears, linkages, cabling systems, etc. are incorporated and used properly in the model; there is evidence of an adequate understanding of the systems.	Efficient and varied use of gears, linkages, cabling systems, etc. is apparent and properly incorporated in the model; there is evidence of a complete understanding of these systems.	
SUBTOTAL (60 points)				

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

Indicate the rule violated: _____

Semifinalist Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation K and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (210 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



ARCHITECTURAL DESIGN

OVERVIEW

Participants develop a set of architectural plans and related materials in response to an annual architectural design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design. Students must demonstrate an understanding of and aptitude for architectural design, the development of plans, Leadership in Energy and Environmental Design (LEED) applications through construction and renovation, and modeling techniques and practices. The design problem for the current school year will be posted on the national TSA website under Competitions/Themes and Problems.

ELIGIBILITY

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

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. The semifinalist presentation/interview time will be limited to ten (10) minutes.
- C. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

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

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

PROCEDURE

- A. Participants access the design problem for the specific year's challenge found on the national TSA website. They then work to complete their entry according to the event regulations.
- B. Participants check in their entries and submit a LEAP Leadership Resume at the time and place stated in the conference program. No more than two (2) team members submit and place the model and documentation.
- C. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.
- D. The individual semifinalist or two (2) representatives from each semifinalist team report to the event area at the time and place stated in the conference program. Semifinalists will sign up for a presentation/interview time and arrive at the designated location at this time.
- E. Semifinalists will use their models and documentation for reference during the presentation/interview process. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- F. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

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

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

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. The architectural model must be placed on a site board, the size of which will be posted along with the annual problem each year on the TSA website.
- B. Documentation materials (comprising "an electronic/digital portfolio") are required and must be submitted in PDF format on a standard flash drive during check in. Participants must have a second flash drive copy of their portfolio with them at the conference as a back-up and for use in the semifinalist

presentation, should they advance to that level. The documentation must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. A description of the individual/team's interpretation of the design challenge and an explanation of the style and merits of the design concepts; one (1) page
4. Demolition plan for the existing structure, succinctly listed: maximum of two (2) pages
5. List and description of each of the construction systems (any and all that apply) and their incorporation and application to the solution: building codes, building permits, construction methods and materials, electrical wiring, plumbing, HVAC, and site requirements; maximum of six (6) pages.
6. ALEED assessment for the project, according to the USGBC standards for green building; one (1) or more pages
7. A schedule of finish materials for all exterior and interior surfaces of the architectural design (this is not a list of the model construction materials); one (1) page
8. A complete set of reproduction copies of the original hand drawings and printer/plotter-generated copies of CAD drawings (a-e below) must be submitted with the model. Each drawing should be shown on maximum sheet cut size B [11" x 17"], with the appropriate scale noted on the drawing. A copy of each drawing also must be included on the flash drive. Drawings must be appropriately scaled to fit the PDF format required for submission.
 - a. original floor plan/s
 - b. sectional detail drawing
 - c. foundation plan
 - d. roof plan
 - e. landscape plan
9. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); pages as needed
10. Mentorship Verification form; students are required to seek the mentorship of an architect or other professional involved with construction and renovation (see Mentorship Verification form); one (1) page
11. A 3-D modeling/rendering drawing of the individual/team's final design with appropriate details included; drawing sheet size B, 11" x 17"; one (1) page. Drawing must be appropriately scaled to fit the PDF format required for submission.

A hard copy set of CAD drawings, as well as the same drawings included on the flash drive, are required.

Model construction: Participants are required to contact a local architect or an architectural design school to research and observe actual models in order to gain a greater perspective about the construction and assembly of an architectural model.

12. List of resources/references; pages as needed
- C. Nothing that identifies a participant's name, school, chapter, or state can be included on the model or portfolio.
- D. Model construction concepts, materials, techniques, and applications:
 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 that is $\frac{1}{2}$ " thick or greater is recommended for use as the site board for the model.
 3. Dowels may be used to represent columns or circular components.
 4. Participants should pay close attention to the scale of all materials as they relate to the scale of the model.
 5. The model may not include any electrical or battery-powered enhancements.

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

- E. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resumes as part of their presentation and/or interview. The LEAP Leadership Resume/interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Evaluation is based on points earned for the digital portfolio, the design process, the architectural model, the LEAP requirements, and the semifinalist interview. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Appraiser
- Architect
- Construction manager
- Interior designer
- Urban and regional planner

HIGH SCHOOL ARCHITECTURAL DESIGN MENTORSHIP VERIFICATION

I certify that I have served as a mentor to the student(s) named below.

Student(s) involved (please print)

Signature of student(s)

Date

TSA chapter advisor (printed name and signature)

Date

Name of mentor (please print)

Occupation (please print)

Employer (please print)

Signature of mentor

Date



ARCHITECTURAL 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 packet, containing
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- 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 packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 label in the lower right-hand corner of each display and around the documentation flash drive.
- E. One (1) hour before the event is scheduled to begin, meet with 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 to determine the twelve (12) semifinalists.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. Submit the semifinalist results to the CRC for posting.
- I. Conduct semifinalist interviews. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- J. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.



Participant/Team ID# _____

ARCHITECTURAL DESIGN			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
<p>Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.</p> <ul style="list-style-type: none"><input type="checkbox"/> Flash drive documentation is present.<input type="checkbox"/> Model is present and submitted on a site board.<input type="checkbox"/> Drawings are present.<input type="checkbox"/> Completed LEAP Leadership Resume is present.<input type="checkbox"/> ENTRY NOT EVALUATED			
Documentation (100 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
<p>Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.</p>			
Portfolio components See Regulation B (X1)	Portfolio is unorganized and/or is missing three or more components.	Portfolio has most components and is generally organized; it has sufficient content.	All components are included in the portfolio; content and organization are excellent.
Description of design interpretation (X1)	The description of the design and style is unclear or vague.	The description of the design and explanation of the style are included; they are adequately presented.	The description and merits of the design and explanation of the style are clear, effective, and convincing.
Demolition plan (X1)	The demolition plan lacks key elements and a clear explanation.	The demolition plan is included, and is generally clear.	The demolition plan is completely detailed, clear, and effective.
Construction systems See Regulation B5 (X1)	There is little or no evidence of attention to the various construction systems.	Most, but not all, construction systems are addressed; they are generally well presented.	All applicable construction systems are addressed, clearly documented, and well presented.
Schedule of finish materials (X1)	Many elements of the interior and exterior finish schedules are missing or incomplete.	Most, but not all, elements of the interior and exterior finish schedules are included.	All interior and exterior finish schedules/materials are detailed and explained clearly.
LEED Assessment (X1)	Only a minor attempt has been made to incorporate a LEED assessment of the design.	Many, but not all, aspects of a LEED assessment of the design are provided and documented.	A complete and accurate LEED assessment of the design is included.
Drawings See Regulation B.8 (X2)	A few of the required drawings are present, but they are lacking in quality.	Most, but not all, of the required drawings are included and are in the proper format.	All required drawings are included and in the proper format.
Resources/references (X1)	There is little or no effort to provide resources and references.	Resources and references included are generally presented appropriately.	There is clear evidence of the appropriate use of applicable resources and references.
Plan of Work log (X1)	The Plan of Work log lacks major elements of documentation.	The Plan of Work log is somewhat complete, and generally reflects the time and work necessary for the project.	The Plan of Work log completely and accurately reflects the time and work necessary for the project.
SUBTOTAL (100 points)			

Record scores in the column spaces below.

Design Challenge (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Effectiveness of design (X2)	The design is ineffective in meeting the needs of the challenge.	The design is somewhat effective in meeting the needs of the challenge.	The design is clearly effective in meeting the needs of the challenge.
Access and flow (X1)	The design reflects an ineffective traffic flow pattern and/or use of space to gain access to the structure.	The design reflects a somewhat effective traffic flow pattern and use of space to access the structure.	The design presents a clear, effective traffic flow pattern and full consideration of the use of space.
Aesthetic appeal (X1)	There is little evidence of consideration of aesthetics and curb appeal in the design.	There is some evidence that aesthetics and curb appeal have been considered in the design.	There is clear evidence that aesthetics and curb appeal are fully and effectively integrated into the design.
Creativity and innovation (X1)	The design lacks originality and exhibits few, if any, creative and/or innovative applications.	Some unique, innovative, and creative concepts are incorporated in the overall design.	Unique, creative, and innovative approaches are fully incorporated into the design.
SUBTOTAL (50 points)			

Model (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Quality of construction (X2)	Construction is of poor quality and appearance, with little or no attention to neatness.	Construction is somewhat neat and has appropriate quality and appearance.	Construction is of excellent quality and exemplary appearance.
Use of materials (X1)	The choice of materials is ineffective and inadequate for the type and scale needed.	There is effective choice of materials and some attention to scale.	There is effective and excellent use of materials and accurate choice of scale.
Design representation (X2)	The model is ineffective in depicting the requirements of the design challenge.	The model is somewhat effective in depicting the requirements of the design challenge.	The model clearly and effectively incorporates and depicts all aspects of the design challenge.
Landscape plan/site board (X2)	The site board is ineffective in portraying the elements of the landscape plan.	The site board is somewhat effective in representing most aspects of the landscape plan.	The site board effectively depicts all elements of the landscape plan.
SUBTOTAL (70 points)			

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

Indicate the rule violated: _____



Semifinalist Presentation/Interview (80 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participant(s) seems unorganized and unprepared for the presentation/interview.	Participant(s) is/are generally prepared/organized in the overall presentation/interview.	The presentation/interview is logical, well organized, and easy to follow.
Knowledge (X2)	Participant(s) seems to have little understanding of the concepts of the design challenge; vague answers to interview questions are provided.	An understanding of the concepts of the design challenge, and answers to questions, are adequate.	There is clear evidence of a thorough understanding of the design challenge; questions are answered well.
Articulation (X1)	The presentation and interview provide an unclear, unorganized, and or illogical description of the project.	The presentation and interview offer a somewhat logical and easy-to-understand project description.	The presentation/interview provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The team/individual is verbose and/or uncertain in the presentation/interview; participant posture, gestures, and lack of eye contact diminish the delivery.	The team/individual is somewhat well-spoken and clear in the presentation/interview; participant posture, gestures, and eye contact result in an acceptable delivery.	The team/individual is well-spoken and distinct in the presentation/interview; participant posture, gestures, and eye contact result in a polished, natural, and effective delivery.
Team participation (X1)	The full team/invididual communicates with judges.	Most members of the team participate and generally seem to understand the event.	All team members participate with mutual understanding of the event and respond effectively to questions.
LEAP Leadership Resume/Interview See Regulation E and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (80 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (300 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



BIOTECHNOLOGY DESIGN

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.

OVERVIEW

Participants select a contemporary biotechnology problem that relates to the current year's published topic and demonstrate understanding of it through documented research, the development of a solution, a display, including a model or prototype (optional), and an effective multimedia presentation. Participants may choose to recreate or simulate research that previously has been performed within the scientific community.

The topic for the current school year will be posted on the TSA website under Competitions/Themes and Problems.

ELIGIBILITY

- A. Participants are limited to one (1) team, or one (1) individual, per chapter.
- B. The semifinalist presentation/interview 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 allowed up to ten (10) minutes to give a presentation, which is followed by a few minutes for questions from evaluators.
- C. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Team members select and research a contemporary biotechnology issue related to the current year's designated topic. Resources may include but are not limited to books, interviews, websites, magazines, professional journals, etc. Team members then prepare their documentation, display, and multimedia presentation according to the event regulations.
- B. Participants check in their entries and submit a LEAP Leadership Resume 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, with their multimedia presentation, report to the event area at the time and place stated in the conference program.
- E. Semifinalist team representatives give a brief presentation and answer questions from evaluators. Up to ten (10) minutes will be provided for the presentation; with a few minutes more for questions from evaluators. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.



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

REGULATIONS

- A. All work must be started and 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. Documentation materials (comprising “a portfolio”) are required and should be secured in a [clear front report cover](#). The report cover must include the following single-sided, 8½" x 11" pages, in this order:
1. Title page with the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. 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 Forms Appendix or TSA website); one (1) page
 9. A minimum of three (3) different types of resources; such as books, interviews, professional journals, websites, magazines, etc. All must be cited using Modern Language Association (MLA) format; pages as needed.
 10. A CD or DVD of the team’s multimedia presentation. The CD/DVD and the multimedia presentation become the property of TSA.
- D. Display guidelines are as follows:
1. The size of the display may not exceed 15" deep x 3' wide x 4' high.
 2. A model or prototype is optional.
 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 the semifinalist portion of the event, in which the representatives give a multimedia presentation. The presentation explains the



Don’t forget!

Documentation must not include any identifying information beyond the team’s conference ID number.



- 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 for their multimedia presentation. Projection equipment will not be permitted. Only power will be provided.
- G. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

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

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 Career Clusters chart* and the *TSA Competitions and The Career Clusters grid* as resources for information about careers.

CAREERS RELATED TO THIS EVENT

- Bioinformatics processor
- Food scientist
- Microbiologist
- Radiographer
- Quality control analyst



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 presentations/interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tape measure for evaluators
- C. Stopwatch
- D. Display tables for entries (minimum width 18")
- E. Table and chairs for evaluators and two (2) semifinalist team representatives
- F. A 50' extension cord AND a power strip (for semifinalist interviews)

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio and display. 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 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 to determine the twelve (12) semifinalists.
- 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.
- H. Submit results to the CRC for posting.
- I. Inspect the area in which the presentations are to take place. Ensure that there is a table and seating for participants and evaluators.
- 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 semifinalist presentations begin.
- K. Conduct semifinalist presentations/interviews. Evaluators should be sure to ask questions. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- L. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- N. If necessary, manage security and the removal of materials from the event area.



Participant/Team ID# _____

BIOTECHNOLOGY DESIGN

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Documentation is present.
- Display is present.
- Multimedia presentation is present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation C (X1)	Portfolio is unorganized and/or missing three (3) or more components.	Portfolio has most components, and is generally organized.	Portfolio is missing no components and is clearly well organized.
Definition and explanation of problem and solution(s) (X1)	The definition and explanation of the problem and/or solution(s) to the problem are unclear.	The definition and explanation of the problem and/or solution(s) to the problem are generally clear.	A clear and concise definition and explanation of the problem and solution(s) to the problem are evident.
Research base (X1)	The research is inadequate, and/or very few credible sources are referenced.	The research has been conducted appropriately, with some credible sources cited.	There is a comprehensive research base with credible sources cited.
Supplementary information (X1)	Supplementary information does not help clarify documentation, or it is of little significance to the problem.	Supplementary information is appropriate and adds to the documentation by providing clarity to the problem.	Supplementary information is of excellent quality and clarifies the problem and solution(s).
Quality and effectiveness (X1)	The work is sloppy and disorganized, as if thrown together.	The work is mostly organized and of sufficient quality.	The work is well organized and of exceptional quality.
SUBTOTAL (50 points)			

Display (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Communication of problem (X1)	The problem is difficult to understand as communicated and is presented in an illogical manner.	The problem is communicated adequately, and thoughts are somewhat organized and/or concise.	The problem is communicated in an organized, clear, and concise manner.

Record scores in the column spaces below.

Display (continued) (40 points)			
Communication of solution (X1)	The solution is difficult to understand as communicated and is presented in an illogical manner.	The solution is communicated adequately, and thoughts are somewhat organized and/or concise.	The solution is communicated in an organized, clear, and concise manner.
Creativity (X1)	The work lacks creativity, with little or no integration of design principles.	Some creative elements are included, and essential design principles and elements are used somewhat effectively.	The work exudes creativity, and essential design principles and elements are integrated.
Aesthetics and artisanship (X1)	The work is unorganized and sloppy, and the display seems to be an afterthought.	The work is organized, with essential design principles given in a logical format.	The work reflects an exemplary use of layout and design principles to logically communicate important data.
SUBTOTAL (40 points)			

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

Indicate the rule violated: _____

Semifinalist Presentation/Interview (80 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participants seem unorganized and unprepared for the presentation/interview, with an illogical explanation of the problem and solution.	Participants are generally prepared for the presentation/interview; explanation of problem and solution are communicated and generally organized.	The presentation/interview is logical, well organized, and easy to follow; the problem and solution are communicated in an organized and concise manner.
Articulation (X1)	The presentation/interview is full of illogical thoughts that lack clarity, and/or there is insufficient information provided describing the project.	The presentation/interview is somewhat logical, generally easy to follow, and/or there is sufficient information provided describing the project.	The presentation/interview is clear, concise, and there is ample information provided describing the project.
Delivery (X1)	The team is verbose and/or uncertain in its presentation/interview; participants' posture, gestures, and lack of eye contact diminish the delivery.	The team is somewhat well-spoken and clear in its presentation/interview; participants' posture, gestures, and eye contact result in an acceptable delivery.	The team is well-spoken and distinct in its presentation/interview; participants' posture, gestures, and eye contact result in a polished, natural, and effective delivery.
Knowledge (X2)	Participants seem to have little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit an understanding of the concepts in their project.	Participants show clear evidence of a thorough understanding of the project.
Team participation (X1)	The majority of the presentation/interview is made by one member of the team; the partner(s) may be disengaged.	Team members generally are engaged in the process, though one member may take on more responsibility than the other(s).	All team members are actively involved in the presentation/interview and responses to questions.
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (80 points)			



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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (170 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



CHAPTER TEAM

OVERVIEW

Participants take a written parliamentary procedures test in order to qualify for the semifinals, in which they complete an opening ceremony, items of business, parliamentary actions, and a closing ceremony within a specified time period.

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. Team members who take the written test and advance to the semifinalist portion of the event must be the same six (6) members.

TIME LIMITS

- A. All teams are allowed one (1) hour to complete a written parliamentary procedures test.
- B. Semifinalist teams have fifteen (15) minutes with no penalty and up to seventeen (17) minutes with penalty (see below) to complete required parliamentary actions, items of business, set-up time, and a presentation. The time begins when the team is handed the prompt; the time ends when the gavel is rapped to close the meeting, or at seventeen (17) minutes. At that point the LEAP interview will be conducted for a maximum of five (5) minutes. Then all team members except the secretary 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 by each evaluator for going over the time allotted for the oral performance, based on the following scale:

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

No team may go beyond seventeen (17) minutes.

- C. The LEAP interview will last a maximum of five (5) additional minutes and will be conducted immediately following the



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

 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 this competition.

 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.

semifinalist performance and prior to the time when the secretary completes the minutes of the meeting.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, with additional requirements that apply for the Chapter Team event, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report for the written test at the time and place stated in the conference program. Teams must submit a LEAP Leadership Resume prior to taking the test.
- 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 five (5) 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 [TSA 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.
- F. The LEAP interview will be conducted immediately following the semifinalist performance and will last a maximum of five (5) additional minutes.
- G. The secretary will have five (5) additional minutes to complete the minutes of the meeting.

REGULATIONS

- A. Team members take the written test individually. These same six (6) team members will compete in the semifinalist portion of the event, should the team qualify.
- B. Teams consist of a president, vice president, secretary, treasurer, reporter, and sergeant-at-arms.
- C. The semifinalist portion of 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 by national TSA, may not be taken to the event room.
- E. A set of secretary's minutes, a treasurer's report, a copy of the TSA 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, six (6) pens, a calculator, and six (6) 3" x 5" notecards.
- F. Any semifinalist team that fails to appear at the designated time is placed at the end of the list and allowed to participate at the discretion of the evaluators and event coordinator if time permits.
- G. Officer symbols and a gavel are placed on a long table with the United States flag standing to 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 a team's scores.
- H. A timepiece and/or a non-programmable calculator may be used by the team, if desired.
- I. Semifinalist teams have a time limit of fifteen (15) minutes to complete required parliamentary actions, items of business (such as treasurer's report, committee reports, etc.), set-up time, and a presentation. For the parliamentary actions, the Sergeant-at-Arms will receive and distribute five (5) index cards, each with the name of an office (except the office of president) on one side and an action of parliamentary procedure on the other side. Official timing begins as soon as the parliamentary actions are provided and will stop at the team's final gavel to end the meeting. Five (5) points will be deducted for every thirty (30)-second interval over the allotted time (see TIME LIMITS).

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

 Individuals who score in the top ten on the Chapter Team written test will be recognized at the TSA awards ceremony. Semifinalist teams that score in the top ten in the oral portion of Chapter Team also will be recognized at the awards ceremony.



- J. Bonus points will be awarded for additional motions and parliamentary actions by the officers, other than the president.
- K. At the conclusion of the oral presentation, and after the LEAP interview, each team secretary has five (5) minutes to write a copy of chapter minutes that will be submitted to an evaluator. The coordinator will begin timing the five (5) minutes when the secretary is seated at the area designated for the writing of the minutes.
- L. All materials given to team members, as well as the chapter minutes and a completed treasurer's report, must be handed to the evaluators before the team leaves the room. The chapter minutes and the treasurer's report will be evaluated.
- M. No reference should be made to a team's school, chapter name, city, or state. However, the state name on a TSA patch is acceptable.
- N. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Scores on a test of fifty (50) questions determine the individual winners of the written exam and the semifinalist teams for the oral presentation portion of the event. (Each team's average written test score is used to determine the twelve (12) semifinalist teams.) A team's average test score is included in the final results. The LEAP requirements will also be evaluated. Semifinalist teams are evaluated according to the criteria on the official rating form. Please refer to the official rating form for more information.

NOTE

There are a number 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.

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

STEM INTEGRATION

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

Science, Technology, Engineering

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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 OFFICIAL MINUTES

Team ID number _____

Date _____

Location of conference _____

Use the back of this page, if necessary.

Secretary's signature _____ Date _____

CHAPTER TEAM TREASURER'S REPORT

Team ID number _____

Date _____

Location of conference _____

Balance as of _____ \$ _____

Receipts:

Total receipts \$ _____

Expenditures:

Total expenses \$ _____

Balance as of _____, 2016 \$ _____

Submitted by _____



CHAPTER TEAM EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Assistants, two (2) or more for the written test and two (2) or more for the oral presentations
- D. Timekeeper

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Copies of parliamentary procedures test
 - 5. Opening and closing ceremonies script
 - 6. List of parliamentary actions
 - 7. Copies of secretary's minutes
 - 8. Copies of treasurer's report
 - 9. Paper, pens, one (1) calculator
 - 10. Six (6) 3" x 5" note cards per team
 - 11. Pre-populated flash drives for evaluators
 - 12. Results envelope
 - 13. Envelope for LEAP Leadership Resumes
 - 14. LEAP Interview Judging Protocol
- B. Officer symbols and gavel
- C. United States flag
- D. State flag (optional)
- E. Stopwatch
- F. One (1) table and three (3) chairs for evaluators
- G. One (1) long table or two (2) tables and six (6) chairs for chapter team members
- H. Table rostrum, if available

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 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 coordinator's report. Collect LEAP Leadership Resumes. Teams who do not submit the required team resume are not permitted to compete. 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 coordinator's report or must have approval of the CRC.
- E. Administer the written test.
- F. Determine individual and team scores.
- G. Submit semifinalist results to the CRC 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, items of business/parliamentary actions should be distributed. At this point the team's allotted time begins.
- J. The LEAP interview will be conducted immediately following the semifinalist performance and will last a maximum of five (5) additional minutes.
- K. After the LEAP interview the secretary will have five (5) additional minutes to complete the minutes from the meeting.
- L. The event coordinator or an assistant is responsible for introducing each team by entry number only when the evaluators have finished scoring the previous team.
- M. 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.
- N. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the



entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.

- O. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties. Ties should be broken by using the written test scores for teams.
- P. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- Q. If necessary, manage security and the removal of materials from the area.

CHAPTER OPENING AND CLOSING CEREMONIES

OPENING CEREMONY

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

Host State Banner (Optional)

U.S. Flag Sgt.-at-Arms Reporter President Secretary Treasurer Vice Pres. State Flag
(Officers facing audience)

Audience

President: (raps gavel twice) Will the meeting please come to order. Mr./Ms. Sergeant-at-Arms, are all the officers in their places?

Sergeant-at-Arms: They are, Mr./Ms. President.

President: (raps gavel three [3] times for assembly to rise) Mr./Ms. Sergeant-at-Arms, please lead the assembly in the Pledge to the Flag of the United States of America.

Sergeant-at-Arms: (leads Pledge to the Flag)

President: (raps once and assembly is seated) Mr./Ms. Secretary, will you please call the roll.

Secretary: Mr./Ms. Sergeant-at-Arms.

Sergeant-at-Arms: Present. The symbol of my office is the “hearty handshake” (officer points to symbol), and it is my responsibility to see that the assembly is comfortable and properly welcomed. It is also my duty to serve as doorkeeper for this organization.

Secretary: Mr./Ms. Reporter.

Reporter: Present. The symbol of my office is the beacon tower (officer points to symbol), and it is my duty to see that our school, community, and national association have a complete report of our organization’s activities.

Secretary: Mr./Ms. President.

President: Present. The symbol of my office is the gavel (officer points to symbol). The duties vested in me by my office are to preside at all regular and special meetings of this organization and to promote cooperation in carrying out the activities and work of our organization. Mr./Ms. Secretary.

Secretary: Present. The symbol of my office is the pen (officer points to symbol), and it is my responsibility to see that accurate and proper records are kept of all business and correspondence of this association. Mr./Ms. Treasurer.



Treasurer: Present. The symbol of my office is a balanced budget (officer points to symbol), and it is the duty of my office to keep accurate records of all funds and see that our financial obligations are met promptly.

Secretary: Mr./Ms. Vice President.

Vice President: Present. The symbol of my office is a star (officer points to symbol), and it is the duty of my office to see that we always have a strong membership, a good work program, and are alert to the welfare of our chapter.

Secretary: Mr./Ms. President, all officers are present and in their place.

President: Mr./Ms. Sergeant-at-Arms, do we have guests present?

Sergeant-at-Arms: (If so, introduce guest[s]. If not, state the following:) No, Mr./Ms. President.

President: Mr./Ms. Secretary, we are ready to transact our business.

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

CLOSING CEREMONY

President: (raps three [3] times; assembly rises) Mr./Ms. Secretary, will you please (read) or (lead us in) the TSA Creed.

Secretary: (recites the TSA Creed) (When presented at state and national competitions, the creed may be presented using a more original method.)

President: Will the assembly repeat the TSA Motto after me. (motto is spoken) Does anyone know of any reason why this assembly should not adjourn? If not, I will entertain a motion to adjourn. (following motion to adjourn, a second, and a vote) I now declare this meeting adjourned until a special meeting is called or until our next regular meeting. (raps once with gavel)

SUGGESTED ORDER OF BUSINESS FOR CHAPTER MEETINGS

1. The president calls the meeting to order with opening ceremonies.
2. Roll call is taken and a quorum is established.
3. The secretary reads the minutes of the previous meeting. 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.
5. The chairperson calls for committee and officer reports, 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.



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

Record scores in the column spaces below.

CHAPTER TEAM

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Team Written Test (10 points)

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

#1	#2	#3	#4	#5	#6
SUBTOTAL (10 points)					

Business Meeting Demonstration (190 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Preparation for Meeting (30 points)

Official attire/poise (X2)	Appearance is untidy; grooming is lacking; clothing is not consistent in coloration and visual appearance; shoes are the wrong color; poise and confidence are missing.	Overall appearance is neat and consistent; grooming is good, and professional appearance is adequate.	Overall appearance is cohesive, polished, and businesslike.
Placement of flags and officer symbols; officer seating (X1)	Flags are not placed in the correct order; and/or officer symbols are not in the correct order; and/or are not aligned properly on the table; and/or not all officers are seated in the proper arrangement, resulting in a sloppy and haphazard appearance.	Placements and seating are generally businesslike and professional, with some inconsistencies (e.g., flags are in the correct order but are not aligned with other aspects of the officer gear; and/or several of the officer symbols are in proper order, but some are misaligned; and/or officers are seated properly, but some chairs are misaligned, etc.).	Flags are completely aligned and in proper order and placement; officer gear is placed in the correct order and in proper alignment on the table; the seating arrangement is precise, businesslike and professional.

Knowledge of TSA (20 points)

Opening ceremony (X1)	Many items of sequence and order are incorrect and officers make several mistakes.	Officers make few, if any, sequence and order mistakes, resulting in a fairly smooth opening ceremony.	The opening is smooth and efficient; the opening ceremony progresses as it should.
Closing ceremony (X1)	Officers make several mistakes; creed recitation is sloppy and the overall effort is unpolished.	Appropriate procedures are followed, with some mistakes made (e.g., creed recitation).	The closing is outstanding, with no mistakes; the presentation is highly polished.

Business Meeting Demonstration (continued) (190 points)			
Knowledge of Parliamentary Procedure (140 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Voting procedures (X1)	Several obvious mistakes are made in voting procedures.	Few mistakes are made in voting procedures.	All voting procedures are correct, smooth, and efficient.
Debate (exclude president) (X3)	Only a few officers participate effectively in the debate, which is loosely presented.	Most officers participate in the debate process and are somewhat convincing.	All officers participate in and present a highly cohesive debate.
Parliamentary actions (X5)	Only one of the required actions is completed correctly.	At least three of the actions are completed correctly, with adequate effort.	All five actions are completed correctly, with notable and inspiring effort.
Communication (X2)	Communication is unclear; some mumbling occurs and/or voices are too loud or too soft; and/or problems occur with verbal expression (e.g., grammar, sentence structure).	Communication is generally clear, with appropriate volume of voices and only minor problems with articulation or verbal expression.	Communication is clear, concise, and easy to understand; voices are well modulated, and speakers are articulate.
Treasurer's report (X1)	The report is incorrect or not complete; math and spelling errors are evident.	The report generally is correct and complete, with few math and/or spelling errors.	The report is correct and complete, with no math or spelling errors.
Chapter minutes (X2)	The format of the minutes is incorrect or not complete; grammar and spelling errors are evident.	The format of the minutes is generally correct and complete, with few grammar and/or spelling errors.	The minutes are formatted correctly, are complete, and have no grammar or spelling errors.
SUBTOTAL (190 points)			

TIME DEDUCTIONS (NO TEAM MAY GO BEYOND 17 MINUTES.)

A five-(5) point deduction will be incurred for every thirty (30)-second interval over the allotted time. Multiply the number of intervals by five (5) and record the total deduction in the column to the right.

of intervals X 5 = _____ (total deduction)

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

Indicate the rule violated: _____

BONUS For additional motions and parliamentary actions (by officers other than the president) (X2)	One additional action is completed correctly.	Two additional actions are completed correctly.	Three additional actions are completed correctly.
SUBTOTAL (20 points)			



Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation N and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
			SUBTOTAL (20 points)
(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)			TOTAL (230 points)
Comments:			
I certify these results to be true and accurate to the best of my knowledge.			
<u>Evaluator</u>		Printed name: _____ Signature: _____	



CHILDREN'S STORIES



What is a story?

For this event, the term “story” refers to all types of literature structures — fables, tales, poems, or instructional literature — and the included illustrations.

Who is a child?

For this event, children are defined as those twelve years or younger.

OVERVIEW

Participants create an illustrated children’s story of high artistic, instructional, and social value. The narrative may be written in prose or poetry and take the form of a fable, adventure story, or other structure. The physical story book should be of high quality, designed to meet the year’s given theme, which will be posted on the national TSA website under Competitions/Themes and Problems.

The story must have a Science, Technology, Engineering, and Mathematics (STEM) focus. There are many themes to consider. For example, from the sciences one could create a story about dinosaurs, the oceans or their extraordinary sea life, a single cell animal, or our solar system and beyond. From technology and engineering one could concentrate on the impacts of technology in our lives, or the environment, the building of ancient and contemporary monuments, or how something works. From mathematics one could write about numbers and shapes and the many mathematical designs found in nature and the industrial world.

ELIGIBILITY

Participants are limited to one (1) team or one (1) individual per chapter. A team of one (1) is permitted.

TIME LIMITS

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

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP*



Leadership Resume template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. In preparation for the event (and throughout the story development), participants research writing and illustrating children's books and literature, as well as the creation of storybooks similar to the annual design challenge (e.g. pop-ups, interactive books, etc.). Participants must cite all their research sources in the documentation portfolio.
- B. Participants develop a high-quality children's storybook, with illustrations. The illustrations should enhance the effectiveness of the narrative. Participants submit their storybook and required documentation portfolio; the documentation portfolio and storybook must be submitted together, or the entry will not be judged.
- C. As part of evaluation, the storybook must be "field tested" to:
 - a) ensure that the book will meet the physical demands of the age group for which it was intended, and b) assess the quality and impact of the story, illustrations, and the book overall. The audience's responses should be recorded in the team's Plan of Work log. Each field test must be signed off by the chapter advisor.
- D. Participants check in their storybooks, portfolios, and a LEAP Leadership Resume at the time and place stated in the conference program. No more than two (2) team members drop off the team's entry.
- E. Storybooks and portfolios are then reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.
- F. Semifinalist teams report to the event area at the time and place stated in the conference program. Semifinalists will sign up for a reading and interview time. Teams must arrive punctually for the reading and interview time.
- G. Semifinalist teams will be represented by no more than two (2) members. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes. One member will be the team's reader, who will read the story to the judges. The reader will be given up to

As you begin your research, check out these websites:

[http://www.ala.org/
alsc/awardsgrants/
bookmedia/
newberymedal/
newberymedal](http://www.ala.org/alsc/awardsgrants/bookmedia/newberymedal/)

[http://www.ala.org/
alsc/awardsgrants/
bookmedia/
caldecottmedal/
caldecottmedal](http://www.ala.org/alsc/awardsgrants/bookmedia/caldecottmedal/)

This competition hopes to combine the best of children's literature by reflecting criteria found in the selection of Newbery and Caldecott awards.

twelve (12) minutes to read the story. The other team member should be prepared to discuss illustrations included in the story. Both members will participate in the interview process following the reading of the story. The interview process will last up to five (5) minutes.

- H. 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.
- I. Ten (10) finalists will be announced during the conference awards ceremony.

 Story entries must not exceed 1,500 words. Participants should use word processing software to count the number of words in the story to make sure the entry adheres to this regulation.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Participants design and create a storybook, complete with narrative and illustrations, to meet the annual design challenge.
- B. The physical storybook should be of high quality, designed to meet the year's given theme (pop-up book, interactive book, etc.) and withstand the wear and tear of the age group for which it is intended. Together with the book, the narrative and accompanying illustrations should result in an experience that delights, enlightens, and helps in the wholesome development of a child. The book, narrative with accompanying illustrations, should take between five ten (5-10) minutes to read and view.
- C. The story must be no more than fifteen hundred (1,500) words. There will be a five (5)-point deduction for every hundred (100) words more than fifteen hundred (1,500) words. Stories of two thousand (2,000) or more words will be disqualified. There is no minimum number of words required.
- D. The physical storybook should not exceed 12" x 12" when closed. There is no limit on the number of inside pages (may be one-sided or two-sided). The team will determine which format best presents the team's narrative and illustrations.
- E. There should be a minimum of seven (7) illustrations that enhance the story and deepen the child's understanding and enjoyment of the reading experience. An illustration on the

 NOTE:
If illustrations are hand drawn, do NOT put them in the portfolio. Make copies of them and leave the originals at home in a safe place.

- book's cover can count as one of the required illustrations. The team may use the cover illustration within the story as well.
- F. All illustrations MUST be original, freehand, and/or computer-generated drawings by the team member(s). All computer-generated work MUST be developed from primitive lines and shapes and be the sole work of the team member(s). Physical or computer templates, previously existing drawings, characters, backgrounds, etc., are NOT PERMITTED. All work must have been developed during the current school year.
- G. Because the narrative and illustrations must be the original work of the team members, NO copyrighted material is permitted. If narrative or illustrations appear in the story and they are not authored by one of the team members, the team will be disqualified.
- H. The physical storybook must be the original work of the team members. The book should be designed, engineered, created, and bound together solely by the team; no professional binding is allowed. Pre-manufactured parts/kits for special interactive features (e.g. lights/sounds, finger puppets,etc.) may be included.
- I. The team's work will be submitted—both the physical storybook and the team's portfolio—at the appropriate designated time and place at the conference.
- J. The documentation materials (comprising "a portfolio") are required and should be secured in a **clear front report cover** and submitted with the storybook. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
1. Title page with the title of the story, the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Purpose of story (one [1] page) to include:
 - a. Story's intent
 - b. Summary of storyline, and theme
 - c. Intended audience (age, gender, demographics, special disabilities if any)
 - d. Word count—number of words comprising the story's narrative
 4. A summary indicating the academic as well as ITEEA standards used in the creation of the final project; one (1) page.
 5. A Plan of Work log (see Forms Appendix or TSA website) that describes the development of the narrative, illustrations, and physical storybook. The Plan of Work log should include a summary of the storybook's assessment during

The story should be designed so that it can be read at the same pace it would be read to a child — finished within approximately ten (10) minutes.

a “field test” with a group of children within the age group specified. There may be more than one field test. Each field test should be documented and should include date, time involved, team members responsible, and comments from the field test group. Each field test should be signed off by the chapter advisor; pages as needed.

6. A summary of the research, writing strategies, problems encountered, and solutions developed in the writing and illustration of the story; one (1) page.
 7. A summary of the research into the creation of storybooks similar to the annual design challenge (e.g. paper folding, interactive features in books, etc.). The summary should include the process and challenges the team encountered and the solutions developed in overcoming them; one (1) page.
 8. A list of tools, software (if any), and techniques used in the creation of the physical storybook and illustrations; not to exceed one (1) page.
 9. References; one (1) page
- K. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Evaluation is based on the portfolio, the LEAP requirements, the story (narrative and illustrations), the physical storybook, and the reading of the book and interview (semifinalists only). Please refer to the official rating form for more information.



STEM INTEGRATION

Depending upon the subject written about, this event may align to one or more STEM areas. Please refer to the STEM Integration section of this guide for more information.

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Writer
- Illustrator
- Educator
- Editor
- Publisher
- Graphic artist

CHILDREN'S STORIES

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for check-in, two (2)
- C. Evaluators for portfolios, two (2) or more
- D. Evaluators for semifinalist readings/interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for numbering entries
 - 6. Marking pens for evaluators
 - 7. Stick-on labels for entries, as needed
 - 8. Results envelope
 - 9. Envelope for LEAP Leadership Resumes
 - 10. LEAP Interview Judging Protocol
- B. Stopwatch
- C. Display tables for entries (minimum width 18")
- D. Table and chairs for evaluators and two (2) semifinalist team representatives

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluators and assistants have been scheduled.
- B. Inspect the area in which the portfolios are being placed for appropriate set-up including sufficient number and size of tables.
- C. Check in the entries and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio and storybook. Position the 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 assess the entries.
- G. Evaluators independently assess the entries to determine the twelve (12) semifinalists.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager.
- I. Submit the semifinalist results to the CRC for posting.
- J. Inspect the area in which the readings/interviews are to take place. Ensure that there is a table and seating for the interviews.
- K. Meet with 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 readings/interviews. Evaluators should be sure to ask questions. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- M. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- N. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- O. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

CHILDREN'S STORIES

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Portfolio is present.
- Storybook is present.
- The story is no more than 1,500 words (verified in documentation).
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio components (X1)	The portfolio is unorganized and/or is missing three or more components.	The portfolio is missing one or two components; it is generally organized.	The portfolio has all required components and is well organized.
Purpose of story (X1)	The story's intent, story-line, and theme are poorly explained, and/or the intended audience is not identified.	The story's intent, story-line, theme, and intended audience are adequately explained.	The story's intent, storyline, theme, and intended audience are complete and well explained.
Plan of Work log (X1)	The log is poorly organized and/or incomplete.	The log is adequately detailed and organized and contains all the required components, including a recording of the periodic readings to children.	The log is well documented and contains all the required components, with special attention given to periodic readings to children.
Professional and technical information (X1)	The summary of the research, design, and writing process is poorly done and/or is incomplete.	The summary of the research, design, and writing process is generally clear and complete.	The summary of the research, design, and writing process is extremely well written, detailed, clear, and complete.
Research base (X1)	There are few references listed, and/or the references listed show little relevance to the project's goal.	There are a sufficient number of references listed; the quality is good.	Many quality references are listed; they reflect research in writing and illustrating for children and child development.
SUBTOTAL (50 points)			

Record scores in the column spaces below.



The Storybook (100 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Story narrative (X3)	The narrative is poorly written; there is little apparent purpose; it is lacking a coherent theme and storyline.	The narrative's purpose is generally clear, with a focused theme and storyline; the narrative has good pacing and development of characters and/or events.	The narrative is extremely well written, with a clear purpose; the storyline is fast paced and exciting; the details are rich and enchanting.
Illustrations (X3)	Artisanship of the illustrations reflects little technical skill and/or adds little value to the story's narrative, storyline, and/or theme.	Artisanship of most illustrations reflects good technical skill; illustrations add to the story's narrative, story-line, and theme.	Artisanship of illustrations is excellent, reflecting sophisticated technical skills; illustrations enhance the story's narrative, story-line, and theme, and they are of high aesthetic quality.
Impact (X4)	The story (narrative, with the illustrations) is lacking in purpose and coherence; it is not very interesting; the story lacks artistic, and/or instructional, and/or social value.	The story (narrative, with the illustrations) reflects a purpose and coherence throughout most of the work; the story reflects artistic, instructional, and social value; it is generally compelling and entertaining.	The story (narrative, with the illustrations) is beautifully told; it is compelling, entertaining, and purposeful, and it reflects high artistic, instructional, and social value.
SUBTOTAL (100 points)			

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

Indicate the rule violated: _____

Story length violation: For stories exceeding 1,500 words, a deduction of 5 points will be incurred for every 100 words more than 1,500 up to 2,000. Stories of 2000 words or greater will be disqualified. Example: 1600 – 1699 words - 5 points; 1700 – 1799 words - 10 points; 1800 – 1899 words - 15 points; 1900 – 1999 words - 20 points; 2000 words and above, disqualified.

Semifinalist Reading and Interview (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Story's reading (X1)	The story's reading was lackluster; the reader showed little enthusiasm; the delivery was halting and difficult to understand; the story was read too quickly to permit viewing of the illustrations.	The story's reading was generally good; the reading was clear and usually well paced and enthusiastic; sufficient time was given for reflection on the illustrations.	The story's reading was exemplary; the reading was clear, well paced, and enthusiastic; sufficient time was given to reflect upon and appreciate the illustrations.
Interview (X2)	Responses to the judges' questions were incomplete and/or poorly articulated; responses showed little understanding of the research or development of the project.	Most of the judges' questions were answered with articulation and showed some understanding of most of the concepts addressed.	Responses to the judges' questions were detailed and articulate; the answers reflected a high degree of understanding of the development of children's literature, including the artistic and technical concepts in both writing and illustrating for children.

Semifinalist Reading and Interview (continued) (50 points)

LEAP Leadership Resume/Interview See Regulation K and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.	
SUBTOTAL (50 points)				

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (200 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



OVERVIEW

Participants respond to an annual coding-related design challenge by developing a software program that will accurately address an on-site problem in a specified, limited amount of time. Specific elements to be used, such as the programming language, operating system, or application programming interface (API), will be released on-site. Completed solutions will be objectively measured to determine the best and most effective solution for the stated problem.

ELIGIBILITY

Participants are limited to one (1) individual, or one (1) team of two to three (2-3) members per chapter, one (1) entry per individual or team.

TIME LIMITS

The allotted time for the design and construction of the solution is two (2) hours.

Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at the designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program. Participants must submit a LEAP Leadership Resume prior to receiving the onsite problem.
- B. The problem, evaluation criteria, and materials are distributed.
- C. Participants are required to provide their own computer hardware and software.
- D. Teams have two (2) hours to design and present a solution.
- E. Each solution is tested and presented to the judges as soon as possible after the coding phase is completed.
- F. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- G. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- H. No more than three (3) representatives per team report for the semifinalist LEAP interview. The interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. All work must be completed in the event area during the time specified for the event.
- B. Teams must bring one (1) laptop or desktop computer with charging cables, one (1) monitor, one (1) power strip, and pencils and paper.
- C. Students will not have access to the Internet during the event. Students must have all software development tools needed for the competition downloaded and accessible on their computers.
- D. All solutions must be tested, demonstrated, and presented by participants in front of the judges.
- E. Participants in this event should concentrate their efforts prior to the competition on researching, understanding, and practicing



- all aspects of the coding process, software development, operating systems, programming languages, etc.
- F. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume, the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/ Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Solutions are evaluated objectively. A finite measure will be defined in the problem and will be 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 will subjective criteria, such as originality, be used to evaluate solutions. The LEAP requirements will also be evaluated. Please refer to the official rating form for more information.

STEM INTEGRATION

Depending upon the subject of the problem, this event may align to one or more STEM areas. Please refer to the STEM Integration section of this guide for more information.

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

Computer software engineer
Mathematician



CODING

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for set-up, monitoring, and clean-up of on-site activity, two (2) or more
- C. Evaluators, two (2) or more
- D. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables and chairs for participants
- C. Tables and chairs for evaluators, to be used for information distribution and evaluation
- D. A copy of a well-written, technologically appropriate problem for each team that can be objectively measured
- E. Adequate conditions, tools, materials, monitoring, and testing devices for the 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 packet. Review the event guidelines and check to see that enough evaluators and 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 to begin, 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.
- D. Check tools, materials, and monitoring and testing devices.
- E. Begin the event at the scheduled time by closing the doors and checking the entry list. Collect LEAP Leadership Resumes. 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.
- F. Once teams are seated and general announcements have been given, distribute and review the problem and start the time.
- G. Evaluators and monitors observe the entire construction phase, with evaluators measuring solutions as soon as appropriate.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager.
- I. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- J. Meet with semifinalist teams at the time and place stated in the conference program to allow them to sign up for a semifinalist LEAP interview time.
- K. Inspect the area in which the LEAP interviews will take place. Ensure that there is a table and seating for participants and evaluators.
- L. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
- M. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.
- N. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- O. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- P. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

CODING

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Solution Development (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Hardware and software See Procedure C (X1)	Very little of the hardware and software are used appropriately, effectively, and efficiently. There is little or no evidence of research, understanding, and practice in the usage.	Some of the hardware and software are used appropriately, effectively, and efficiently. There is some evidence of research, understanding, and practice in the usage.	All of the hardware and software are used appropriately, effectively, and efficiently. There is complete and solid evidence of research, understanding, and practice in the usage.
Solution (X2)	The solution developed is unable to fully meet or solve the defined problem.	The solution is somewhat developed and generally meets or solves the problem.	The solution is fully developed and clearly meets or solves the identified problem.

SUBTOTAL (30 points)**Testing of Solution (50 points)****Evaluation**

A finite unit of measure, such as elapsed time, linear distance, and/or strength, etc., is used to determine ranking.

1st: 50 Points	2nd: 45 Points	3rd: 40 Points	4th: 35 Points	5th: 30 Points
6th: 25 Points	7th: 20 Points	8th: 15 Points	9th: 10 Points	10th: 5 Points

SUBTOTAL (50 points)

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

Indicate the rule violated: _____

Record scores in the column spaces below.

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation F and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (100 points)

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), ARCHITECTURE

OVERVIEW

Participants have the opportunity to use complex computer graphic skills, tools, and processes to develop representations of architectural subjects such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry.

ELIGIBILITY

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

TIME LIMITS

- A. Thirty (30) minutes is allowed for set-up time.
- B. Four (4) hours is allowed for participants to develop drawing(s).
- C. One (1) hour is allotted for the final evaluation.
- D. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at the designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants bring their own computer systems (see Regulation A) to the event area at the time and place stated

CAD involves two (2) separate events:

CAD, Architecture

CAD, Engineering

CAD, 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.

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

Participants must provide—and bring to the event site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for this competition.

- in the conference program. Participants must submit a LEAP Leadership Resume prior to receiving the design problem.
- B. Each participant, with one (1) assistant (an instructor, fellow student, or adult chaperone), is allowed to set up and test the equipment. At the end of the thirty (30)-minute set-up period, assistants are required to leave the area.
 - C. Participants are given a design problem to solve in 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 a USB flash drive.
 - G. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.
 - H. Participants report to the event area at the time and place stated by in the conference program to pick up their equipment.
 - I. Semifinalists will be determined and posted by the CRC.
 - J. Semifinalists will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
 - K. The LEAP interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Participants provide their own systems, including hardware (only one [1] CPU and one [1] monitor), software, one (1) USB flash drive, 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 capable of reading a USB flash drive.



- B. A table, chair, sketching paper, and electricity will be supplied for each participant. Students are required to provide their own pencils.
- 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. USB flash drives and the work they contain become the property of TSA, Inc.
- G. Teams members report to the event area at the time and place stated in the conference program to pick up their equipment.
- H. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Entries are evaluated on screen according to the criteria on the official rating form. The LEAP requirements will also be evaluated. Please refer to this form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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), ARCHITECTURE EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Assistants, one (1)
- D. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables and chairs for participants and evaluators
- C. 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 packet. 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 to begin, meet with 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 coordinator's report and assign participants to work stations.
- E. Begin the event at the scheduled time. Collect LEAP Leadership Resumes. 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.
- F. Allow thirty (30) minutes for participants and their assistants (no more than one [1] per participant) to set up equipment. At the end of the thirty (30)-minute 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 participant 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 USB flash drives.
- 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. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- O. Meet with semifinalists at the time and place stated in the conference program to allow them to sign up for a semifinalist LEAP interview time.
- P. Inspect the area in which the interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
- Q. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist interviews begin.
- R. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.



- S. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- T. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- U. Breakdown of equipment is permitted only after the work of ALL participants has been evaluated.
- V. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- W. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

Record scores in the column spaces below.

CAD, ARCHITECTURE

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Solution to problem (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Design (X1)	The drawing as presented does not create an effective model for the problem assigned.	The layout and design of the drawing as presented create a somewhat effective model for the problem assigned.	The layout and design of the drawing completely and effectively model the problem assigned.
Functionality (X1)	The design as drawn is impractical, disorganized, and lacks directional flow.	The design is somewhat practical in directional flow and organization.	The design is clearly effective, practical, and functional.
Originality (X1)	The design drawing provides few, if any, attempts at originality or deviation from the traditional.	The design drawing attempts to be somewhat creative and shows some evidence of being non-traditional.	The design drawing provides a unique and creative quality of newness that departs from tradition.
Aesthetics (X1)	The design is unappealing and fails to capture the observer's attention.	The design is somewhat pleasing and appealing and attempts to capture the observer's attention.	The overall design is pleasing and appealing and effectively draws attention to its appearance/beauty.
SUBTOTAL (40 points)			

Layout (60 points)

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



Layout (continued) (60 points)			
Dimensioning (X1)	Many of the necessary dimensions are missing and/or are incorrectly placed.	Most of the necessary dimensions are included and/or are correctly placed.	All necessary dimensions are included and correctly placed.
Scale (X1)	The scale selected for the drawings is incorrect and improperly noted.	The scale selected for most aspects of the drawings is correct and properly noted.	The scale selected for all aspects of the drawings is correct and properly noted.
SUBTOTAL (60 points)			

Architectural Application (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Use of symbols (X1)	Many, if not most, of the symbols selected and used are incorrect.	Most of the symbols selected and used are correct and/or appropriately placed.	All of the symbols selected and used are correct and appropriately placed.
Appropriate standards (X1)	There is little or no evidence of an appropriate application of architectural standards in the completed design and drawings.	There is some evidence of an appropriate application of architectural standards in the completed design and drawings.	There is clear evidence of an effective and appropriate application of architectural standards in the completed design and drawings.
SUBTOTAL (20 points)			

Software Utilization (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
CAD functions (X1)	There is little evidence of an understanding and application of CAD functions.	There is evidence of a general understanding and effective application of CAD functions.	A complete and effective understanding and application of CAD functions is evident.
CAD features (X1)	There is little evidence of an understanding and application of CAD special features.	There appears to be a general understanding and application of CAD special features.	There is a complete understanding and application of the various special features of CAD.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation H and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (160 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



COMPUTER-AIDED DESIGN (CAD), ENGINEERING

OVERVIEW

Participants have the opportunity to use complex computer graphic skills, tools, and processes to develop three (3)-dimensional representations of engineering subjects such as a machine part, tool, device, or manufactured product.

ELIGIBILITY

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

TIME LIMITS

- A. Thirty (30) minutes is allowed for set-up time.
- B. Four (4) hours is allowed for participants to develop drawing(s).
- C. One (1) hour is allotted for the final evaluation.
- D. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

CAD involves
two (2) separate
events:

CAD, Architecture

CAD, Engineering

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at the designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants bring their own computer systems (see Regulation A) to the event area at the time and place stated in the conference program. Participants must submit a LEAP Leadership Resume prior to receiving the design problem.

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

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

Participants must provide—and bring to the event site—two (2) pencils (sharpened standard #2/HB grade with an eraser, or #2 mechanical with an eraser) for this competition.

- B. Each participant, with one (1) assistant (an instructor, fellow student, or adult chaperone), is allowed thirty (30) minutes to set up and test the equipment. At the end of the thirty (30)-minute set-up period, assistants are required to leave the area.
- C. Participants are given a design problem to solve in 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 a USB flash drive.
- G. One (1) additional hour is spent interviewing the participants and evaluating the entries from each participant's computer monitor.
- H. Participants report to the event area at the time and place stated by in the conference program to pick up their equipment.
- I. Semifinalists will be determined and posted by the CRC.
- J. Semifinalists will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- K. The LEAP interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Participants provide their own systems, including hardware (only one [1] CPU and one [1] monitor are allowed per student), software, one (1) USB flash drive, 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 capable of reading a USB flash drive.
- B. A table, chair, sketching paper, and electricity will be supplied for each participant. Students are required to provide their own pencils.



- 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 USB flash drives and the work they contain become the property of TSA, Inc., and will not be returned.
- G. Team members report to the event area at the time and place stated in the conference program to pick up their equipment.
- H. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Entries are evaluated on screen according to the criteria on the official rating form. The LEAP requirements will also be evaluated. Please refer to this form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Engineer
- 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)
- D. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables and chairs for competitors and evaluators
- C. 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 packet. 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 to begin, meet with 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 coordinator's report and assign them to work stations.
- E. Begin the event at the scheduled time. Collect LEAP Leadership Resumes. 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.
- F. Allow 30 minutes for participants and their assistants (no more than one [1] per participant) to set up equipment. At the end of the 30-minute 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 participant 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 USB flash drives.
- 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. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- O. Meet with semifinalists at the time and place stated in the conference program to allow them to sign up for a semifinalist LEAP interview time.
- P. Inspect the area in which the presentations are to take place. Ensure that there is a table and seating for participants and evaluators.
- Q. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
- R. Conduct LEAP interviews. Interviews should be a maximum of five (5) minutes in length.



- S. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- T. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- U. Breakdown of equipment is permitted only after the work of ALL participants has been evaluated.
- V. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- W. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

CAD, ENGINEERING

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

Completed LEAP Leadership Resume is present.

ENTRY NOT EVALUATED

Solution to problem (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.				
Design (X1)	The drawing as presented does not create an effective model for the problem assigned.	The layout and design of the drawing as presented are somewhat effective in modeling the problem assigned.	The layout and design of the drawing completely and effectively model the problem assigned.	
Functionality (X1)	The design as drawn lacks order of direction and is impractical.	The design is somewhat practical in directional flow and overall organization.	The design is completely effective, practical, and functional.	
Originality (X1)	The design drawing provides no quality of newness or deviation from tradition.	The design drawing shows some attempt to be creative and less non-traditional.	The design drawing provides a unique and creative quality of newness that departs from tradition.	
Aesthetics (X1)	The design is unappealing and fails to capture the observer's attention.	The design is somewhat pleasing and appealing and attempts to capture the observer's attention.	The design as drawn is pleasing and appealing and effectively draws attention to its appearance/beauty.	
SUBTOTAL (40 points)				

Layout (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Correct geometry (X2)	The correct views and orientation have not been selected or used throughout the drawing process and final layout.	Most of the views and orientation selected and used are correct and in the proper layout format.	All of the views and orientation that have been selected and used are correct and in the proper layout.	
Detailing (X1)	Many of the details are missing or placed incorrectly.	Most of the details are included and are correctly placed.	All necessary details are included and are placed correctly.	
Lettering (X1)	The choice of font style, size, color, and application is inappropriate for the drawing assignment.	The choice of font style, size, color, and application is appropriate, with few inconsistencies/variations.	The choice of appropriate font style, size, color, and application is clearly evident and applied consistently.	



Layout (continued) (60 points)			
Dimensioning (X1)	Many of the necessary dimensions are missing and/or placed incorrectly.	Most of the required dimensions are included and placed correctly.	All of the necessary dimensions are included and correctly placed.
Scale (X1)	The scale selected for the drawings is incorrect and not properly noted.	The scale for most aspects of the drawings is correct and properly noted.	The scale selected for all aspects of the drawings is correct and properly noted.
SUBTOTAL (60 points)			

Engineering Application (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Application of practices (X1)	Many, if not most, of the engineering practices selected and used are incorrectly applied.	Most of the engineering practices selected and used are correctly applied.	All of the engineering practices selected and used are correctly and appropriately applied.
Appropriate use of conventions (X1)	There is little or no evidence of appropriate application of engineering conventions in the completed design and drawings.	There is some evidence of effective application of engineering conventions in the completed design and drawings.	There is clear evidence of an effective and knowledgeable application of engineering conventions in the completed design and drawings.
SUBTOTAL (20 points)			

Software Utilization (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
CAD functions (X1)	There is little evidence of an understanding and application of CAD functions.	There is evidence of a general understanding and effective application of CAD functions.	A complete and effective understanding and application of CAD functions is evident.
CAD features (X1)	There is little evidence of understanding and application of CAD special features.	There appears to be a general understanding and application of CAD special features.	There is complete understanding and application of the various special features of CAD.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation H and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (160 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



COMPUTER INTEGRATED MANUFACTURING (CIM)

OVERVIEW

Participants design, fabricate, and use Computer Integrated Manufacturing (CIM) to create a promotional TSA product that will showcase the current conference city and/or state. The product may use additive and/or subtractive manufacturing of any traditional, Computer Numerical Control (CNC), 3D printing, or laser technology available. Documentation, one completed sample, and one set of manufactured parts are checked in and evaluated. Semifinalist teams assemble their entry and give a live promotional sales pitch to judges.

ELIGIBILITY

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

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Semifinalist teams will be allowed five (5) minutes to assemble their promotional product.
- C. A sales pitch about the product will occur immediately after the product is assembled.
- D. The sales pitch may last up to two (2) minutes, during which time each team member will demonstrate the product. Exceeding the two (2)-minute time limit results in a deduction of five (5) points for every fifteen (15) seconds over the limit.
- E. The LEAP interview will be conducted as part of the semifinalist demonstration and will last a maximum of five (5) additional minutes.
- F. Pick-up occurs during the time and place stated in the conference program, or as designated by the event coordinator.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond

to interview questions related to their submitted LEAP Resume for a maximum of (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their documentation, product, manufactured pieces of their entry, and a LEAP Leadership Resume for evaluation during check-in at the time and place stated in the conference program.
- B. Entries are evaluated and semifinalist teams are determined.
- C. Semifinalist teams report to the assembly session at the time and place stated in the conference program.
- D. Participants are required to provide their own tool box (with identification [school name, address, and advisor cell phone number]), which should not exceed 20 inches (508 mm) length x 10 inches (254 mm) width x 10 inches (254 mm) height. The box must contain all items needed to fabricate the solution/entry. The following is a suggested list:
 1. Cutting devices; NONE may be electric
 2. Adhesives
 - a. aerosol and electric applicators are not allowed
 - b. a bottle of Uncure or Debonder is recommended
 3. Temporary fastening devices
 - a. straight pins
 - b. clamps
 - c. tape
 4. A cutting surface that prevents table top marring (required)
 5. Rulers, straightedges, and/or measuring scales
 6. Abrasives sheets, sponges, boards
 7. Marking devices (pens, pencils, etc.) and sharpener
 8. Sheet of wax paper, as large as is needed for the competition
 9. Pliers, wrenches, nut drivers, as needed
 10. Safety glasses and side shields (required)
- E. Participants are required to provide and wear safety-approved eyewear for this event. Prescription eyewear will need to have side shields to be considered safety eyewear. Should a team member remove his/her eyewear, he/she 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.

- F. Using their tool kit, teams will assemble their promotional product from the manufactured parts that have been evaluated by the judges.
- G. Upon completion of the assembly, each team's promotional product will be submitted for evaluation.
- H. Following the evaluation, each team will make a sales pitch about their product to "potential buyers" (judges and the audience) in the room. The sales pitch should include information such as cost per unit, production time, materials used, etc.
- I. The sales pitch will begin on the timekeeper's signal. The time limit for the sales pitch is two (2) minutes.
- J. No electronic devices may be used in the sales pitch. A flyer or brochure may be given to judges as part of the sales pitch; the brochure size is limited to one double-sided page on 8 ½" x 11" paper.
- K. The assembled product must be accurate and within tolerances of + or - .001 of the dimensions provided in the documentation drawings and in the fabricated parts.
- L. The LEAP interview will be conducted as part of the semifinalist demonstration (sales pitch) and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. Documentation materials (comprising "a portfolio") are required and should be secured in a clear front report cover. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; one (1) page
 3. A working drawing of the parts manufactured; the parts must be clearly labeled and include dimensions, with an identifying leader and a label, as shown in a parts list. A bill of materials also must be included on the working drawing.

The paper size is 11" x 17", folded, with the drawing facing out and placed in the portfolio; one(1) page

4. An isometric assembly drawing showing the promotional product and all its parts; the paper size is 11" x 17", folded, with the drawing facing out and placed in the portfolio; one(1) page
5. Detail drawings of each part manufactured should be labeled to match the items in the parts list (from the working drawing). The paper size is 8 1/2" x 11"; pages as needed (to show all machined parts)
6. Photographic images (actual photographs, not renderings) of designs tested, with a three (3)-sentence descriptive caption per image of what was improved or proved by the testing of the design; two (2) pages maximum
7. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); pages as needed
8. Proof (receipts) that the material cost for fabricated parts is no more than \$5

B. Materials

1. The sample work pieces will contain the subtractive and/or additive (CNC/3D printing) machined parts of the promotional product. The major and minor parts of the entry must fit into an 11" x 17" x 3" frame, with no stacking of parts. Parts may not be connected. One set of parts is turned in for evaluation; these will be the parts used for the assembly.
2. Fabricated parts
 - a. The finished product must not exceed the dimensions 20" x 10" x 10".
 - b. A minimum of four (4) and a maximum of six (6) major parts; major parts are those with drawings that have been manufactured.
 - c. Plastic, wood, or metal may be used for any of the parts for the promotional product.
 - d. Machined parts submitted for judging must be removed from the waste stock.
 - e. Parts may be finished (i.e., painted or sanded), if necessary.
 - f. One (1) part must be subtractive manufactured and one (1) part must be additive manufactured.
3. Stock fasteners may be used, provided they can be installed with the tools in the tool box; they may include, but are not limited to:
 - a. Nuts
 - b. Washers



- c. Screws
 - d. Wing nuts
 - e. Other fasteners that can be attached with the tools in the tool box
- C. Assembly session (semifinalists only)
1. Teams will check in at the time and place stated in the conference program.
 2. Each team will bring a tool kit.
 3. Teams will pick up their documentation and the unassembled work pieces.
 4. Teams will have up to five (5) minutes to assemble their product.
 5. The finished product must include the TSA logo or official TSA lettering.
 6. Upon completion of the assembly of the promotional product, or after five (5) minutes, whichever comes first, teams will submit their entry to the judges for evaluation.
 7. Following the evaluation, teams will demonstrate their entry and give a two (2)-minute sales pitch to the judges.
- D. Sales pitch session
1. Team members will present a two (2)-minute sales pitch about their promotional product.
 2. A promotional brochure or flyer may be given to the judges (one 8 1/2" x 11" sheet of paper printed on both sides).
 3. The team will explain the production cost per unit, the materials to be used to make the product, and price breaks of units based on purchase.
 4. The team must pitch the product as one to be used as a gift for volunteers at a TSA event.
 5. Exceeding the two (2)-minute limit results in a deduction of five (5) points for every fifteen (15) seconds over the limit.
- E. Failure to meet the guidelines
1. A 20% deduction of the total possible points will be made for failure to meet one (1) qualification.
 2. If an entry fails to meet two (2) qualification regulations, it will be removed from competition.
 3. The coordinator may stop a demonstration if a safety issue becomes evident.
- F. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume, the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the documentation, the component analysis, the LEAP requirements, and the sales pitch/demonstration (semifinalists only). Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

Commercial and industrial designer
Engineer
Mechanical engineer
CNC programmer or operator

COMPUTER INTEGRATED MANUFACTURING (CIM)

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants at check-in, two (2) or more
- C. Evaluators, two (2) or more
- D. Timekeeper, one (1)
- E. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing
 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 2. TSA Event Coordinator Report
 3. List of evaluators/assistants
 4. Pre-populated flash drives for evaluators
 5. Stick-on labels for entries, as needed
 6. Results envelope
 7. Stopwatch
 8. Envelope for LEAP Leadership Resumes
 9. LEAP Interview Judging Protocol
- B. Tables and chairs for check-in assistants, the timer, evaluators, and the event coordinator
- C. Tables for teams to assemble their entry; chairs for each team member

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluators/ assistants have been scheduled.
- B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chair and table set-up, electrical outlets, etc. Notify the event manager of any concerns.
- C. One (1) hour before the event is scheduled to begin, meet with evaluators/assistants to review procedures, time limits, and regulations. If questions arise, check with the event manager for clarification.



- D. Check in the entries and collect LEAP Leadership Resumes at the time and place stated in the conference program. Any participant who is not on the coordinator's report must report to the event manager for verification of entry.
- E. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- F. Evaluators determine twenty (20) semifinalists.
- G. Submit semifinalist results to the CRC for posting.
- H. Inspect the area in which the semifinalist teams will meet to assemble their promotional product.
- I. Meet with the semifinalist evaluators to review time limits, procedures, and regulations.
- J. Allow five (5) minutes for the teams to assemble their product.
- K. Conduct the sales pitch demonstration sessions. The LEAP interview will be conducted as part of the semifinalist demonstration and will last a maximum of five (5) additional minutes.
- L. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.

Participant/Team ID# _____

COMPUTER INTEGRATED MANUFACTURING (CIM)

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Sample product is present.
- Manufactured parts are present.
- Documentation is present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio components See Regulation A (X1)	The portfolio is unorganized and three or more components or sections are missing.	The portfolio is generally well organized and may be missing only one or two components or sections.	The portfolio is exceptionally well organized and contains all required components or sections.
Work piece layout drawing (X2)	The work piece layout drawing is poorly executed, with key elements missing.	The work piece layout drawing is included but missing some elements.	The work piece layout drawing is complete and correctly executed, with all elements included.
Isometric assembly drawing (X1)	The isometric assembly drawing is not complete, with many of the required elements missing.	The isometric assembly drawing is present, but it is missing several required key elements.	The isometric assembly drawing is complete and correct, with all required elements included.
Detail drawings (X1)	The detail drawings are not complete, with many of the required elements missing.	The detail drawings are present but may be missing several required key elements.	The detail drawings are complete and correct, with all required elements included.
Design photographs (X1)	Only one photograph of designs tested is included.	Two photographs of designs tested are included.	More than two photographs of designs tested are included.
Descriptions/analysis (X2)	There is little description of the design testing process and analysis.	One description of design testing and analysis is included.	Several descriptions of design testing and analysis are included.
Plan of Work log (X1)	The Plan of Work log is not complete.	The Plan of Work log is included and mostly complete.	The Plan of Work log is complete and fully documents project work.
Theme (X1)	The effort is basic, with only a loose association to the product theme.	The effort adequately addresses the product theme.	The effort to address the product theme exceeds expectations.
SUBTOTAL (100 points)			

Record scores in the column spaces below.



Component Analysis (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Additive manufacturing piece (X1)	The overall dimensions are .25(1/4) inches greater or less than the size specified on the layout drawing.	The overall dimensions are .125(1/8) inches greater or less than the size specified on the layout drawing.	The overall dimensions are the correct size, as specified on the layout drawing.
Subtractive manufacturing piece (X1)	The overall dimensions are .25(1/4) inches greater or less than the size specified on the layout drawing.	The overall dimensions are .125(1/8) inches greater or less than the size specified on the layout drawing.	The overall dimensions are the correct size, as specified on the layout drawing.
Additive/subtractive manufacturing piece (X1)	The overall dimensions are .25(1/4) inches greater or less than the size specified on the layout drawing.	The overall dimensions are .125(1/8) inches greater or less than the size specified on the layout drawing.	The overall dimensions are the correct size, as specified on the layout drawing.
Product cost sheet (X1)	The product cost sheet has few parts of the finished product broken down individually; the cost is more than \$5 per product.	The product cost sheet has most parts of the finished product broken down individually; the cost is \$5 or less per product.	The product cost sheet has each part of the finished product broken down individually with material amount and the amount used; the cost is \$5 or less per product.

SUBTOTAL (40 points)

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

Indicate the rule violated: _____

Semifinalist Qualification Regulations

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

REGULATION	NONCOMPLIANT	COMPLIANT
Team of two	Only one team member is present.	Both team members are present.
Safety eyewear	Warnings about eyewear are issued.	No warnings about eyewear are issued.
Tools and fabrication supplies	Inappropriate tools or supplies are brought to the event.	Appropriate tools and supplies are brought to the event.

Semifinalist Assembly and Sales Pitch/Demonstration (80 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Tolerance (X1)	The tolerance of the newly assembled product is within + or - of .250 (1/4) inch of the drawing and the original prototype.	The tolerance of the newly assembled product is within + or - of .125 (1/8) inch of the drawing and the original prototype.	The tolerance of the newly assembled product is within + or - of .001 inch of the drawing and the original prototype.
Organization (X1)	Participants seem unorganized and unprepared for the sales pitch/demonstration; illogical explanation of the project is presented.	Participants are generally prepared for the sales pitch/demonstration; explanation of the project is communicated and generally organized.	The sales pitch/demonstration is logical, well organized, and easy to follow; the project concept is communicated in a concise manner.

Semifinalist Assembly and Sales Pitch/Demonstration (continued) (80 points)			
Knowledge (X1)	Participants seem to have little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit an understanding of the concepts in their project.	Participants show clear evidence of a thorough understanding of the concepts in their project.
Articulation (X1)	The sales pitch is full of illogical thoughts that lack clarity.	The sales pitch is somewhat logical and easy-to-understand and follow.	The sales pitch provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The sales pitch is full of illogical thoughts that lack clarity, and/or there is insufficient information provided describing the project.	The sales pitch is somewhat logical, easy-to-follow, and/or there is sufficient information provided describing the project.	The sales pitch is clear, concise, and there is ample information provided describing the project.
Team participation (X1)	The majority of the delivery is made by one member of the team; the partner may be disengaged from the sales pitch.	Team members generally are engaged in the process, though one member may take on more responsibility than the other.	Team members are actively involved in the sales pitch and responses to interview questions; there is shared responsibility on the part of team members.
LEAP Leadership Resume/Interview See Regulation F and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (80 POINTS)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (220 points)

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

The skill of debating is essential 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.

In this event, team members 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 a selected subtopic.

The theme (and subtopics) for this event will be posted on the national TSA website under Competitions/Themes and Problems.

ELIGIBILITY

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

Teams must be prepared to debate both sides of an issue.

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. Five (5) points will be deducted for speaking any amount of time over the allotted time.
- C. The LEAP interview will be conducted immediately following each semifinalist debate round and will last a maximum of five (5) additional minutes (per team).
- D. All research and preparation must be started and completed during the current school year.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at a designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants research all subtopics and should be prepared to debate any of the subtopics from both Pro and Con views. All participants will be assigned the same subtopic. A new subtopic may be assigned for the semifinals, and all participants will debate that new subtopic.
- B. Pre-debate meeting: Participants report to the event area at the time and place stated in the conference program to receive an assigned debate time, a 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. Students should be reminded in this meeting that they may not state their individual or school name in the presence of judges.
- C. Teams must submit a LEAP Leadership Resume at the pre-debate meeting in order to compete.
- D. Each team reports to the preparation room fifteen (15) minutes before the scheduled debate time.
- E. One (1) minute before teams are instructed to report to the presentation room, each team will be informed of the view (Pro or Con) of the issue it will present to the judges.
- F. Once the teams are informed of the view they are to take, they will be escorted to the debate room.
- G. Order of debate format:
 1. Pro speaker, maximum of three (3) minutes
 2. Con speaker, maximum of three (3) minutes
 3. Conference break, two (2) minutes
 4. Pro rebuttal, maximum of three (3) minutes
 5. Con rebuttal, maximum of three (3) minutes



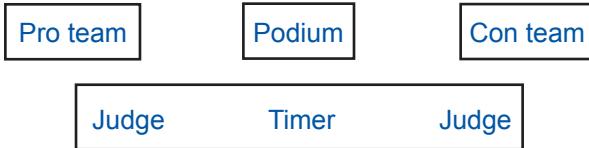
- H. The escort will introduce the Pro team by ID number and the team will be instructed to sit to the left side of the podium. The first speaker should sit next to the podium. At this time, participants will present their schedule card and reference summary to the judges.
- I. The Con team will be introduced 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 to the judges.
- J. 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 two (2) minutes and forty-five (45) seconds, the timer will hold up a 4" x 6" card that reads "15 seconds." Penalty points will be deducted if a speaker exceeds the allotted time.
- K. When the Pro speaker is finished and has been seated, the Con speaker will move to the podium and begin, according to the same procedure noted above.
- L. When the Con speaker is finished and has been seated, the timer will announce a two (2)-minute conference period in which both teams may prepare their rebuttal.
- M. 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 two (2) minutes and forty-five (45) seconds, the timer will hold up a 4" x 6" card that reads "15 seconds." Penalty points will be deducted if a speaker exceeds the allotted time.
- N. When the Con rebuttal speaker (as in Procedure L above for the Pro rebuttal speaker) is finished and has been seated, the timer will announce to both teams that they may leave the debate room.
- O. Participants must provide a reference summary to the judges. This summary is a one (1)-page list of resource materials used to research the debate subtopics. The summary must be a word-processed document that can be printed on both sides of a sheet of paper. MLA format must be used in citing resources. A copy of the reference summary must be turned in to the judges each time a team competes or a rules violation deduction will be incurred.
- P. If there is an odd number of teams entered in the event, one team will debate twice, based on a random drawing. If a team

debates twice, that team must again provide the judges with a page that lists the resource materials used. The team that debates twice may or may not have to debate both sides of the issue. If the team does debate twice, both heats will be scored and the highest score will be used for placement.

- Q. If a preliminary heat is used, twelve (12) semifinalists will be posted in random order.
- R. 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.
- S. Each team reports to the preparation room at its assigned time. The semifinalist LEAP interview will take place immediately following each semifinalist debate round and will last a maximum of five (5) additional minutes per team.
- T. Procedures D – O will be followed to determine the ten (10) finalists.

U.

Room set-up:



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

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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"x5" notecards.
- C. Notes may be taken during the debate.



- D. A three (3)-ring binder of reference materials, as noted on the summary provided to the judges, may be used during the debate.
- E. No audio-visual materials of any type may be used.
- F. Participants are not allowed to hear the debates of other teams.
- G. No observers or assistants are allowed in the preparation room.
- H. No observers are allowed to view the preliminary heats.
- I. Observers are allowed in the debate room during the semifinalist debates. No audio or visual recording devices are allowed. No talking or gesturing is permitted. Observers are not allowed to enter or leave during a debate. There is no applause until the debate is completed.
- J. Teams are penalized five (5) points for speaking any amount of time over the allotted time.
- K. Each team is required to submit a summary of references (used to prepare for the event) on an 8½" x 11" sheet of paper; both sides of the paper may be used. The event title, the event topic, and a line for the entry number must be printed at the top of the front side of the paper. The reference summary must be word-processed (handwritten is not acceptable). MLA format must be used to cite sources. References for subtopics are to 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 result in a rules violation deduction.
- L. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume, the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/ Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation will be based on a team's knowledge of a selected subtopic, the team's communication ability (i.e., the use of debate and presentation skills), and the LEAP requirements. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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; timekeepers may serve as judges
- C. Escorts for moving teams from preparation room to debate room, one (1) per heat room; escorts may **not** serve as judges
- D. Evaluators for semifinalist round of debates, two (2) or more and one (1) timekeeper/announcer; these evaluators should **not** judge the preliminary round of debates
- E. One (1) escort for the semifinal round of debates

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Signs that read "DEBATE in PROGRESS" for all rooms, as needed
 - 6. One (1) stopwatch for each debate room
 - 7. A 4" x 6" card with the message "15 seconds" written on the card, one (1) card for each debate room
 - 8. Two (2) 3" x 5" cards with "Pro" written on the card; two (2) 3" x 5" cards with "Con" written on the card; and one (1) 3" x 5" card with "2 minutes" written on it for each debate room
 - 9. Copies of schedule cards
 - 10. Results envelope
 - 11. Envelope for LEAP Leadership Resumes
 - 12. LEAP Interview Judging Protocol
- B. Podium for each debate room
- C. One (1) table and two (2) chairs for the Pro side and one (1) table and two (2) chairs for the Con side for each debate room

- D. One (1) table and three (3) chairs for evaluators and timekeeper/announcer for each debate room; one (1) chair in the back of the room for the escort
- E. Chairs for observers during the semifinalist debate round
- 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 packet. Review the event guidelines and check to see that enough evaluatorsassistants have been scheduled.
- B. Inspect the areas(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. Develop a heat schedule, taking into consideration the number of preparation and debate rooms, the number of entries, and the time allotted for the event. Twenty (20) minutes should be allowed for each debate.
- D. Develop a semifinalist schedule, taking into account the number of semifinalists and the time allotted for the event. Twenty (20) minutes should be allowed for each semifinalist debate. Include an additional ten (10) minutes per round to allow for each team to participate (individually) in the semifinalist LEAP interview immediately following their semifinalist debate (maximum of five [5] minutes per team).
- E. From the list of subtopics, choose one subtopic that will be used for each round. One subtopic may be chosen for the preliminary heats and a different subtopic for the semifinalist round. The subtopic chosen must apply for all teams.
- F. Gather with the participants at the scheduled time and place noted in the conference program for a pre-event meeting. At this meeting, take attendance, collect LEAP Leadership Resumes, review rules and procedures, provide directions and information, and announce the selected subtopic that all participants will present on in the first round. Teams who do not submit the required team LEAP resume are not permitted to compete. Only one (1) team member needs to attend this meeting. Failure of a team representative to attend this meeting will result in disqualification. The coordinator may:
 1. allow participants to select a 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 evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- 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 debate room are available, have one (1) team draw one (1) or two (2) schedule cards (one [1] card will have Pro written on it and the other card will have Con written on it). The view a team selects will apply for the entire event. Each team, with the coordinator's assistance, will complete the remaining information on the card. This card, along with a team's reference summary, will be given to the judges once a team has entered the debate room.
- K. Record the view each team is presenting on the scheduling sheet.
- L. Have the escort take the teams to the debate 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 debate room until the end of the debate, when s/he will escort each team from the room. This process of escorting teams into and then out of the debate room for competition will take place until all teams have participated.
- O. If there is an odd number of teams entered in this event (see Procedure O), teams will be randomly selected to determine the team that 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 debate will start when the speaker begins; however, if there are any unreasonable delays, the speaker will be warned by the timer and timing will begin.
- R. Timing of the conference break will start once the Con speaker has completed the presentation. The timekeeper will inform the

teams that they are in the conference break and will also inform the teams when the period is over.

- S. Once the conference break is over, the Pro rebuttal speaker will approach the podium and begin, followed by the Con rebuttal speaker.
- T. When the Con rebuttal speaker is finished, s/he should return to his/her seat. The timekeeper will collect the summary of references from both teams. When the evaluators are ready, the timekeeper will announce to the teams that they are to leave the room and they will be escorted out by the escort.
- U. The evaluators will inform the escort when they are ready for a new set of teams so that the escort may return to the preparation room.
- V. Following the last team's presentation, the evaluators will complete the scoring, making adjustments for time penalties.
- W. Following the preliminary heats, evaluators determine twelve (12) semifinalist teams and submit the results to the CRC for posting.
- X. At the time and place stated in the conference program, meet with semifinalists to review scheduling and procedures.
- Y. Follow procedures as above for the semifinalist round of debates. The semifinalist LEAP interviews will take place immediately following each semifinalist debate and will last a maximum of five (5) minutes per team.
- Z. All communication related to evaluators and participants during the debate should be handled by the timekeeper.
- AA. Evaluators determine the ranking of the ten (10) finalists, and discuss and break any ties.
- AB. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- AC. If necessary, manage security and the removal of materials from the event area.



DEBATING TECHNOLOGICAL ISSUES

SCHEDULE CARD

Assigned view: Pro

Entry number _____

Debate time _____

Heat number and room _____

Comments:

DEBATING TECHNOLOGICAL ISSUES

SCHEDULE CARD

Assigned view: Con

Entry number _____

Debate time _____

Heat number and room _____

Comments:

Participant/Team ID# _____

DEBATING TECHNOLOGICAL ISSUES

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Debate (90 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Points of argument (X1)	Team does not get the attention of the audience, and/or does not outline points clearly.	Team makes an effort to grab the attention of the audience; previewing points are somewhat organized in a logical manner.	Introduction uses an attention getter, clearly states the thesis, and previews main points of the argument; the team is cognizant of the audience.
Organization (X1)	The main idea may not be focused or developed; the introduction is undeveloped; transitions may be needed.	The main idea is adequately presented, but the organizational structure may need to be strengthened; ideas are generally developed and flow smoothly.	The main idea is clearly presented, well-developed, and firmly supported.
Topic knowledge (X2)	The team does not have a grasp of the information; inaccurate, generalized, or inappropriate supporting material is used; there is an over-dependence on notes.	The team has a partial grasp of the information; supporting material is adequate and the team is at ease.	The team has a clear grasp of information; citations are introduced and attributed accurately; the team demonstrates full knowledge, with explanations and elaboration, of the subject area.
Delivery (X2)	Delivery detracts from the message; eye contact may be very limited; presenter may tend to look at the floor, mumble, speak inaudibly, fidget, or read from notecards; gestures and movements may be jerky or excessive.	Delivery generally seems effective, however, use of volume, eye contact, vocal control, etc., may not be consistent; some hesitancy may be observed; vocal tone, facial expressions, and/or other nonverbal expressions do not detract from the message.	Delivery is extemporaneous, natural, confident, and enhances the message; posture, eye contact, smooth gestures, facial expressions, volume, pace, etc., indicate confidence, a commitment to the topic, and a willingness to communicate.
Rebuttal (X1)	Rebuttal is unorganized, unclear, and/or incoherent; rebuttal includes no counter to points made from the opposing team.	Rebuttal is somewhat organized, and it creates a mostly logical counter to the opposing team's points.	Rebuttal is logical, concise, and creative; counter arguments from the opposing team are incorporated in the rebuttal in a unique and interesting way.
Voice and language (X1)	Language choices may be limited, peppered with slang or jargon, too complex, or too dull; language is questionable or inappropriate for the audience.	Language used is mostly appropriate, respectful, or inoffensive; word choices are adequate.	Language is familiar to the audience, appropriate for the setting, and free of bias; word choices are vivid and precise.

Record scores in the column spaces below.



Debate (continued) (90 points)			
Group member participation (X1)	One team member does the majority of the speaking and/or debating on the topic; the other student seems disengaged.	Both team members are engaged in the debate, but one student takes the lead while the other student only replies or refutes statements.	Both team members are actively involved in the debate and rebuttals of the topic, sharing responsibility throughout.
SUBTOTAL (90 points)			

Time violation (a deduction of five [5] points total will be incurred for exceeding the debate time limit). Record the deduction in the space to the right.

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation L and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.) TOTAL (110 points)

Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____	Signature: _____

There is no denying the widespread influence of film in modern society. With this event participants can demonstrate mastery of this powerful tool.

Note: The video production may be animated.

It is strongly suggested that participants demonstrate both an understanding of video editing of live shots as well as an understanding of animation.

OVERVIEW

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

Participants develop a public service announcement and a digital video (with sound) that focuses on the given year's theme, which will be posted on the TSA website under Competitions/Themes and Problems.

ELIGIBILITY

Participants are limited to three (3) teams per state; an individual may participate solo in this team event.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. The public service announcement should not exceed thirty (30) seconds in length. If it is over thirty (30) seconds, a rules violation will be assessed.
- C. The video should not exceed three (3) minutes in length. If it is over three (3) minutes, a time violation of five (5) points will be assessed. Time starts with the first image or sound and continues until the last sound or image ends.
- D. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an



individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries and submit a LEAP Leadership Resume 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. Semifinalists will be determined and posted by the CRC.
- D. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- E. The LEAP interview will last a maximum of five (5) minutes.
- F. Ten (10) finalists are announced at the awards ceremony.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

Read the General Rules and Regulations section 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.

REGULATIONS

- A. Videos must be submitted on a DVD, playable from a stand-alone DVD player.
- B. The public service announcement should not exceed thirty (30) seconds in length. If it exceeds thirty (30) seconds, a rules violation will be assessed.
- C. The video should not exceed three (3) minutes in length. If it exceeds three (3) minutes, a time violation will be assessed.
- D. All entries become the property of TSA, Inc. and will not be returned after judging.
- E. Entries may be an individual or team project.
- F. All video footage must be the original work of the team and must have been completed within the current school year.

- G. All ideas, text, images, and sound from other sources must be properly cited. If copyrighted material is used, proper written permission must be included. NOTE: The video production product will not be judged if copyright procedures are not followed.
- H. The DVD and documentation are turned in to the event coordinator. Documentation materials (comprising "a portfolio") are required and should be placed and secured in a **clear front report cover**. The report cover must include the following single-sided, 8 1/2" x 11" pages, in this order:
 1. Title page with the event title, the title of the video, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Purpose and description of the video; one (1) page
 4. Team's self-evaluation of the video, using criteria from the official rating form; one (1) page
 5. Hand sketched storyboard; pages as needed
 6. Public service announcement script; pages as needed
 7. Digital video script; pages as needed
 8. List of hardware and software used in the development of the video; one (1) page
 9. List of references that includes sources for materials (copyrighted and non-copyrighted); pages as needed
 10. Permission letters for copyrighted material (including clips and images); pages as needed
 11. Completed and signed Student Copyright Checklist (see Forms Appendix or TSA website)
 12. Signed consent forms for all video participants
 13. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website)); one (1) page
 14. The DVD should be submitted in a DVD sheet protector and secured in the clear front report cover.
- I. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.



EVALUATION

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

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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



DIGITAL VIDEO PRODUCTION EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Semifinalist evaluators, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. One (1) stopwatch per team of evaluators
 - 6. Stick-on labels for entries, as needed
 - 7. Results envelope
 - 8. Envelope for LEAP Leadership Resumes
 - 9. LEAP Interview Judging Protocol
- B. Tables and chairs for evaluators
- C. Stand-alone DVD players or computers capable of reading a DVD, as needed
- D. Extension cords (25' minimum length), as needed
- E. Power bars with surge protection, as needed

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 identification number on each DVD and portfolio. Secure the entries in the designated area.
- E. One (1) hour before the event is scheduled to begin, meet with evaluatorsassistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- F. Evaluators independently assess the entries.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. Each group of evaluators determines the top five (5) entries from that group. (The number of evaluator groups depends on the number of entries. Typically, there are two [2] evaluators for every twenty [20] entries.) The top five (5) entries from each group are forwarded to the event coordinator.
- I. The coordinator notes the semifinalists (there may be more than twelve [12]) for further evaluation and LEAP interviews.
- J. Inspect the area in which the semifinalist LEAP interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
- K. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
- L. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.
- M. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- N. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- O. Return all DVDs, DVD players, computers, portfolios, extension cords, and supplies to the CRC room.



Participant/Team ID# _____

DIGITAL VIDEO PRODUCTION

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Video is readable/playable on judge's device.
- Documentation is present.
- Student Copyright Checklist and release forms are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Preproduction Documentation (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation H (X1)	The portfolio is completely unorganized and/or is missing three or more components.	The portfolio is missing two components and/or is loosely organized.	The portfolio is clearly organized and has either one or no missing components.
Purpose and description (X1)	The purpose and description of the video are unclear and hard to visualize.	The purpose and description of the video are clear, and they are generally concisely written.	The documentation provides a clear and concisely written purpose and description that interests the reader.
Storyboard (X1)	The hand-sketched storyboard and script are sloppy, appear to be thrown together as an after-thought, and/or do not correlate with the video.	The storyboard and script are drawn appropriately and generally correlate with the completed video.	The storyboard and script are of exceptional aesthetic and artistic quality, and they clearly correlate with the video.

SUBTOTAL (30 points)

Record scores in the column spaces below.

Video Production (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Video (X1)	The video shots have obvious problems with focus, steadiness, and framing.	The video shots are clearly focused and framed, but there is limited use of close-ups.	The video is enhanced by steady, creative shots; and it incorporates excellent use of close-ups.
Audio (X1)	The audio quality is poor, a result of primary use of the on-camera microphone for recording.	The audio is clear, with good levels, and reflects the correct use of microphones and audio techniques.	The audio quality is excellent, with use of additional audio clips/cues that enhance the video production.
Lighting (X1)	The video reflects poor ambient lighting choices and/or the use of heavy back-lighting.	The video reflects adequate lighting on subjects and the proper use of lighting techniques.	The video reflects an excellent and creative use of lighting, which propels the story emotionally.

Video Production (70 points) (continued)			
Continuity and pacing (X1)	The sequencing is confusing or incomprehensible; shots are left on too long, and edit points/transitions are "glitchy."	The pace and timing are well structured; the shots move along, helping to tell the story, and there is moderate use of transitions.	The shots are logically paced and move the story along in an interesting way, with excellent and purposeful use of transitions.
Creativity and originality (X1)	There is little original thought or creativity in the design and production, resulting in what appears to be a simple piecing of events together.	The video reflects original thought and creative elements that are effectively expressed and highlighted.	Originality and creativity are at the forefront of the video, with thematic elements incorporated in a highly authentic way.
Video effectiveness (X2)	The work does not meet the project goals, has an unclear message, and reflects sloppy work.	The topic is presented with some insight, and the video meets most project goals.	The video is focused, with a clear message and a rich variety of supporting material.
SUBTOTAL (70 points)			

Time violation (a deduction of five (5) points total will be incurred for exceeding the three (3)-minute limit for the length of the video). Record the deduction in the space to the right.

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation I and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (120 points)

Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
Evaluator	
Printed name: _____	Signature: _____



DRASTER DESIGN

OVERVIEW

Participants design, produce a working drawing for, and build a CO₂-powered dragster according to stated specifications and using only certain materials.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one (1) entry per individual.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Each dragster, drawing, and LEAP Leadership Resume must be submitted at the time and place stated in the conference program.
- C. The top sixteen (16)-qualifying dragster builders will participate in a five (5)-minute car builder interview and a LEAP interview, which will last a maximum of five (5) additional minutes.
- D. Drawings and dragsters must be picked up at the specified time upon the conclusion of the event.

Participants must review the specifications each year, as this event is modified with each new edition.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries and collect LEAP Leadership Resumes 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 entries, 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. The top sixteen (16) dragster builders will report to the track at the posted time for a five (5)-minute interview immediately followed by the LEAP interview (maximum of five [5] additional minutes).
- G. The top sixteen (16) entries race in a double-elimination format to earn points for the race portion of the event.
- H. Drawing, design, and body finish points are combined with race points to determine the final standings.

 Read the regulations closely as there are significant changes from year to year.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Participants must check the national TSA website for the 2017 and 2018 specific design challenges.
- B. Each entry must be submitted at check-in with a full-size metric drawing of the completed vehicle. The two (2)-view (top and side) drawing with metric dimensions is made on drawing paper no larger than 11" x 17" in size. 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,"



which is assigned at registration time and is placed on the entry and drawing during check-in.

- C. The official distance between the start line and the finish line on the race track is twenty (20) meters.

Dragsters that do not meet the below specifications/tolerances are disqualified from the race.

Dragster body

1. One (1)-piece, all-wood construction; any type of lamination results in disqualification. No add-ons such as body strengtheners, fenders, plastic canopy, exhausts, or air foils may be attached to or enclosed within the vehicle. Fiberglass and shrink wrap are considered body strengtheners and cannot be used on the car body for any reason. Decals may be used for decoration only; they may not be used to gain an aerodynamic advantage, i.e., decals cannot cover the exterior axle holes or be used to cover open areas of the body. Two (2) or more like or unlike pieces of wood glued together are not considered one (1)-piece, all-wood construction.

	MINIMUM	MAXIMUM
2. Body length.....(2017) 240mm.....	250mm	
.....(2018) 235mm.....	245mm	
3. Body height with wheels	75mm	
4. Body mass (completed car without CO2).....(2017) 35g.....	N/A	
.....(2018) 50g.....	N/A	
5. Body width at the axles, front and back..... 35mm.....	42mm	
6. Vehicle total width (including wheels)	90mm	

Axles/axle holes/wheelbase

1. Dragsters must have two (2) axles per car, no more.
2. Bottom of axle hole or bearing above bottom of car body.
(NOTE: This will be measured at the sides of the wood car body, from the bottom of the car directly beneath the axle to the bottom of the axle hole or bearing hole.)
..... 5mm 10mm
3. Axle hole from front and rear of car 9mm 100mm
4. Wheelbase (axle distance apart at farthest points) 105mm 270mm
5. Bearings, bushings and lubricants may be used.
6. Glue may be used to secure bearings to body.

Spacer washers/clips

1. Spacer washers.....8
2. Axle clips8
3. Silicone or any other type of glue/adhesive may not be used in place of wheel clips to hold wheels or axles in place.

Power plant (CO2 cartridge hole)

1. The power plant hole must be at the farthest point at the rear of the car and must be drilled parallel to the racing surface to assure proper puncture of the CO2 cartridge. A minimum of 3mm thickness around the entire power plant hole must be maintained on the dragster for safety. The inside of the power plant hole must not be intentionally painted.

	MINIMUM	MAXIMUM
2. Hole depth	45mm	55mm
3. Safety zone thickness.....	3mm	
4. Chamber diameter.....	19mm	20mm
5. Lowest point of chamber diameter to race surface (with wheels).....	26mm	40mm

Screw eyes

1. Dragsters must have two (2) screw eyes (no more) per car that meet tolerances. 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 screw eye holes are tightly closed to prevent the track string from slipping out. As with all adjustments, this must be done prior to event check-in.
2. Inside diameter3mm.....5mm
3. Distance apart (at farthest points).....150mm.....270mm

Wheels

1. A dragster must have four (4) wheels, no more. Two (2) wheels must meet the requirements in #2 and #3 below. The other two (2) wheels must meet the requirements in #4 and #5 below. 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 each wheel.

MINIMUM.....MAXIMUM

2. Front diameter	30mm.....	37mm
3. Front width (at surface contact point)	1.5mm.....	5mm
4. Rear diameter.....	30mm.....	40mm
5. Rear width (at surface contact point).....	12mm.....	18mm

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 conference personnel, the event coordinator rules as to whether or not 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.
F. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on points earned through car design and appearance, accuracy, quality of the drawing, and points earned from the top 16 interviews and placement in the double elimination on-site race. The LEAP requirements will also be evaluated. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Automotive designer
- Automotive modeler
- Industrial designer
- Industrial engineer
- Race car engineer



DRAGSTER DESIGN EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Recorder for double elimination chart, (one) 1
- D. Assistants, two (2)

MATERIALS

- A. Coordinator's packet and box, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Time trial record sheet
 - 6. Qualifier interview time slot sheet
 - 7. Double elimination bracket chart
 - 8. Stick-on labels for entries, as needed
 - 9. Results envelope
 - 10. Envelope for LEAP Leadership Resumes
 - 11. LEAP Interview Judging Protocol
- B. CO2 cartridges
- C. Metric scientific scales (triple beam balance or digital)
- D. Mono-filament fishing line (suggested between 30 and 50 pound); four (4) pre-tied: two (2) on track and two (2) reserve, for the track
- E. Race track set, including a starting gate and a finish gate, with a digital timer and winning lane indicator
- F. Padding for the finish gate
- G. One (1) or more test cars
- H. Race brackets for placement of the semifinalists
- I. Tables for the display of cars and for evaluation

- J. Table at the starting line, for arranging and holding cars prior to the races
- K. Table at the finish gate for the placement of cars after the races and to hold eliminated cars
- L. Table for the official timekeeper
- M. 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.
- N. Provide for a display of time trial and race brackets.
- O. Ultraviolet ink and light to mark cars and check for cars that have been previously entered.

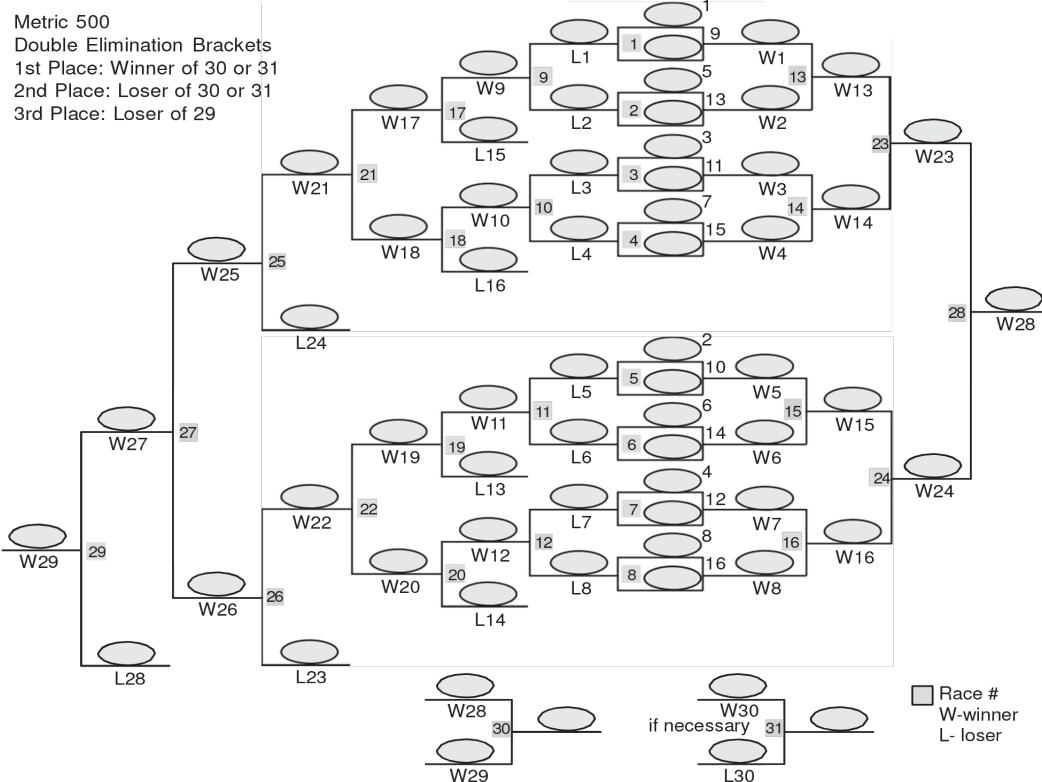
RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 a designated area.
- E. One (1) hour before the event is scheduled to begin, meet with 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 a preliminary review of cars. Participants do NOT have to be present at this time.
- G. All race-worthy cars will be tested in time trials. 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.
- H. The operator's preliminary times are recorded. Each vehicle is ranked according to fastest time first, second fastest time second, and so on. The fastest sixteen (16) cars that meet specifications will be run in the semifinalist race.
 - I. After testing all race-worthy cars in the time trial, evaluators verify that the top sixteen (16) cars from the time trials meet all specifications (design; drawing, and construction categories). 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.
 - J. Post the top sixteen (16) cars with interviews times; car builders will report to the track at the posted time for a five (5)-minute car builder interview and a LEAP interview, which will last a maximum of five (5) additional minutes.
 - K. Conduct interviews with the qualifying top sixteen (16) car builders.
 - L. Run the semifinalist race. A sample double-elimination bracket appears after this section.
 - M. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
 - N. Evaluators verify the finalists, including their rank order, and discuss and break any ties.
 - O. Review and submit the finalist results and all items/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





Participant/Team ID# _____

DRAGSTER DESIGN

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Vehicles meets specifications described in Regulations.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Dragster Construction (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Dragster body production quality (X1)	Dragster exhibits poor production quality, with a crude and rough surface and little or no attention to detail.	Dragster shows evidence of proper production techniques; it is adequate but may need improvement.	Dragster displays excellent production techniques, with obvious attention to detail and quality.
Body paint/finish (X1)	Surface preparation is inadequate; the body is unprimed, with poorly applied final finish.	Dragster body is painted and finished adequately.	Dragster body finish is exemplary; body is smooth, shiny, and exhibits quality.
Vehicle assembly (X1)	Dragster exhibits poor or sloppy assembly of parts (wheels are loose, screw eyes are loose and/or not level, etc.).	Dragster is well assembled, with adequate attention to detail.	Dragster is properly assembled, with obvious evidence of attention to detail.
Drawing scale and dimensioning (X1)	The drawing is present but is not to scale; dimensions are missing, or dimensioning is poorly done.	The drawing is acceptable and to scale; it is a close representation of the vehicle, but some dimensions may be missing.	The drawing is exemplary, exact, and includes all pertinent dimensions.
Drawing completion and quality (X1)	Drawing work is sloppy, missing parts, and lacking quality.	The drawing is complete, and the quality is adequate.	The drawing is complete and precise, and of exceptional quality.
SUBTOTAL (50 points)			

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

Indicate the rule violated: _____

Record scores in the column spaces below.

Semifinalist Interview (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Car builder interview (X2) See Regulation G and instructions on TSA website (X2)	The student shows very limited knowledge of and has difficulty articulating how the car was produced or decisions made during the production; there are signs of the student not being involved in the dragster production.	The student demonstrates some knowledge of the dragster production and has adequate knowledge of some processes or reasoning behind the vehicle design.	The student shows competence and knowledge related to the design and production of the vehicle; the student is able to articulate "reasoning" behind the decisions made.
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (40 points)			

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

Indicate the rule violated: _____

Race (55 points)							
1st	2nd	3rd	4th	5th & 6th	7th & 8th	9th - 12th	13th – 16th
55 points	50 points	45 points	40 points	35 points	30 points	25 points	15 points
SUBTOTAL (55 points)							

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (145 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



ENGINEERING DESIGN

OVERVIEW

The National Academy of Engineering has identified fourteen (14) paramount current and emerging societal challenges that engineering can play a major role in solving. Through research and critical problem-solving, teams will develop a solution to a grand challenge posted on the national TSA website under Competition Themes/Problems.

The solution offered will be informed and designed by precise problem definition, thorough research, creativity, experimentation (when possible), and the development of documents and appropriate models (mathematical, graphical, and/or physical prototype/model). Semifinalist teams will present and defend their proposed solution to a panel of evaluators. The semifinalist presentation will be in the format of a poster session (the poster will be contained in a display).



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

ELIGIBILITY

Entries are limited to three (3) teams, of three (3) or more members, per state. Three (3) team members must participate in the semifinalist interview.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Semifinalist teams will be given ten (10) minutes to present and defend their proposals to judges. Evaluators may ask questions during the team's presentation and may question each team for an additional five (5) minutes at the conclusion of the presentation.
- C. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at

Examples of Models

Mathematical models can take the form of applied formulas, statistical models, data-generated charts, and graphs. **Graphic models** can be sketches, drawings, and photographs or images. **Physical models** can be lab experiments or physical items made of paper, wood, metal, plastic, etc., that represent, or “model,” a concept, or thing. Participants are expected to use mathematical and graphical models in their work. Physical models must be developed and scaled to fit inside the display area.

a designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries (portfolio, display, poster, physical model or visual representation, and LEAP Leadership Resume) 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. Three (3) representatives from each semifinalist team report to the event area for the interview at the time and place stated in the conference program.
- D. Each semifinalist team explains its research and solution for the challenge. Semifinalist teams will use a poster to assist in the defense and explanation of their proposed solution.
- E. The semifinalist LEAP interview will take place as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes per team.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. All work must be completed during the current school year and be the exclusive work of the team members.
- B. Teams must demonstrate a firm understanding of the challenge and problem they are addressing. A team’s entry must reflect thorough and serious research, as well as a creative and plausible solution.

- C. A team's solution must include likely impacts to the environment, economy, and society, as well as any important ethical considerations, and/or political ramifications.
- D. Documentation materials (comprising "a portfolio") are required and should be secured in a **clear front report cover**. The report cover must include the following single-sided, 8 ½" x 11" pages, in this order:
 1. Title page with the challenge listed, event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Definition of the challenge/problem; one (1) page
 4. Explanation of importance: Explain why the problem is important to society and describe the necessary scientific and technical concepts, as well as current issues related to the challenge; two (2) pages
 5. Pages titled "Problem Solution": Present the solution for the identified problem, with support from scientific concepts and principles drawn from evidence. Mathematical and graphic models should be included as necessary, as well as photographs of any physical models developed; seven (7) pages, maximum
 6. Plan of Work log that covers the life of the project including date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); pages as needed
 7. Page(s) titled "References and Resources" that cite books, interviews, professional journals, websites, etc., using Modern Language Association (MLA) style; pages as needed
- E. The size of the display may not exceed 15" deep x 3' wide x 4' high.
- F. A poster is required. The height and width of the poster must be within the limits of the display.
- G. A physical model (or prototype) is required and it must remain within the display limits at all times (including during judging).
- H. If the display or physical model requires power, it must be powered by dry cell(s) or photo-voltaic cells. The power supply must fit inside the display area. All power must be off once the team has completed set-up. Complete instructions must be provided for the judge to press one(1) button or flip one (1) switch to turn on the power supply for judging.

 **The Display**

The portfolio, poster, and physical model must fit inside the display area.

 A model or prototype can be in the form of an animated visual representation.

- I. No harmful or illegal substances are permitted. No viruses, live plants, or animals are permitted. No dangerous processes, experiments, or physical models may be displayed or demonstrated.
- J. Each team must be prepared to send three (3) representatives to a semifinalist poster presentation and interview.
- K. During the semifinalist presentation and interview, each team will be given ten (10) minutes to present and defend its entry to the judges. Evaluators may ask questions during the team's presentation for purposes of improved clarity and understanding and may also ask questions for an additional five (5) minutes at the conclusion of the presentation.
- L. During the presentation/interview teams will be expected to use their posters to enhance and explain their proposed solution to the challenge and problem addressed.
- M. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the portfolio, display, poster, LEAP requirements, and presentation/interview (semifinalists only). Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Civil engineer
- Environmental scientist
- Health and safety specialist
- Manufacturing consultant
- Mechanical engineer

ENGINEERING DESIGN

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Evaluators for semifinalists, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. One (1) stopwatch per team of evaluators
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Table and chairs for semifinalist presentation

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio, poster, and model (if included). Secure the entries in the designated area.



- E. One (1) hour before the event is scheduled to begin, meet with 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 and determine the twelve (12) semifinalists.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. Submit the semifinalist results to the CRC for posting.
- I. The twelve (12) semifinalist teams report at the time and location stated in the conference program for their presentation/interview and LEAP interview. The LEAP interview will be conducted as part of the regular event presentation/interview and will last a maximum of five (5) additional minutes.
- J. Evaluators assess the semifinalist teams, determine the ranking of the ten (10) finalists, and discuss and break any ties.
- K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- L. Return all equipment to appropriate personnel.

Participant/Team ID# _____

ENGINEERING DESIGN

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Portfolio is present.
- Physical model or prototype is present.
- Poster is present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Portfolio (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points, etc.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio components Regulation D (X1)	Portfolio is unorganized and/or is missing three or more components.	Portfolio has most components and is generally organized.	Portfolio has all required components and is well organized.
Problem definition (X1)	The problem is not clearly written or defined; the problem does not fall within the grand challenge selected.	The problem is somewhat clearly written and defined.	The problem is clearly written, concise, and well defined; the problem falls within the grand challenge selected.
Explanation of importance (X2)	There is little evidence of research; there is a lack of understanding of the issues cited.	There is some evidence of research; an adequate understanding of the issues is present.	Thorough research is clearly evident with a firm understanding of the issues established.
Problem solution (X4)	A very brief explanation of the final solution is presented; there is a lack of creativity; descriptions are weak.	An adequate description of the solution is presented and supported by some amount of research and evidence; the solution is somewhat creative.	The solution is supported by the research gathered and scientific and engineering evidence; the solution is plausible and creative.
Plan of Work log (X1)	The log is poorly organized and/or incomplete.	The log is adequately detailed, organized, and contains most of the required components.	The log is very well done and contains all the required components.
References and resources (X1)	There are few references listed, and/or references listed show little relevance to the project's goal.	There are a sufficient number and quality of references listed.	Many quality references are listed, reflecting research in the areas covered.
SUBTOTAL (100 points)			

Record scores in the column spaces below.



Display (Poster and Models) (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Aesthetics (X1)	The poster design is unattractive in appearance and shows a lack of understanding of the graphic design principles.	The poster design is somewhat attractive and shows an adequate understanding of the use of graphic design principles.	The poster design is attractive in appearance, with an exemplary use of graphic design principles.
Use of mathematical models, graphic models, and/or physical models (if included) (X1)	Models are confusing and do not represent and/or support the proposed problem solution.	Models provide adequate representation and support of the proposed problem solution.	Models provide excellent representation and support of the proposed problem solution.
Overall impact (X3)	The poster and models do not enhance the essential components of the team's problem identification and solution.	The poster and models somewhat enhance the essential components of the team's problem identification and solution.	The poster and models greatly enhance the essential components of the team's problem identification and solution.
SUBTOTAL (50 points)			

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

Indicate the rule violated: _____

Semifinalist Presentation/Interview (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Poster presentation (X3)	The presentation shows a lack of understanding and knowledge of the problem and the team's solution to it; not all team members participate in the presentation/interview.	All team members participate somewhat in the presentation/interview and show a general understanding and knowledge of the problem and the team's solution for it.	All team members participate equally in the presentation/interview and show great understanding and articulation of the problem and the team's solution for it; team members make excellent use of the poster to feature or explain complex information.
Responses to judges' questions (X2)	The team's answers to questions reflect a lack of understanding and sophistication; only one or two team members contribute.	The team's answers to questions reflect an adequate degree of understanding and sophistication; team members all participate somewhat.	The team's answers to questions reflect a high degree of understanding and sophistication; team members participate equally.
LEAP Leadership Resume/Interview See Regulation M and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (70 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (220 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



ESSAYS ON TECHNOLOGY

OVERVIEW

Participants will write a research-based essay using two (2) or more sources provided on-site, that makes insightful connections about a current technological topic.

ELIGIBILITY

Participants are limited to three (3) individuals per state.

TIME LIMITS

This event requires synthesis of information to produce a coherent and well-developed essay utilizing sources provided on site.

- A. The allotted time to complete the essay is ninety (90) minutes
- B. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the National TSA Dress Code section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program.
- B. Participants must submit a LEAP Leadership Resume prior to receiving the writing prompt.
- C. Participants are required to prepare essays using a laptop computer provided by participants.
- D. Essays will be submitted in PDF format on a USB flash drive, provided by the participant.

- E. Participants will be provided with a prompt and two (2) or more articles on a current technological topic.
- F. Time begins after participants have received all materials.
- G. After ninety (90) minutes, participants stop writing. Each participant turns in an essay not exceeding three (3) typed pages, and one (1) works-cited page.
- H. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.
- I. Semifinalists will be determined and posted by the CRC.
- J. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- K. The LEAP interview will last a maximum of five (5) minutes.
- L. Ten (10) finalists will be announced at the awards ceremony.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. 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.
- B. Participants are responsible for bringing a fully-charged laptop computer and a flash drive to the event room **Participants who report without these items will not be permitted to compete.**
- C. **No power sources will be provided for participants.** The laptop computer must be capable of being used for the entire ninety (90)-minute time frame of the event, without needing a power source.
- D. Each entry must have the participant identification number only noted and centered directly below the title of the essay.
- E. The length of the essay is limited to three (3) typed pages, single-spaced. The list of references is not included in the three (3) pages.
- F. All essays must adhere to the following criteria:
 1. 11pt Arial or Calibri font

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



2. One inch (1") margins on all sides
 3. Single (normal) spacing
- G. With the essay, participants must turn in a one (1)-page typed bibliography, using proper MLA bibliography format.
- H. Essays must be submitted with a bibliography and in PDF format. Entries not following these guidelines will not be scored.**
- I. All essays become the property of TSA, Inc. and will not be returned.
 - J. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Entries will be evaluated according to the criteria listed on the official rating form, including LEAP requirements. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSIA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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. Evaluators, two (2) or more for the first reading
- C. Evaluators, two (2) or more for the reading of the top-rated twenty (20) essays
- D. Timekeeper

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stopwatch
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables and chairs for evaluators
- C. Tables and chairs for participants
- D. Securable room (preferable) for the duration of the event
- E. Two (2) or more articles on a current technological topic; one (1) set per participant and one (1) set per judge

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 evaluators/assistants to review time limits, procedures, and

regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

- D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- E. Begin the event at the scheduled time by closing the doors, checking the coordinator's report, and collecting LEAP Leadership Resumes. 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 coordinator's report or must have approval of the CRC. An individual who is not on the coordinator's report 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. Instruct participants that they must have their participant ID number only centered directly below the title of the essay. No other identifying information can be included.
- G. Remind the participants to leave a one inch (1") margin on all sides of the essay.
- H. Remind participants to single space their work using an 11pt Arial or Calibri font and to submit only three (3) essay pages, plus a single page for references.
- I. Remind participants that they must save their work in PDF format on a flash drive.
- J. Distribute both the prompt and the articles on a current technological topic to all participants. The prompt will indicate the topic and instructions for composing an essay related to the articles.
- K. Instruct participants that those who finish before time is called must submit their work (on the flash drive) and leave quietly.
- L. Five (5) minutes before the ninety (90) minutes is up, make an announcement that participants have five (5) minutes to complete their essays. Exactly ninety (90) minutes after beginning, call time and collect the flash drives from participants.
- M. Supervise and assist the evaluators during the reading of the essays. Each entry must be read and evaluated independently.
- N. Semifinalists will be determined and posted by the CRC.



- O. Meet with semifinalists at the time and place stated in the conference program to allow them to sign up for a semifinalist LEAP interview time.
- P. Inspect the area in which the semifinalist LEAP interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
- Q. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
- R. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.
- S. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- T. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

ESSAYS ON TECHNOLOGY

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The participant has a fully charged laptop computer.
- The participant has a flash drive.
- The entry is submitted in PDF format with a bibliography.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Essay (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Thesis (X1)	The thesis is not a complete thought and/or is inappropriate for the essay; the title and thesis do not correlate with one another, or the thesis lacks creativity.	The thesis is evident and the idea behind it is somewhat concise and fairly creative; the essay title correlates with the thesis.	The thesis is well structured, concise, positioned appropriately, and creative; the essay title is authentic and correlates well with the thesis.
Introduction paragraph (X1)	The introduction explains the background but may lack detail; it does not help to establish the writer's position.	The introduction creates interest and generally states the position.	A well-developed introduction engages the reader and creates interest; the introduction states a significant and compelling position.
Supporting paragraphs (X2)	Paragraphs lack main points to support the thesis, and/or there is a poor development of ideas.	Paragraphs include main points that are related to the thesis, with adequate supporting details and a fairly well developed narrative.	Paragraphs provide well-developed main points directly related to the thesis; supporting examples are concrete and detailed; the narrative presents a consistent and effective point of view.
Concluding paragraph (X1)	The conclusion is recognizable but it does not effectively summarize the topic.	The conclusion generally summarizes the topic and restates the thesis.	The conclusion wraps up the point of the essay and creatively restates the thesis.
Organization (X1)	There is no discernible organization; transitions are not present.	A logical progression of ideas is evident; transitions are present throughout the essay.	The essay conveys a logical progression of ideas, with a clear structure that enhances the thesis; transitions are mature and graceful.
Style (X1)	The style is confusing and hard to follow; it contains fragments and/or run-on sentences; word choice is simple, ordinary, and/or uncompelling.	The style is clear, sentences are somewhat expressive, and word choice is appropriate.	The style is smooth, skillful and coherent; sentences are strong and expressive, with varied structure; word choice is appropriate and mature.

Record scores in the column spaces below.



Essay (continued) (100 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Mechanics (X1)	The essay contains distracting errors in punctuation, grammar, and spelling.	Punctuation, spelling, and grammar are generally correct, with few errors.	Punctuation, spelling, and grammar are correct with no errors evident.
Research base (X1)	The essay lacks an adequate research base and/or uses minimal support from articles.	The research base is adequate, with support from articles.	The essay conveys a detailed research base that includes comprehensive support from articles.
Works cited (X1)	References are not used effectively, and/or they are not cited using proper MLA format.	Most sources cited are used effectively and help to support the essay topic.	The essay incorporates multiple sources that are credible, appropriate, and support the topic.
SUBTOTAL (100 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation J and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)	TOTAL (120 points)
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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 have the opportunity to verbally communicate their knowledge of technology or TSA subjects. They give a three-to-five (3-5) minute speech fifteen (15) minutes after having drawn a card on which a technology or TSA topic is written.

ELIGIBILITY

Participants are limited to three (3) individuals per state.

Participants can prepare for this event by having a solid knowledge of TSA and current issues in technology.

TIME LIMITS

- A. Each speech should be between three and five (3-5) minutes. Participants will be penalized one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
- B. Time commences when the speaker begins talking and concludes at the end of the speech.
- C. The semifinalist LEAP interview will take place immediately following each semifinalist speech and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program to sign up for a time and submit a LEAP Leadership Resume.



- 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.
- 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 consistent 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 (using the participant ID number only) according to the order in which participants appear on the sign-up sheet.
- E. The timekeeper visually notifies the speaker of the time remaining by using six (6) separate cards. Each of the six (6) 5"x7" notecards has a "time remaining in minutes" number on it (4, 3, 2, 1, $\frac{1}{2}$, and 0), and each is shown in descending order to the participant by the timekeeper during the speech.
- F. After speaking, the participant returns the topic card to the evaluators so that it can be returned to the topic box.
- G. Evaluators independently score each speech.
- 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.
- K. The semifinalist LEAP interview will take place immediately following each semifinalist speech and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

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

- 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"x5" blank notecards.
- D. Although participants are permitted to use notes when speaking, it should be noted that deductions in scoring could be made for this practice if the use of notes detracts from the effectiveness of the speech.
- E. No observers are allowed in the event or preparation rooms during preliminary heats, although they are allowed to sit in the audience of the performance during the semifinalist round. No talking or gesturing is permitted. Observers are NOT allowed to enter or leave during a speech. THERE IS NO APPLAUSE UNTIL THE SPEECH HAS CONCLUDED.
- F. Participants are penalized by each evaluator one (1) point per ten (10) seconds for speaking over five (5) minutes or under three (3) minutes.
- G. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](http://www.tsaweb.org).

EVALUATION

Evaluation is based upon the quality of the speech, the degree to which the content matches the selected topic, adherence to the time limits, and the LEAP requirements. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Advertising executive
- Public speaker
- Politician
- Sales and marketing executive
- Teacher

EXTEMPORANEOUS SPEECH

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for preliminary round of speeches, two (2) or more per heat/event room
- C. Evaluators for semifinalist speeches, two (2) or more
- D. Timekeepers, one (1) per heat/event room
- E. Monitors, one (1) per event room

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol
- B. Speaker's stand/podium, one (1) per heat/event room
- C. Stopwatch, one (1) per heat/event room and two (2) per preparation room
- D. 5" x 7" notecards for "time remaining in minutes" numbers (see Procedure E), six (6) per heat/event room
- E. Table and chairs for evaluators and the timekeeper
- F. Chairs for audience (semifinalist round only)
- G. 3" x 5" blank notecards, three (3) per participant
- 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 packet. Review the event guidelines and check to see that enough evaluatorsassistants have been scheduled.
- B. Collect LEAP Leadership Resumes from students during the initial event time sign-ups at the time and place stated in the conference program. Participants who do not submit the required individual resume are not permitted to compete.
- C. 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.
- D. One (1) hour before the event is scheduled to begin, meet with evaluatorsassistants 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 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.
- F. Manage the smooth flow of participants according to these procedures:
 1. After having selected a topic, the first participant enters a preparation room that is 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 is given 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 consistent 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 records the 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. If heats are used, evaluators determine twelve (12) semifinalists and discuss and break any ties.

- I. A semifinalist list is posted and semifinalists sign up for their speech time. Repeat the process in E (above) to determine the finalists. Include an additional five (5) minutes per time slot (semifinalist round only) to allow for each semifinalist to participate in a semifinalist LEAP interview immediately following his/her semifinalist presentation.
- J. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- K. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

EXTEMPOREANOUS SPEECH

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Speech (80 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points, etc.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Organization (X1)	The speech is unorganized and difficult to follow or understand.	The speech is somewhat organized and generally can be followed and understood.	The speech is well organized and easy to follow; the delivery is exceptional.
Knowledge (X2)	Minimal knowledge of the subject is evident in the speech; the participant does not convey an understanding of the topic.	Adequate knowledge of the subject is evident, and the speaker relates and conveys a general understanding of the topic.	Complete knowledge and understanding of the topic and the development of a theme are conveyed through content of the speech.
Voice and articulation (X1)	The presenter conveys an inconsistent use of proper grammar, word pronunciation, and acceptable tone and pitch.	The presenter generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	Smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch are evident throughout the speech.
Stage presence (X1)	The presenter's appearance is unprofessional, sloppy, and inappropriate.	The presenter's appearance is adequate, appropriate, and somewhat professional.	The presenter's appearance is appropriate, professional, and polished.
Impact (X3)	The speech is unconvincing, uninteresting, and lacks compelling and attention-holding details.	The speech is somewhat convincing and emphasizes several details; it adequately holds the attention of the audience and remains interesting.	The speech is completely convincing, full of emphasis, and holds the attention and interest of the audience.

SUBTOTAL (80 points)

Time Deductions

One (1) point per ten (10)-second interval is to be deducted for speaking under the three (3) minutes or over the five (5) minutes allotted for the speech. Time commences when the participant begins speaking

PRESENTATION DELIVERY TIME	
TOTAL TIME DEDUCTION	

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

Indicate the rule violated: _____

Record scores in the column spaces below.

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (100 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



FASHION DESIGN AND TECHNOLOGY

OVERVIEW

Humans need protection from weather, environmental factors, occupational hazards, and other adversarial conditions. TSA members will demonstrate an understanding of and expertise in using research and design to convey a wearable technology concept.

Students have the opportunity to research, design, and create a portfolio and wearable prototype that reflect the current year's published theme. Twelve (12) qualifying semifinalist teams participate in an on-site presentation/interview in which they present their garment designs to the judges.

The theme for the current year will be published on the national TSA website, under Competitions/Themes and Problems.

ELIGIBILITY

Entries are limited to three (3) teams of two to four (2-4) members per state.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Semifinalists will be allowed ten (10) minutes for a presentation/interview. A deduction of five (5) points will be incurred for exceeding the presentation/interview time limit.
- C. The LEAP interview will be conducted immediately following the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entry and submit LEAP Leadership Resumes at the time and place stated in the conference program.
- B. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.
- C. Semifinalist teams will sign up for times for their presentation/interview. These sessions are closed and will take place with judges only.
- D. Each semifinalist team must have access to student TSA member models (from the team's chapter) and the team-created prototypes in order to compete in the semifinals.
- E. Semifinalists report to the event area at the time and place stated in the conference program.
- F. Semifinalists use this assigned time to present their designs and answer questions from the judges.
- G. Models will be present and wearing the prototypes designed by the team. Models must be members of the team's TSA chapter.
- H. Any type of prototype (garment) that is typical of responsible clothing design and creation is considered appropriate. The purchase/use of special textiles (water/fireproof materials, etc.) is not required. Information about special textiles should be used in the research/design portfolio, but the prototype does not have to be constructed using these materials.
- I. During the semifinalist round, participants will be allowed ten (10) minutes to complete the presentation/interview (two [2] minutes for setup, three [3] minutes for the actual presentation, three [3] minutes for the interview, and two [2] minutes for removal of items). Points will be deducted from a team's score for exceeding the ten (10)-minute time frame allowed for the semifinalist round.
- J. The LEAP interview will be conducted immediately following the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

- K. Final evaluation by judges takes place immediately following the completion of the presentation.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

 Read the General Rules and Regulations section 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. Participants will use a 32-quart plastic storage box to submit their portfolio, patterns, and any prototypes that are not placed on hangers or on mannequins.
- C. Portfolio
 1. Documentation materials (comprising "a portfolio") are required and should be placed and secured in a **clear front report cover**. (The portfolio must be submitted with the patterns and prototype.) The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 - a. Title page with the event title, the conference city and state, and the year; one (1) page
 - b. Table of contents; one (1) page
 - c. Literature research summary; two (2) pages
 - d. Interpretation of theme; two (2) pages
 - e. Explanation of the design and construction of the prototypes, textiles used, notions needed, sewing/construction techniques used, etc.; two (2) pages
 - f. Design process sketches (hand-drawn); five (5) pages
 - g. Computer-drawn final design print-outs; five (5) pages
 - h. References /resources; two (2) pages
- D. PatternsFull-sized student-made pattern(s) must be included. Patterns should be made of appropriate lightweight vellum paper. Patterns must NOT be purchased.
- E. Prototypes
 1. Prototypes for preliminary judging must be put on hangers (if applicable), or on dressmaker mannequins; the portfolio and patterns should accompany the prototypes. If the prototype is not a garment that can be placed on a hanger or mannequin, then it should be placed in the container with the portfolio and patterns.

2. The prototypes must be presentation quality.
 3. The purchase/use of special textiles (water/fireproof materials, etc.) is not required. Information about textiles should be used in the research and design portfolio, but the prototype does not have to be constructed using these special materials.
 4. All designs and prototypes/garments should be appropriate for viewing at the national TSA conference.
 5. Any portfolio or garment that depicts inappropriate or unacceptable designs will be disqualified.
 6. All patterns and prototypes must be designed, sketched, computer-drawn, developed, and sewn by participants. All garments must be the original work of the participants.
 7. Only the required number of prototypes (garments) are to be submitted for evaluation. Additional items, including accessories and other garments, may be used only in the semifinalist presentation and may not be submitted for preliminary judging.
- F. The semifinalist portion of the event evaluates the quality of the team's presentation, as well as the team's knowledge and expertise pertaining to the entry in the following areas: overall prototype design and originality, research, theme interpretation, construction/sewing techniques, and use of appropriate textiles/materials in the design.
- G. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on points earned for the portfolio, patterns, prototypes, LEAP requirements, and a presentation/interview (semifinalists only). Points earned for the semifinalist presentation/interview will be added to the portfolio score to determine the final ranking of the top ten (10) finalists. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

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

FASHION DESIGN AND TECHNOLOGY

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more per round
- C. Timekeeper

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Stopwatch, one (1)
 - 7. Results envelope
 - 8. Racks for hanging garments
 - 9. Tables for entries
 - 10. Envelope for LEAP Leadership Resumes
 - 11. LEAP Interview Judging Protocol
- B. Tables and chairs for evaluators
- C. Chairs for audience
- D. One (1) table, approximately six feet (6') long, for judges

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.
- B. Check in entries and collect LEAP Leadership Resumes from students during the initial event check-in at the time and place stated in the conference program.
- C. 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.



- D. One (1) hour before the event is scheduled to begin, meet with evaluatorsassistants 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 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.
- F. Evaluators independently assess each entry and determine twelve (12) semifinalists.
- G. Facilitate event pick-up at the time and place stated in the conference program. In order to pick up an entry, the student(s) must have a conference name badge with a team ID number that matches the team ID number on the entry.
- H. Submit semifinalist results to the CRC for posting. Also prepare and post a sign-up sheet for semifinalist presentations.
- I. Conduct semifinalist presentations.
- J. Allow the first team to enter the event room, and provide two (2) minutes for set-up of materials. The event coordinator or assistant introduces the team by entry number only. No nametags or clothing that give any indication of the hometown, school, or chapter are allowed. Each team will be allowed three (3) minutes for the presentation and three (3) minutes to answer interview questions. Each team is allowed two (2) minutes to remove all materials.
- K. The LEAP interview will be conducted immediately following the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- L. Evaluators determine the ten (10) finalists and discuss and break any ties.
- M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- N. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

FASHION DESIGN AND TECHNOLOGY

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Portfolio is present.
- Patterns are present.
- Prototypes are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Portfolio (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation C (X1)	Some parts of the portfolio are missing; the portfolio is unorganized, messy, and lacks quality.	Most components of the portfolio are present, organized, and adequate in quality.	All components of the portfolio are included; strong effort and quality of work are evident.
Summary of research (X2)	The summary is too brief and/or lacks the appropriate details expected for the event.	The summary of the research is sufficient; most of the key details are included.	The summary is organized, clear, and concise, with appropriate and necessary details included.
Interpretation of theme (X1)	The interpretation of the theme is very weak and unconvincing.	The interpretation of the theme is clear, with some appropriate justification.	The interpretation of the theme is clear, concise, and thorough, with convincing justification.
Explanation of garment prototypes (X1)	The explanation is unclear, poorly organized, and/or does not accurately describe the garment prototypes.	The explanation is loosely organized, with adequate attempts to describe the garment prototypes and their production.	The explanation is clear, concise, and/or demonstrates extensive knowledge of garment prototypes and production.
Design process sketches (X2)	Sketches are poorly executed and/or lack necessary details in the design process.	Sketches are complete as drawn and include most notations and references to the design process.	Sketches are well executed, organized, and clearly represent the design process.
Computer drawings for final design (X2)	Computer drawings fail to accurately portray the final design; there are major omissions of important details.	Computer drawings somewhat accurately illustrate the final design, with many important details included.	Computer drawings of the final design are clear, accurate, and effectively portray the final product.
Resources/references (X1)	Research is inadequate, with very few credible resources and references provided and/or documented.	Research appears adequate, with most important resources and references adequately documented.	Research is comprehensive, and all resources and references are properly documented.

SUBTOTAL (100 points)

Record scores in the column spaces below.



Patterns (30 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Two or more hand-made garment patterns (X2)	Patterns are poorly constructed, and/or are missing key components.	Patterns are generally well constructed; some key attributes and designs are included.	Patterns are designed to detail standards and are of a production quality.
Creativity, originality, and difficulty (X1)	Patterns lack creativity, and/or originality, and/or difficulty in execution.	Patterns are of good quality and demonstrate some degree of difficulty and originality.	Patterns are of industry standard; they clearly demonstrate originality, creativity, and skill.
SUBTOTAL (30 points)			
Quality of Garments (30 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Proper sewing/construction techniques used/evident (X2)	Prototype construction fails to meet accepted standards and/or techniques of construction..	Prototype construction meets acceptable standards and construction techniques.	Prototype construction is of high quality and indicates use of a variety of appropriate techniques.
Use of notions (buttons, zippers, snaps, embroidery, embellishments, etc.) (X1)	Little or no use of notions is evident in the garments.	An adequate choice and variety of notions are appropriately used in the garments.	An excellent choice and variety of notions are used that enhance the overall appearance and quality of the garments.
SUBTOTAL (30 points)			

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

Indicate the rule violated: _____

Semifinalist Presentation/Interview (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participants seem unorganized and unprepared for the presentation.	Participants are generally prepared for the presentation.	The presentation is logical, well organized, and easy to follow.
Knowledge (X2)	Participants seem to have little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit an adequate understanding of the concepts in their project.	Participants show clear evidence of a thorough understanding of the project.
Articulation (X1)	The interview provides an unclear, unorganized, and/or illogical description of the project.	The interview offers a somewhat logical and easy-to-understand project description.	The presentation provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The team is verbose and/or uncertain in its presentation/interview; participants' posture, gestures, and lack of eye contact diminish the interview.	The team is somewhat well-spoken and distinct in its presentation/interview; participants' posture gestures, and eye contact are acceptable.	The team is well-spoken and distinct in its presentation/interview; participants' posture, gestures, and eye contact result in a polished, natural, and effective interview.

Semifinalist Presentation/Interview (continued) (60 points)			
Quality of prototype on model (X1)	The prototype does not appear to fit and/or is inappropriate for the person modeling (color, style, textures, etc).	The prototype fits neatly and is generally well-made for the person modeling.	The prototype clearly is made and designed for the model—fitting nicely, with appropriate style, colors, textures, etc.
SUBTOTAL (60 points)			

Time violation (a deduction of five (5) points total will be incurred for exceeding the semifinalist presentation time limit). Record the deduction in the space to the right.

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.) **TOTAL (240 points)**

Comments:

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

Evaluator

Printed name: _____

Signature: _____



FLIGHT ENDURANCE

OVERVIEW

Participants analyze flight principles with a rubber band-powered model aircraft. Participants have the opportunity to build, fly, and adjust (trim) a model to make long endurance flights inside a contained airspace. Models must be of fixed-wing design and comply with all event specifications. Rotary-wing aircraft and aerostat (lighter than air) aircraft are NOT permitted.

Each year it is amazing when students demonstrate their mastery of this event by flying planes in graceful arcs around an indoor space. Flights do not always go that way, but when they do, they are beautiful.

ELIGIBILITY

Participants are limited to two (2) individuals per chapter, one (1) entry per individual.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Participants are provided a minimum of thirty (30) minutes for trim flights at the event site.
- C. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the National TSA Dress Code section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event coordinator at the time and place stated in the conference program to sign up for flight heats and submit a LEAP Leadership Resume.

- B. Participants arrive at the flying site for trim flying during the time designated for their heat. Time allotted for the trim portion of the event 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 release signal from the timer. Timing begins when the model rises off the ground. A poster board launching platform will be provided.
- G. Flight time ends when models hit the floor/ground or when they come to rest on an obstruction.
- H. Only minor repairs are allowed during trim and time trials.
- I. The timekeeper will record two (2) official flight times for each participant.
- J. Immediately following the second flight, the participant will hand his/her motor to the judge for weighing.
- K. Portfolios and models will be placed on flight boxes for judging. Judges will begin with the top flight times and will evaluate models, portfolios, and flight boxes until the top twelve semifinalists have been determined. Models that violate any part of Regulation C will be disqualified.
- L. Ties are broken by determining the longest single flight time.
- M. Semifinalists will be determined and posted by the CRC.
- N. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- O. The LEAP interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

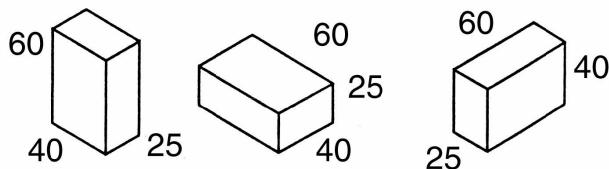
REGULATIONS

- A. Documentation materials (comprising "a portfolio") are required and must be secured in a clear front report cover. The portfolio must include a flight log (see official sample that follows), with the previous ten (10) flights signed off on by the participant's advisor. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
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.
 4. A graphic flow chart with pictures and design principles used in building and adjusting the model plane used for successful flights
 5. Scaled Engineered Drawings of all structural parts of the plane

Flight Log

Participant ID#:			Dates:		
Flight #	# of winds	Time aloft	Flight pattern	Trim adjustment	Advisor sign off
#1					
#2					
#3					
#4					
#5					
#6					
#7					
#8					
#9					
#10					

- B. The model and its parts *must* be contained in a flight box that does not exceed 25cm x 40cm x 60cm. Flight box hardware, such as hinges, handles, and wheels, are not measured.



The flight box is required and is intended to protect the model in transit.

- C. Materials include the following:

1. Models are to be made of any materials that are typically found in model construction. This includes, but is not limited to: wood, foam, foam board, and plastics. Hardeners are permitted but are not required. The use of any materials that are deemed unsafe will not be tested and will be disqualified.
2. Models **MUST** use commercially available “fix-pitch” propeller or “fixed-pitch” propeller assembly: minimum of 140mm to a maximum of 170mm in diameter. Propellers may be trimmed, shaped, balanced, or re-pitched, but must remain fixed in pitch. Variable-pitch propellers and/or mechanisms are **NOT** permitted.
3. Fuselage dimension: minimum of 300mm in length, measured with prop assembly attached.
4. Wingspan: maximum of 45cm horizontally projected, wing chord 9cm projected.
5. Rubber motor: maximum weight of motor is 1.50 grams, including the O-rings. No length measurement is made. Spare motors are allowed during the official flights. Two (2) rubber O-rings may be used on the rubber motor loop for easier handling of wound motors.
6. Model weight: minimum of 7.0 grams, maximum of 21.0 grams. Models are weighed without motors attached. Clay is permitted for trim ballast. Model is weighed with clay ballast.
7. Steel wire may be used only for the propeller shaft, motor hook, landing gear, and the connection between fuselage and tail. Small plastic tubes, such as coffee stirrers, may be used.
8. The two wheels must be a minimum of 15mm in diameter, made of plastic or wood, and they must roll freely by the weight of the plane on a smooth surface.



- D. Acceptable flight support equipment includes the following:
 - 1. Mechanical rubber motor winders or battery-powered motor winders may be used. No AC-powered winders are allowed.
 - 2. A winding stooge may be used to anchor the model while the motor is being wound. A person may not serve as a winding stooge.
- E. 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.
- F. When at rest, the landing gear must support the model without the fuselage and/or propeller touching the floor or launching pad.
- G. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the duration of flight, documentation, flight log, flight box, and LEAP requirements. A bonus of ten (10) seconds is added to the flight time per flight if the model successfully lands on its wheels and comes to a rest on them. Please refer to the official rating form for more information.

NOTES

Two organizations—the Academy of Model Aeronautics (AMA) and the National Free Flight Society (NFFS)—welcome your inquiries and offer suggestions, help, and technical information concerning model aircraft and flight technology.

Contact the AMA: www.modelaircraft.org.

Contact NFFS: www.freeflight.org.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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)
- E. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Marking pens (felt tip, fine point)
 - 6. Two (2) metric tape measures
 - 7. Two (2) rolls of caution tape
 - 8. 125 zip lock bags
 - 9. Three (3) launch pads (poster board, 30" x 40")
 - 10. Signs for door(s) reading Do Not Open, Flight in Progress, Knock for Entry
 - 11. Three (3) helium balloons
 - 12. One (1) fishing reel with line
 - 13. Stopwatches, three (3)
 - 14. Electronic gram scale (to .01 gram)
 - 15. Results envelope
 - 16. Envelope for LEAP Leadership Resumes
 - 17. LEAP Interview Judging Protocol

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- D. For participants who violate the rules, the decision either to deduct 20% of the total points earned or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- E. Check in participants, collect LEAP Leadership Resumes, 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 they 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 participants are checked again. Models showing deviations may be disqualified.
 - J. Evaluators determine the twelve (12) semifinalists.
 - K. Submit semifinalist results to the CRC for posting.
 - L. Inspect the area in which the interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
 - M. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
 - N. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.
 - O. Evaluators determine the ten (10) finalists, in rank order.
 - P. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
 - Q. If necessary, manage security and the removal of materials from the event area.



Participant/Team ID# _____

FLIGHT ENDURANCE			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
<p>Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.</p> <p><input type="checkbox"/> Portfolio is present. <input type="checkbox"/> Model is present. <input type="checkbox"/> Flight box is present. <input type="checkbox"/> Completed LEAP Leadership Resume is present. <input type="checkbox"/> ENTRY NOT EVALUATED</p>			
Documentation (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
<p>Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.</p>			
Portfolio components See Regulation A (X1)	Portfolio is unorganized and/or missing three or more components.	Portfolio is organized adequately, with most, if not all, components present.	No components are missing in the portfolio, and content and organization are clearly evident.
Technical attributes (X1)	Attributes of the design are very sketchy in nature.	Attributes of the design are included and adequately reflect basic knowledge of flight design.	Clear and precise attributes of the design are given; an in-depth knowledge of flight design is exhibited.
Description and identification of parts (X1)	The majority of the parts are not described, sourced, or identified accurately; scaled engineered drawings are incomplete or missing.	Most parts are described and sourced accurately; scaled engineered drawings include most details.	All parts are described and sourced completely and accurately; engineering drawings are complete, or there is a statement of no created parts present.
Modifications and technical review of flight log (X1)	Only one modification is noted, and/or an explanation of why the modification was made is missing.	Modifications are given with adequate explanations for how they improved flight endurance.	Modifications and an explanation of why they were made are provided; a clear and precise explanation for how they improved the flight endurance is provided.
Graphic flow chart (X1)	Graphic flow chart is unclear; the majority of the design principles are not addressed or are missing; pictures are missing.	Graphic flow chart is partially clear; most of the design principles are addressed and/or present; some pictures are missing.	Graphic flow chart is clearly followed; all design principles are addressed; no pictures are missing.
Flight log (X1)	The flight log is incomplete; the advisor signature is not included.	The flight log is generally complete; the advisor's signature is present.	The flight log is complete, with the advisor's signature; a thorough understanding of the flight log's purpose is evident.
Flight box (X1)	The flight box exceeds dimensions by more than 1%.	The flight box exceeds dimensions by less than 1%.	The flight box adheres to the maximum size restrictions.
SUBTOTAL (70 points)			

Record scores in the column spaces below.

Flight Times**Flight times recorded to the nearest tenth (.1) of a second.**

	Duration of flight #1	Seconds	
	Duration of flight #2	Seconds	
	Landing bonus – add ten (10) seconds for each successful landing	Seconds	
	Total flight scores (combine flight #1, flight #2, and bonus for landing/s)	Seconds	
SUBTOTAL FLIGHT SCORE			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.	
SUBTOTAL (20 points)				

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.) **TOTAL (points to be determined)**

Comments:

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

Evaluator

Printed name: _____

Signature: _____



FUTURE TECHNOLOGY TEACHER

Technology education is the study of technology, in which students “learn about the processes and knowledge related to technology.” As a field of study, it covers the human ability to shape and change the physical world to meet needs, by manipulating materials and tools with techniques.

http://en.wikipedia.org/wiki/Technology_education

OVERVIEW

While the need for student proficiency in technology (as one area of STEM) is increasing, the number of qualified technology education teachers is decreasing. To help address this imbalance, this event will encourage participants to 1) investigate technology education preparation programs in higher education, and 2) test their potential as a future technology educator.

ELIGIBILITY

Entries are limited to two (2) individuals per chapter.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Semifinalists will make a presentation of no more than ten (10) minutes in length.
- C. A maximum of four (4) minutes will be allowed for set-up.
- D. At the conclusion of the presentation, the participant must remove all materials within three (3) minutes.
- E. 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.
- F. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the National TSA Dress Code section of this guide, is required for this event.

PROCEDURE

- A. In preparation for this event, participants thoroughly research and select two (2) accredited colleges or universities that offer 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 teachers is recommended, as is a search on the Internet of colleges and universities that offer technology education degree programs. 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, one (1) page (single-sided), explaining why s/he is a good candidate to become a technology teacher. Personality traits, goals, and interests should be included in the essay. The essay should be word processed and free of spelling and grammatical errors.
- C. Each participant will provide one (1) letter of recommendation from a counselor, school official, or other individual (not a relative) on official letterhead. Any identifying information (school or participant) should be concealed.
- D. A lesson plan describing the rationale, goals and objectives, standards correlation, and a description of the lesson and activity—including assessment—must be submitted. The lesson plan should be clearly labeled with the grade level for which it is intended.
- E. Copies of the lesson plan, all handouts, and a list of resources and references used for the entry and in the presentation should be included in the documentation portfolio.
- F. Participants report to the event area at the time and place stated in the conference program. Each participant will turn in his/her portfolio and submit a LEAP Leadership Resume 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 identification number only and in order of scheduled times.



STEM education is an approach to teaching and learning that integrates the content and skills of science, technology, engineering, and mathematics. The goal of STEM education is to prepare students for post-secondary study and the 21st century workforce. (Maryland State Department of Education - STEM education description)



Each time slot includes four (4) minutes for set up and three (3) minutes to pack up and remove materials/equipment.

- J. Participants are encouraged to interact with the judges, who will act as students in the classroom.
- K. The LEAP interview will be conducted as part of the semifinalist presentation and will last a maximum of five (5) additional minutes.
- L. Portfolios should be picked up at the time and location listed in the conference program.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. The research summaries, essay, and lesson plan/activity must be the result of the participant's own efforts and not purchased or open source material. General content from either may be used, but it must be cited.
- B. All parts of the entry must be contained in the documentation. Documentation materials (comprising "a portfolio") are required and should be secured in a [clear front report cover](#). The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, the year, and the participant's ID number; one (1) page
 2. Table of contents; pages as needed
 3. College research summaries; one (1) page maximum for each college
 4. College essay; one (1) page
 5. Letter of recommendation, with identifying information (school or participant) concealed; one (1) page
 6. Lesson plan/activity; three (3) sets (for the judges and coordinator)
 7. Copies of handouts; three (3) sets (for the judges and coordinator)
 8. References and resources; pages as needed
- C. Activities that typically would follow the teaching lesson will be described by the presenter near the conclusion of the ten (10)-minute lesson.

- D. Topics for the lesson plan/activity should correlate to the standards for technological literacy. (Use the International Technology and Engineering Educators Association ITEEA website at www.iteea.org for more information about the technology standards.) Topics also should reflect Science, Technology, Engineering, and Mathematics (STEM) initiatives and integration. Lesson plans/activities that explore knowledge, creativity, and skills in the following areas are suggested:
1. Medical technology
 2. Agricultural and biotechnology
 3. Power and energy technology
 4. Information and communication technology
 5. Transportation technology
 6. Manufacturing technology
 7. Construction technology
- E. Hazardous materials, chemicals, wet cell batteries, lighted flames, combustibles, and other substances are not allowed at the conference and cannot be part of the presentation.
- F. Copies of the lesson plan and of all handouts, materials, and resources should be prepared and distributed to the judges, who will act as students in the classroom.
- G. Audio-visual materials such as charts, graphs, posters, displays, flip charts, transparencies, and models may be included. Bonus points may be awarded for these materials. Any audio visual equipment required for the presentation must be provided by the participant; this includes a power strip with surge protector, and an extension cord, if needed.
- H. Participants are not allowed to watch or hear the presentations of other participants.
- I. One (1) point will be deducted for each ten (10)-second interval over the allotted time for the presentation, set up, and/or clean-up.
- J. No school or individual names may be labeled on the entry; only participant identification numbers should be used.
- K. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).



EVALUATION

Evaluation is based on the portfolio, the developed lesson plan/activity, the presentation of the lesson, and the LEAP requirements. The appropriateness of the lesson/activity for the designated grade level, the poise of the participant during the presentation, the interaction of the participant with the students (judges acting as students), and the enthusiasm and motivation of the participant will be assessed in the semifinalist evaluation. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

Technology (and other STEM 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 packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Stopwatch
 - 7. Tables and chairs for participants and evaluators
 - 8. Copy of ITEEA publication *Standards for Technological Literacy*
 - 9. Results envelope
 - 10. Envelope for LEAP Leadership Resumes
 - 11. LEAP Interview Judging Protocol

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 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 portfolios. The entry number sticker should be placed in the lower right corner of the portfolio's cover and LEAP Leadership Resumes.
- E. Evaluators read, individually evaluate entries, and determine twelve (12) semifinalists.
- F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- G. Submit semifinalist results to the CRC for posting.
- H. Semifinalists sign up for an interview at the time and place stated in the conference program.
- I. Make sure the presentation room is set up correctly.
- J. Conduct the semifinalist presentations. The LEAP interview will be conducted as part of the semifinalist presentation and will last a maximum of five (5) additional minutes.
- K. Evaluators determine the ten (10) finalists and discuss and break any ties.
- L. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- M. If necessary, manage security and the removal of materials from the event area.



Participant/Team ID# _____

FUTURE TECHNOLOGY TEACHER

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Two (2) college research summaries are present.
- A college essay is present.
- A lesson plan is present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation B (X1)	The portfolio is unorganized and/or is missing a number of components.	The portfolio is adequate, with most components included.	The portfolio is completely organized and contains all components.
College search summaries (X1)	Only one (1) college technology education program is identified; the summary is inadequate.	Two college programs are adequately summarized.	Two college programs are documented, with excellent summaries.
College essay (X1)	The essay is too short, and/or not typed, and/or poorly written, and and/or there are many spelling and grammatical errors.	The essay is generally well written, typed and the correct length, but it contains several spelling and grammatical errors.	The essay is well written, typed, the correct length, and contains no spelling or grammatical errors.
Lesson plan components See Procedure D (X2)	The lesson plan is missing several of the stated components, including the standards correlation and/or instructional design focus; it is not creative or unique.	The lesson plan includes all of the stated components, and it is adequately organized, with an instructional design focus; it has some unique and creative aspects.	The lesson plan includes all of the stated components; it is well organized and has an instructional design focus; it is creative and unique.
Handouts (X1)	Handouts are poorly developed and do not have an impact on the lesson and activity.	Handouts are relatively well developed and have some impact on the lesson and activity.	The handouts are effective and greatly impact the lesson and activity.
Resources and references (X1)	A minor attempt is made to document resources and references.	Several resources and references are documented.	There is clear evidence of many applicable resources and references.

SUBTOTAL (70 points)

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

Indicate the rule violated: _____

Record scores in the column spaces below.

Semifinalist Presentation (90 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	The presentation lacks organization; it is difficult to follow or understand.	The presentation is somewhat organized.	The presentation is clearly organized and easy to follow; it flows smoothly to the conclusion.
Introduction (X1)	The introduction is weak, with little effort made to emphasize the topic and/or to generate interest and enthusiasm for the topic.	Sufficient effort is evident in the introduction, which somewhat creates a level of interest.	The introduction is effective, stimulating, and creates interest on the part of observers.
Instructional competence (X2)	The presenter's delivery of content lacks confidence.	The presenter's delivery of content is generally professional and enthusiastic.	The presenter's delivery of content is professional, enthusiastic, confident, and full of personality.
Voice/language (X1)	The participant conveys an inconsistent use of proper grammar, word pronunciation, and acceptable pitch and tone.	The participant generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	The participant uses smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch throughout the presentation.
Innovation/creativity (X1)	The presentation fails to convey innovation or originality.	The presentation is somewhat original and innovative in its delivery and topic development.	The presentation is imaginative and innovative in its delivery and topic development.
Knowledge (X1)	Minimal knowledge of the subject is evident in the presentation; the content does not relate to the topic, and/or the participant does not convey an understanding of the topic.	Knowledge of the subject is evident, and the presenter relates and conveys a somewhat clear understanding of the topic.	Complete knowledge and understanding of the subject and relationship to the topic are conveyed throughout the introduction.
LEAP Leadership Resume/Interview See Regulation K and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (90 points)			

Time Deductions	
A one (1)-point deduction will be incurred for each ten (10)-second interval over the allotted times for set up, presentation, or clean up.	
	Total time for presentation
	Total time for set-up
	Total time for clean up
	Presentation deduction
	Set-up deduction
	Clean up deduction
TOTAL TIME DEDUCTION	



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

Indicate the rule violated: _____

BONUS For the inclusion of audio/visual materials in the presentation (X1)	Audio/visuals are included, but they only slightly enhance the presentation.	Audio/visual materials are varied and moderately enhance the presentation.	Appropriate materials and audiovisuals are used and effectively enhance the presentation.
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(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (170 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



MUSIC PRODUCTION

OVERVIEW

Modern music production has become integrated with technology in a synthesis of technical, artistic, and creative skills. Exploring the link between original, creative ideas and the tools used to implement them increases the development of a person's technical and expressive abilities.

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.

ELIGIBILITY

Entries are limited to three (3) teams per state. Teamwork is strongly encouraged, but an individual may participate solo in this team event.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. The musical piece should be more than one (1) minute and less than three (3) 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 three (3)-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.
- E. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

In recent years, developments in communication technology have dramatically changed the way music is experienced. During the past century, recorded music went from nonexistent to the primary way people listen to music. With this event, TSA members can demonstrate their mastery of this medium.



LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the **National TSA Dress Code** section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries (portfolio, CD, and LEAP Leadership Resume) 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 portfolio 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 portfolios until their scheduled interview time.
- E. The LEAP interview will be conducted as part of the semifinalist presentation and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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 three (3) 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 fifteen (15) seconds over the three (3)-minute maximum length.
- D. Musical pieces thirty (30) seconds or less will be disqualified.
- E. All entries become the property of TSA for non-profit promotional purposes and will not be returned after judging.
- F. All musical pieces must be the original work of the team and must have been completed within the current school year.
- G. Free, non-copyrighted sounds, loops, or other musical elements may be incorporated into musical pieces. The sources of these elements and the way in which they are used in the musical piece must be described in the portfolio, and the track list must illustrate these elements.
- H. Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated in a timeline format in the portfolio.
- 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 (see the Student Copyright Checklist). **NOTE: Failure to follow this procedure results in disqualification.**
- J. The CD and documentation materials are turned in to the event coordinator at the time and place stated in the conference program. Documentation materials (comprising a “portfolio”) are required and should be secured in a **clear front report cover**. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the title of the musical piece, the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); one (1) page
 4. Purpose and description of the musical piece; one (1) page
 5. Self-evaluation of the piece using criteria from the official rating form; one (1) page
 6. Lyrics; pages as needed
 7. Audio CD(s) track list: Each actual instrument, voice, and/or synthesized instrument track used in the final music piece must be illustrated graphically using a timeline format similar to that shown in Figure 1.



Figure 1

8. When musical elements are used that were NOT created by the team, the source, effects applied, 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 (non-copyrighted); pages as needed
11. Completed Student Copyright Checklist, as applicable (see Forms Appendix or TSA website)
- K. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Evaluation is based on the musical piece, accompanying documentation, and LEAP requirements. 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 portfolio should reflect familiarity with the technologies used in musical production. Portfolios should be complete, well written, and professional in organization and appearance. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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
- Music composer



MUSIC PRODUCTION EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for first round, two (2) or more
- C. Evaluators for second round, two (2) or more
- D. Semifinalist evaluators, two (2) or more
- E. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. One (1) stopwatch per group of evaluators
 - 7. Results envelope
 - 8. Envelope for LEAP Leadership Resumes
 - 9. LEAP Interview Judging Protocol
- B. Tables and chairs for evaluators
- C. CD player capable of playing an audio CD, as needed
- D. Extension cords (25' minimum length), as needed
- E. Power bar with surge protection, as needed

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes 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. 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 portfolio. Secure the entries in the designated area.
- E. One (1) hour before the event is scheduled to begin, meet with evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- F. Evaluators independently assess the entries.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. The number of evaluator teams depends on the number of entries. There are two (2) evaluators for every twenty (20) entries for the first evaluation round.
- I. Evaluators review the entries, to determine twelve (12) semifinalists. The semifinalist list is posted.
- J. 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. The LEAP interview will be conducted as part of the semifinalist event interview and will last a maximum of five (5) additional minutes.
- L. Evaluators independently assess the semifinalists, discuss and break any ties, and determine ten (10) finalists.
- M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- N. Take all CDs, portfolios, extension cords, and supplies to the CRC room. Return all equipment to the appropriate personnel.



Participant/Team ID# _____

MUSIC PRODUCTION

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL****Go/No Go Specifications**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The portfolio is present.
- The track timeline is included in the portfolio and meets the required format.
- The CD is present and plays on a standard CD player.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation J (x1)	The portfolio is unorganized and/or missing three or more components.	The portfolio is adequately organized and includes most, if not all, components.	All components of the portfolio are included, and the organization of the content is clearly evident.
Purpose and description (X1)	An unclear purpose and description of the music production idea and generation are provided.	The purpose and description are explained adequately.	A clear and concisely written purpose and description of the music production are included.
Plan of Work log and self-evaluation (X1)	The Plan of Work log and/or self-evaluation are incomplete, and/or missing key components.	The Plan of Work log and/or self-evaluation are somewhat complete and incorporate reflections and efforts of the team.	A complete and concisely written Plan of Work log and self-evaluation are provided and incorporate the efforts and reflections of the team.
Track timeline (X1)	The track timeline is incomplete and/or not created correctly; the timeline does not correlate with the actual music production.	The track timeline is largely complete and attempts to correlate with the actual music production.	The track timeline is of exemplary quality; it correlates completely with the music production and is easy to follow.

SUBTOTAL (40 points)

Record scores in the column spaces below.

Musical Piece (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Creativity and uniqueness (X1)	The musical idea is overly familiar or is a cliché; no variety or exploration of musical elements (range, timbre, dynamics, tempo, rhythm, and melody) are evident.	The work involves some original aspects or manipulations of musical ideas; it explores and varies at least one or more musical elements.	The piece includes highly original, unusual, or imaginative musical ideas; it explores and varies at least two or more musical elements.

Musical Piece (continued) (60 points)			
Artisanship (X1)	The piece gives no sense of a completed musical idea; there is no clear beginning, middle, or end section; the form appears random, rather than organized.	One musical element has been used to organize the musical ideas and overall form, which are somewhat coherent.	The piece presents at least one complete musical idea; the piece has a coherent and organized form with a clear beginning, middle, and end; musical elements are used to organize the musical ideas and form.
Energy and style (X1)	The piece lacks liveliness, vitality, and vigor; there is no flair, elegance, or grace to the form.	The piece generates an initial level of energy that appeals to the listener; the style is somewhat distinctive.	The liveliness and forcefulness of the piece excite the listener; the style is truly unique and electrifying.
Appropriateness (X1)	The musical idea or concept is not appropriate and acceptable for use in the event.	The musical idea or concept presented is acceptable and somewhat fitting.	The musical idea or concept presented is fitting and serves as an excellent example of the type of work expected.
Overall appeal (X2)	The work does not present an effective general impression; the musical ideas do not hold the listener's interest.	The work includes some interesting musical ideas; the general impression is pleasant and moderately effective.	There is strong, interesting, and effective audio appeal; the work is designed to be enjoyed by the listeners.

SUBTOTAL (60 points)

Time Deductions

Five (5) points deducted for each five (5) seconds under one (1) minute; five (5) points deducted for each fifteen (15) seconds over three (3) minutes.

Total time under	Five (5)-second intervals under		Under time deduction
Total time over	Fifteen (15)-second intervals over		Over time deduction
TOTAL TIME DEDUCTION			

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

Indicate the rule violated: _____

Semifinalist Interview (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	The team/individual seems unprepared and unorganized for the interview.	The team/individual is adequately prepared and organized for the interview.	The interview with judges is logically organized and impressive.
Knowledge (X1)	The team/individual seems to have very little understanding of the concepts and gives vague interview answers.	The team/individual has a generalized understanding of the concepts discussed and answers questions well.	There is clear evidence of a thorough understanding of the concepts discussed.
Articulation (X1)	The interview is full of illogical thoughts that lack understanding and clarity.	The interview is somewhat logical, clear, and concise.	A concise, logical, and clear explanation of the entry is given in the interview.
Delivery (X1)	The team/individual is verbose and/or uncertain in the interview; posture, gestures, and lack of eye contact diminish the delivery.	The team/individual is somewhat well-spoken and clear in the interview; posture, gestures, and eye contact result in an acceptable delivery.	The team/individual is well-spoken and distinct in the interview; posture, gestures, and eye contact result in a polished, natural, and effective delivery.



Semifinalist Interview (continued) (60 points)				
LEAP Leadership Resume/Interview See Regulation K and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.	
SUBTOTAL (60 points)				

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (160 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



ON DEMAND VIDEO

OVERVIEW

Participants have the opportunity to use video skills, tools, and processes to communicate, entertain, inform, analyze and/or illustrate a topic, idea, subject, or concept. An extremely powerful and ubiquitous medium, video production has great potential, strengths, and limitations that should be understood by all.

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.

ELIGIBILITY

Participants are limited to one (1) team of two to six (2-6) members per chapter, one (1) entry per team.

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. A deduction of five (5) points will be incurred for exceeding the time limit.
- C. Participants have forty-eight (48) hours, beginning at the event orientation meeting, to complete the entire production.
- D. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.



ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

Entries may be submitted to the TSA video library after the conference.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program.
- B. Participants must submit a LEAP Leadership Resume prior to receiving the onsite problem materials and information.
- C. The event coordinator distributes the materials, information, directions, and deadlines to each team.
- D. Each team supplies its own video production and editing equipment to complete its production. Entries will be submitted on a 12cm DVD suitable for viewing on a stand-alone DVD player. It is recommended to use a DVD-R recordable DVD.
- E. Entries are reviewed by evaluators. Neither students nor advisors are present at this time.
- F. Participants shoot their footage, which must be appropriate for the TSA community, only at officially sanctioned conference locations, as described by the event coordinator. Teams are not allowed to shoot in sleeping rooms, restrooms, restaurants, or elevators/escalators. Participants may not disturb any event in progress, enter a restricted evaluation area, interrupt a conference function, or participate in behavior unbecoming of a conference participant. At the event meeting, the event coordinator will explain any further shooting restrictions on the specific property. **Failure to follow these instructions will result in disqualification.**
- G. Semifinalists will be determined and posted by the CRC.
- H. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- I. The LEAP interview will last a maximum of five (5) minutes.
- J. Ten (10) finalists are announced at the awards ceremony.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

 Read the General Rules and Regulations section 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 stand-alone DVD player. It is recommended to use a DVD-R recordable DVD.
- B. All entries become the property of TSA, Inc. and will not be returned after judging.
- C. Teams must include two to six (2-6) individuals.
- 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 documentation materials are turned in to the event coordinator. Documentation materials (comprising "a portfolio") are required and should be placed and secured in a **clear front report cover**. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Purpose and description of video; one (1) page
 4. A shot log used in production planning to aid with shot selection and shot type for each scene; one (1) page
 5. Two (2)-column script detailing specific audio and video cues that must correlate with the video; pages as needed
 6. List of video equipment and software used in the development of the video; one (1) page
 7. List of references that includes sources for materials; pages as needed
 8. If all images and audio used in the entry are original, a statement to verify that is required; one (1) page
 9. Completed and signed Student Copyright Checklist (see Forms Appendix or TSA website)
- I. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the



team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the completed video production, the accompanying documentation, and the LEAP requirements. Depending on the stated purpose, videos are judged on story concept, artistic and/or social value, camera technique, transition and video pace, as well as technical attributes, creativity and organization, and the overall effect of the solution. The video also should incorporate the specified prop(s) and dialogue presented during the event meeting. Portfolios should be complete, well written, and professional in organization and appearance. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Actor
- 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
- C. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. One (1) stopwatch per group of evaluators
 - 7. Marking pens, three (3)
 - 8. Results envelope
 - 9. Envelope for LEAP Leadership Resumes
 - 10. LEAP Interview Judging Protocol
- B. Tables and chairs for evaluators
- C. Computer capable of reading a DVD, and a monitor, as needed
- D. Extension cords (25' minimum length), as needed

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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-specific criteria, including required props and dialogue. Ensure that all participants understand regulations regarding equipment allowed, behavior, deadlines, and submission requirements. Collect the LEAP Leadership

Resume from each team. Prior to the event meeting, the coordinator should tour the conference facilities and develop a list of restricted areas and/or specific restrictions for the event. This list should be shared with the event manager prior to the event meeting. The coordinator should mention at the event meeting that teams must be courteous to all guests in common areas or designated filming areas.

- D. Check in the completed entries at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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/ID# number on each DVD and portfolio. Do not use a sticker (with the ID#) on the DVD; use a marking pen to record the ID number on the DVD. Secure the entries in the designated area.
- F. One (1) hour before the judging is scheduled to begin, meet with evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- G. Evaluators independently assess the entries.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- 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) entries. The top five (5) entries from each group advance to the semifinalist round.
- J. Semifinalists will be determined and posted by the CRC.
- K. Inspect the area in which the interviews are to take place. Ensure that there is a table and seating for participants and evaluators.
- L. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before semifinalist interviews begin.
- M. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length. Evaluation of the



semifinalist event entries can take place at a separate time (before/after the interviews) in order to allow time for judges to view and score the videos/documentation.

- N. Evaluators independently assess the semifinalist entries, and determine the ten (10) finalists and their ranking. Evaluators discuss and break any ties.
- O. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.

Participant/Team ID# _____

ON DEMAND VIDEO

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The portfolio is present.
- The video is playable.
- The 2-column script is present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Portfolio (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation H (X1)	The portfolio is unorganized and/or is missing three or more components.	The portfolio is adequately organized, with most, if not all, components included.	All components are included and the quality of the content and organization are clearly evident.
Purpose and description (X1)	The purpose and description are poorly written, and/or unclear.	The purpose and description are explained appropriately, and are adequately effective.	Clearly and concisely written, the purpose and description are completely effective and compelling.
Script (X1)	The script is not in the correct two-column format, and/or it is missing key attributes, such as character dialogue, nonverbal cues, etc.; the script is unorganized, and there is inconsistent spacing.	The script contains most key attributes and is correctly formatted; overall the script follows the video production.	The script is concise, fluid, and all of its attributes correlate clearly with the video production.

SUBTOTAL (30 points)

Record scores in the column spaces below.

Production (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Camera handling (X1)	Serious problems with focus, steadiness, and framing are evident.	Most shots are clearly focused and framed, with adequate close-ups included.	Steady and creative shots that enhance the video are utilized, and excellent close-ups are included.
Lighting (X1)	Numerous shots are improperly lit; bleaching, shadows, or unbalanced conditions may be evident in some shots; there is no evidence of an attempt to correct problems.	Most shots are properly lit, either through ambient lighting or the use of techniques to correct poor lighting conditions.	All shots are well lit, either through ambient lighting or the use of techniques to correct poor lighting conditions.



Production (continued) (100 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Audio (X1)	Audio may be unclear, distorted, or washed out from poor signal-to-noise ratio; there is evidence of the use of a built-in camera microphone that detracts from the message.	The audio is clear, with consideration given to a good signal-to-noise ratio; background or ambient noise may occasionally be a distraction.	The audio is clear and recorded with good signal-to-noise ratio, displaying skillful microphone choice, placement, and technique.
Continuity and pacing (X2)	The story sequencing is confusing; shots are too long or “clipped,” with edit points appearing “glitchy.”	The pace and timing are well structured; clips move along and tell the story, with moderate use of transitions.	Shots logically pace the story along in an interesting way, with an excellent and purposeful use of transitions.
Video effectiveness (X2)	The video does not meet project goals, presents an unclear message, and/or is sloppy overall.	The video topic is presented with insights; the video adequately meets the objective.	The video is clearly focused, with a rich variety of supporting material.
Aesthetics and artisanship (X1)	The work is unorganized and sloppy.	The work provides an organized and logical presentation of essential issues.	The work provides an exemplary use of layout and design principles to logically communicate important data.
Use of required props (X1)	Props incorporated in the video appear as an afterthought.	Props incorporated in the video add some artistic value and tend to further the plot.	Props are integral to the production’s plot and artistic value.
Use of required dialogue (X1)	The line of dialogue is not well incorporated in the production, and/or the dialogue is not in sync with the plot.	The line of dialogue is adequately incorporated and somewhat essential to the production’s plot.	The line of dialogue is communicated effectively and is integral to the production’s plot.
SUBTOTAL (100 points)			

A time violation (a deduction of five [5] points) will be incurred for exceeding the sixty (60)-second time limit for the length of the video. Record the deduction in the space to the right.

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation G and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (150 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



PHOTOGRAPHIC TECHNOLOGY

OVERVIEW

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 then utilize graphic editing software to prepare a single final image as a solution to an on-site prompt. The current year's theme will be posted on the TSA website under Competitions/Themes and Problems.

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.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entry and submit a LEAP Leadership Resume 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.



The major emphasis for this event is the quality of the images captured, processed, and documented.

- D. Each semifinalist must have a digital camera, access to a computer with photo editing software, and a method to transfer the images to the computer for editing (such as a media reader), which they must bring to the second stage of the semifinal round. Semifinalists also must bring two (2) USB flash drives to compete in the semifinalist round of the event. Each USB flash drive should be labeled with the participant's ID number and the name of the competition.
- E. During the first stage of the semifinalist round, the event coordinator distributes to each semifinalist the description of the semifinalist assignment and provides specific directions (including the location and reporting time) for the second stage of the event. The coordinator will also provide additional information about any restrictions photographers may have at the property.
- F. Semifinalists use the assigned time for the first stage to capture images of conference events and activities that depict the semifinalist assignment. Any type of image typical of responsible news reporting and publication is considered appropriate.
- G. Participants capture their images, which must be appropriate for the TSA community, only at officially sanctioned conference locations, as described by the event coordinator. Teams are not allowed to capture images in sleeping rooms, restrooms, restaurants, or elevators/escalators. When the coordinator distributes the semifinalist assignment, further explanation about any additional restrictions at the property will be addressed.
NOTE: Failure to follow instructions from the event coordinator will result in disqualification.
- H. Semifinalists may not disturb any event in progress, enter a restricted evaluation area, interrupt a conference function, or participate in behavior unbecoming of a national participant in any event.
- I. For the second stage of the semifinalist round, semifinalists report to the location provided by the event coordinator at the specified time with their camera, images, and computer with graphic editing software installed.
- J. During this stage, semifinalists will use graphic editing software (e.g., Lightbox, Photoshop, Fireworks, etc.), to edit their images and select one (1) image they will submit as their solution to the on-site assignment. Semifinalists should edit the image as necessary to achieve the desired result; a copy of the original image and the edited copy must be saved to both USB flash drives.



- K. Semifinalists also should prepare a statement, which contains the following information, about the final image:
1. Camera make (Nikon, Canon, Panasonic, Sony, etc.)
 2. Camera model (CoolPix, Rebel, 5D, etc.)
 3. F-stop at which the photograph was taken
 4. Exposure time
 5. ISO speed
 6. Focal length
 7. A brief description of the image, how the photographer interprets it to meet the challenge criteria, and what edits were made to the original image to arrive at the final product should be included. This statement should NOT appear on the same page as the image. The written statement should be no longer than one-half ($\frac{1}{2}$) single-spaced typewritten page. The text should be in a san-serif, 12-point font (such as Arial or Calibri) for easy readability. The statement should be saved to both flash drives, separate from the images.
- L. Semifinalists will be allowed two-and-one-half ($2\frac{1}{2}$) hours to complete the second stage of the semifinalist round. At the conclusion of the allotted time, both USB flash drives (each containing the original image, the final image, and the written statement) are to be turned into the event coordinator for judging.
- M. Immediately following the collection of flash drives, each semifinalist will participate in a LEAP interview that will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Participants submit their photographic images and required documentation as a single, multi-page PDF document on a USB flash drive at the time and place designated in the conference program.
- B. The entry must contain: Five (5) separate images, each no larger than 8" x 10" or no smaller than 3" x 5". Of the five (5) images, two (2) must be color images, two (2) must be black and white images, and one (1) image can be of the participant's choice. Note: Sepia tones, blue tones, or coloring of any type, other than black and white, are counted as color images.



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

- C. Each image submitted should include a word-processed statement no longer than one-half (½) page in length (word processed in a san serif, 12-point font [such as Arial or Calibri] for readability) with the following information:
 - 1. Camera make (Nikon, Canon, Panasonic, Sony, etc.)
 - 2. Camera model (CoolPix, Rebel, 5D, etc.)
 - 3. F-stop at which the photograph was taken
 - 4. Exposure time
 - 5. ISO speed
 - 6. Focal length
 - 7. A brief description of the image, how the photographer interprets it to meet the challenge criteria, and what edits were made to the original image to arrive at the final product. This statement should NOT appear on the same page as the image.
- D. Subjects for each of the images may include (but are not limited to) action shots, still-lifes, product shots, portraits, special effects shots (composites, successive printing, ghost images, sandwiching, silhouettes, etc.), wildlife, landscapes, etc. All images submitted for judging must be the sole work of the individual participant; this includes images used in special effects photography. Participants should include in the image statements detailed information about the process/special effects applied to the image. Any image submitted that combines images must have the unaltered images included in the Resources/References section of the entry.
- E. Each image (none larger than 8" x 10") must be included in the single, multi-page PDF document.
- F. The written statement about the photo should immediately follow the image in the document.
- G. Submitted images must be the work of one (1) student.
- H. Recognizable individuals selected and pictured in the images must give their written consent before the images can be used in this event. (See Photo/Film Consent and Release form.) Should a consent form be deemed unnecessary, it should be replaced with a written statement to explain and verify that no consent was needed or included. All consent forms must be included in the single, multi-page PDF document as described below. **NOTE: If consent forms are missing, the entry will not be judged.**
- I. The single, multi-page PDF document containing the required images and word processed statements must be submitted on a USB flash drive labeled with the name of the competition (PHOTOGRAPHIC TECHNOLOGY) and the participant's ID number.



J. The single, multi-page PDF document should be a finished size of 8½" x 11" and should have the pages in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. Color Image #1 – a single color image no larger than 8" x 10" and no smaller than 3" x 5"; one (1) page
4. A written statement about Color Image #1 containing the information detailed in Regulation C); one (1) page
5. Color Image #2 – a single color image no larger than 8" x 10" and no smaller than 3" x 5"; one (1) page
6. A written statement about Color Image #2 containing the information detailed in Regulation C); one (1) page
7. Black and White Image #1 - a single black and white image no larger than 8" x 10" and no smaller than 3" x 5"; one (1) page)
8. A written statement about Black and White Image #1 containing the information detailed in Regulation C); one (1) page
9. Black and White Image #2 - a single black and white image no larger than 8" x 10" and no smaller than 3" x 5"; one (1) page)
10. A written statement about Black and White Image #2 containing the information detailed in Regulation C); one (1) page
11. Student's Choice Image – image should be no larger than 8" x 10" and no smaller than 3" x 5"; one (1) page
12. A written statement about Student's Choice Image containing the information detailed in Regulation C); one (1) page
13. Consent forms—should a consent form be deemed unnecessary, it should be replaced with a written statement to explain and verify that no consent was needed or included; pages as needed
14. List of resources and references used. Photos used in special effects photos (composite images, ghosted images, etc.) are to be placed in this section and should note the associated photo; pages as needed

All prints used in Photographic Technology should be appropriate for viewing at the national TSA conference. Any entry that includes images depicting inappropriate or unacceptable behavior results in disqualification.

K. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event.

Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on points earned for the required images and documentation, the LEAP requirements, and the semifinalist round during the on-site portion of the event. Scores on required images and the documentation portfolio determine the twelve (12) semifinalists. Points earned through the on-site event determine the final ranking. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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

PHOTOGRAPHIC TECHNOLOGY

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for check-in, two (2)
- C. Evaluators for portfolios, two (2) or more
- D. Evaluators for semifinalist entries, two (2) or more

MATERIALS

- A. Coordinator's packet, containing
 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 2. TSA Event Coordinator Report
 3. List of evaluators/assistants
 4. Pre-populated flash drives for evaluators
 5. Stick-on labels for entries, as needed
 6. Results envelope
 7. Envelope for LEAP Leadership Resumes
 8. LEAP Interview Judging Protocol
- 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 to review semifinalist presentations

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting



who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio, the protective sleeve that holds the USB flash drive sleeve, and the labeling area of the USB flash drive. Collect entries for evaluation and secure them in the designated area.
- E. One (1) hour before the event is scheduled to begin, meet with evaluatorsassistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- F. Evaluators independently assess the entries.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. Evaluators determine twelve (12) semifinalists.
- I. Submit the semifinalist results to the CRC for posting.
- J. Manage the first stage of the semifinalist round and distribute the description of the Photographic Technology semifinalist assignment, specific instructions, and timeline to each semifinalist.
- K. At the completion of the second stage of the semifinalist round, collect USB flash drives. Ensure that each is properly marked with the participant's ID number.
- L. Immediately following the collection of flash drives, each semifinalist will participate in a LEAP interview that will last a maximum of five (5) minutes.
- M. Following completion of the second stage, evaluators review the entries and determine the finalists and their rank order; evaluators discuss and break any ties.
- N. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- O. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

PHOTOGRAPHIC TECHNOLOGY

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Portfolio (a single [multi-page] document in PDF format) is present on a flash drive.
- Consent forms are present in the portfolio.
- Portfolio contains the correct number of images.
- Resources/references list is present in the portfolio.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Portfolio (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Principles and elements of design/composition and creativity (X1)	There is little or no evidence of an understanding or creative use of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).	Images demonstrate some knowledge and creative use of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).	Images clearly demonstrate excellent and creative use of a variety of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).	
Technical quality (X1)	Photos are out of focus; blurriness was unintentional and does not contribute to the overall composition; photos display incorrect exposure values, white balance, and/or range of tones; there is little or no consideration given to lighting and/or special effects.	Photos are in focus; photos display correct exposure values, white balance, and/or range of tones; images exhibit some attention to lighting and/or the use of special effects.	Photo subject(s) are in sharp focus; blurriness is used effectively to enhance the composition; photos display correct exposure values, white balance, and/or range of tones; images are enhanced by attention to lighting and/or the use of special effects.	
Emotional impact (X1)	The images are flat and lack emotional depth; viewers are not drawn into the scene; images do not clearly convey the theme/challenge.	The images show some emotional depth; viewers make an emotional connection with the images/pictures and are drawn into the scene or learn something from the subject(s); images convey the competition theme/challenge.	The images show emotional depth; viewers make an instant emotional connection with the pictures and are drawn into the scene or learn something from the subject(s); images clearly convey the competition theme/challenge.	



Portfolio (continued) (50 points)			
Written statements (X1)	A written statement may or may not accompany each photo, and/or the statement includes only some of the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length), and/or an explanation of the relevance of the image to the challenge is not present and/or is written poorly.	A written statement accompanies each photo; the statement includes most of the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length); an explanation of the relevance of the image to the challenge is included.	A written statement accompanies each photo; the statement includes the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length); an explanation of the relevance of the image to the challenge is presented in a clear and concise manner.
Resources/references list (X1)	A reference list is present, but graphic and/or software packages used are not mentioned, and/or MLA format is not used, and/or the citations are inadequate.	A reference list is present and the primary software packages used are included; MLA format is used for an adequate number of resources.	Detailed and concise resources/references are provided; all software packages used are included; MLA format is used for the citations.
SUBTOTAL (50 points)			

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

Indicate the rule violated: _____

Semifinalist Challenge (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Principles and elements of design/composition and creativity (X1)	There is little or no evidence of an understanding or creative use of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).	Images demonstrate some knowledge and creative use of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).	Images clearly demonstrate excellent and creative use of a variety of compositional elements (line, shape, form, value, space, texture, color, framing, emphasis, balance, unity, contrast, movement/rhythm and pattern/repetition).
Technical quality (X1)	Photos are out of focus; blurriness was unintentional and does not contribute to the overall composition; photos display incorrect exposure values, white balance, and/or range of tones; there is little or no consideration given to lighting and/or special effects.	Photos are in focus; photos display correct exposure values, white balance, and/or range of tones; images exhibit some attention to lighting and/or the use of special effects.	Photo subject(s) are in sharp focus; blurriness is used effectively to enhance the composition; photos display correct exposure values, white balance, and/or range of tones; images are enhanced by attention to lighting and/or the use of special effects.
Emotional impact (X1)	The images are flat and lack emotional depth; viewers are not drawn into the scene; images do not clearly convey the theme/challenge.	The images show some emotional depth; viewers make an emotional connection with the images/pictures and are drawn into the scene or learn something from the subject(s); images convey the competition theme/challenge.	The images show emotional depth; viewers make an instant emotional connection with the pictures and are drawn into the scene or learn something from the subject(s); images clearly convey the competition theme/challenge.

Semifinalist Challenge (continued) (60 points)			
Written statements (X1)	A written statement may or may not accompany each photo, and/or the statement includes only some of the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length), and/or an explanation of the relevance of the image to the challenge is not present and/or is written poorly.	A written statement accompanies each photo; the statement includes most of the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length); an explanation of the relevance of the image to the challenge is included.	A written statement accompanies each photo; the statement includes the photo's meta data (camera make/model, f/stop, exposure time, ISO speed, focal length); an explanation of the relevance of the image to the challenge is presented in a clear and concise manner.
LEAP Leadership Resume/Interview See Regulation K and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (60 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (110 points)

Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____	Signature: _____



PREPARED PRESENTATION

A slide is a single page of a presentation. Collectively, a group of slides may be known as a slide deck or a slide show. In today's digital age, a slide most commonly refers to a single page developed using a presentation program, such as Microsoft PowerPoint or Apple Keynote. A slide deck would be multiple slides created for a presentation.

OVERVIEW

Participants have the opportunity to develop and deliver an oral presentation using a digital slide deck on an assigned topic provided on-site.

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 five (5) minutes is allowed for set-up.
- D. At the conclusion of a presentation, participants must have all devices ready to exit the room within three (3) minutes.
- E. A time deduction (noted in the rubric) will be incurred for not adhering to any time designations/restrictions.
- F. The semifinalist LEAP interview will take place immediately following each semifinalist presentation and will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the National TSA Dress Code section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program to sign up for a presentation time and submit a LEAP Leadership Resume.
- B. Participants report to the designated area to receive the assigned topic for the presentation. The assigned topic will be given to the participants at one (1) hour intervals based on the participants' presentation time.
- C. Participants report to the holding area, as stated in the conference program, fifteen (15) minutes prior to the assigned presentation time.
- D. The event coordinator introduces each participant by number and in order of scheduled times. The schedule allows time for set-up and removal of equipment.
- 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 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.
- F. A semifinalist list in random order is posted.
- G. Semifinalists report to the event area at the time and place stated in the conference program. Each semifinalist will sign up for a presentation time.
- H. Semifinalists will present on the same topic as in the preliminary round and will follow the same presentation guidelines as above.
- I. The semifinalist LEAP interview will take place immediately following each semifinalist presentation and will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

 Tips for success from past top placers include these:

- Use eye contact, gestures, and a comfortable and clear speaking style to enhance the presentation.
- Be creative with fresh, unique ideas.



Read the General Rules and Regulations section 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 given to participants twenty-four (24) hours prior to their presentation time.
- C. The presentation must include the use of a digital slide deck.
- D. The slide deck must include a minimum of five (5) slides.
- 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, including a laptop computer and projector. If a participant is using equipment that requires electricity, s/he must bring a 25' extension cord.
- G. A table (approximately six feet [6'] long) and a projection screen 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. Set-up time begins when the participant is called into the room and ends when the participant is ready to deliver the presentation; takedown time begins when the presentation is concluded and ends when the participant has all devices ready to exit the room. The presentation time begins when the presentation begins and ends when the presentation is concluded.
- I. **Participants will not be permitted to compete without an electronic device for presentation.**
- J. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based upon the quality of the presentation, appropriate use of a slide deck, and LEAP requirements. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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 preliminary round of presentations, two (2) or more per heat/event room
- C. Evaluators for the semifinalist round of presentations, two (2) or more, preferably those who did NOT judge the initial round
- D. Timekeeper, one (1) per heat/event room for the preliminary round and one (1) for the semifinalist round

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stopwatch, one (1) per event room
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Prepared sign-up list indicating ten (10)-minute intervals for each preliminary heat to accommodate all registered participants
- C. Prepared sign-up list indicating fifteen (15)-minute intervals for the semi-finalist round
- D. Assigned theme (to be distributed twenty-four [24] hours before the assigned presentation time), one (1) copy per participant and evaluator
- E. Tables and chairs for two (2) evaluators and one (1) timekeeper per heat/event room
- F. Chairs for audience for semifinalist round
- G. Table for participant use, approximately 6' long, one (1) per heat/event room
- H. Projection screen, one (1) per heat/event room
- I. Podium, one (1) per heat/event room

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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. Set up the projection screen.
- C. One (1) hour before the event is scheduled to begin, meet with evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- E. Begin the event at the scheduled time and check the entry list. In order to compete, participants must be on the entry list or must have approval of the CRC. Collect LEAP Leadership Resumes from students during the initial event time sign-ups at the time and place stated in the conference program. Participants who do not submit the required individual resume are not permitted to compete.
- F. Participants will sign up for heats according to the time provided in the conference program. Participants who do not report to sign up for heats may be disqualified. Any exceptions must be approved by the CRC.
- G. Participants will report to the designated time and place stated in the conference program to receive the topic for presentation. Topics will be given to participants twenty-four (24) hours prior to presentation times. It is the participant's responsibility to report to the assigned location to receive the topic.
- H. At the scheduled time, take the first participant to the event room and provide five (5) minutes for set-up of equipment. The event coordinator or assistant introduces each participant by entry number only. No nametags that give any indication of the hometown, school, or chapter are allowed.
- I. Approximately every ten (10) minutes, the coordinator or designated assistant sends a participant to the event coordinator or assistant in the event room.



- J. The participant is allowed three (3) minutes to remove all equipment.
- K. Following the last participant's presentation, the evaluators determine the twelve (12) semifinalists, making adjustments for time penalties.
- L. Submit semifinalist results to the CRC for posting.
- M. Repeat the presentation process above for scoring the semifinalist round. Include an additional five (5) minutes per time slot (semifinalist round only) to allow for each semifinalist to participate in the semifinalist LEAP interview immediately following their semifinalist presentation.
- N. Evaluators determine the ten (10) finalists and their ranking, and discuss and break any ties.
- O. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- P. If necessary, manage security and the removal of materials from the event area.

Participant/Team ID# _____

PREPARED PRESENTATION

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- A slide deck is present.
- Items required to execute the slide deck are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Content (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Introduction (X1)	The introduction is weak, with little effort made to highlight and/or generate interest and enthusiasm for the topic.	The introduction is adequate and creates a general level of interest.	The introduction is effective, stimulating, and inspires observers.
Body (X1)	The body of the presentation is poorly organized; the content does not properly cover or represent the topic theme.	The body of the presentation is somewhat clear and effective and creates an interesting premise.	The body of the presentation speech is clear, effective, and delivered in an exceptionally interesting manner; the presentation is memorable.
Conclusion (X1)	The conclusion fails to summarize or clarify the information provided in the presentation.	The conclusion adequately summarizes the content and theme of the presentation topic.	The conclusion is effective, interesting, and memorable; it fully brings finality to the presentation.
SUBTOTAL (30 points)			

Record scores in the column spaces below.

Stage Presence (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Appearance (X1)	Participant's appearance is unprofessional, sloppy, and inappropriate.	Participant's appearance is adequate, appropriate, and somewhat professional.	Participant's appearance is exceptional, appropriate, and professional.
Confidence (X1)	Participant appears nervous during presentation; poor posture, poor eye contact, and lack of confidence are evident.	Participant is generally poised, displays eye contact, and is confident, with little sign of nervousness.	Participant "commands" the room, and is exceptionally poised, confident, and positive.
Articulation (X1)	Participant conveys an inconsistent use of proper grammar, word pronunciation, and acceptable pitch and tone.	Participant generally uses proper grammar and pronunciation, and varies the use of tone and pitch.	Smooth and effective articulation, proper grammar, correct pronunciation, and varied tone and pitch are used throughout the speech.
SUBTOTAL (30 points)			



Organization (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Effectiveness and quality of presentation (X1)	The presentation is poorly prepared, not interesting, and not representative of the stated theme.	The presentation is adequate, and the observer can generally understand the theme.	The presentation is exceptional and memorable; the observer can easily understand and relate to the theme.
Organization (X1)	The presentation is difficult to follow or understand.	The presentation is adequately organized and delivered.	The presentation is organized and easy to follow; the delivery is exceptional.
Quality of the slide deck (X1)	The presentation slide deck is of minimal quality; slides are unprofessional and/or inappropriate and do not enhance the content of the presentation; the participant does not have the minimum number of slides required.	The presentation slide deck is adequate; the slides generally relate to the theme of the presentation; the participant has used the minimum number of slides required.	The slide deck is exceptional and enhances the theme and content of the presentation without distracting the observers from the overall content of the presentation; the participant exceeds the minimum number of slides required.
Use of the slide deck (X1)	The participant reads from the slide deck; the use of the slide deck detracts from the overall presentation; the participant struggles with transitions between slides while delivering the presentation.	The participant tends to rely on the slide deck for much of the presentation; the participant adequately handles transitions between slides while delivering the presentation.	The participant effectively uses the slide deck to enhance the overall presentation; transitions between slides are smooth, effective, and well-timed.
			SUBTOTAL (40 points)

Time Deductions

One (1) point per ten (10)-second interval is to be deducted for speaking under the three (3) minutes or over the five (5) minutes allotted for the presentation. The same one (1)-point per ten (10)-second interval penalty applies to more than five (5) minutes for set up and three (3) minutes for take down. Presentation time commences when the presenter begins speaking.

Total time for presentation		Presentation deduction	
Total time for set-up		Set-up deduction	
Total time for take down		Take down deduction	
TOTAL TIME DEDUCTIONS			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation J and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (120 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



PROMOTIONAL DESIGN

OVERVIEW

Participants have the opportunity to use computerized graphic communications layout and design skills in the production of a promotional resource for TSA.

Participants produce an original multi-piece marketing portfolio to be used for TSA chapter recruitment, or as an introductory packet for new TSA advisors/teachers. This promotional packet would be mailable and would include four to five (4-5) separate and different items. The packet must provide details about TSA, its history, its co-curricular relationship with Engineering and Technology pathway courses, its membership guidelines and instructions for joining, the competitive events program, signature events, service projects, STEM connections, leadership training activities, and sample chapter membership recruitment items. Portfolio examples might include: a pamphlet, post card, letter, small poster, business card, and a PDF of a color graphic for branding promotional gifts. The complete portfolio must demonstrate a unity of design that repeats throughout the included items.

Semifinalists respond to an on-site problem with a solution that demonstrates their ability to use a computer to design and edit materials for in-house publication.

ELIGIBILITY

Participants are limited to three (3) individuals per state, one (1) entry per individual.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Semifinalists have a thirty (30)-minute set-up time before the on-site portion of the event, and two (2) hours to complete the on-site problem.
- C. The semifinalist LEAP interview will take place immediately following the completion of the on-site portion of the event and will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries and submit a LEAP Leadership Resume at the time and place stated in the conference program.
- B. Entries are reviewed by evaluators.
- C. Semifinalists report to the event area at the time and place stated in the conference program for the on-site component of the event.
- D. Semifinalists are allowed thirty (30) minutes to set up before the event.
- E. Semifinalists are provided with an on-site publishing problem and are allowed two and one-half (2½) hours to complete their entry.
- F. A final color output of each semifinalist is saved as a PDF file, turned in on a USB flash drive, and judged.
- G. The semifinalist LEAP interview will take place immediately following the completion of the on-site portion of the event and will last a maximum of five (5) minutes.
- H. All winning entries, digital and hard copy, become the property of TSA, Inc.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

 Templates are not to be used for this event. Publications are to be created “from scratch” and should incorporate the basic principles of design for all components.

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

 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."

REGULATIONS

- A. The four to five (4-5) printed promotional publication items (chosen by the designer) must follow these guidelines:
1. One of the submitted items must be the folder that contains the rest of the portfolio. The folder must measure 9 ½" x 12" closed, and 19" x 12" open. It may be produced by the designer or purchased from an office supply store. It should be made of cardstock with a cover image (either printed directly to the cover or printed on a separate sheet of paper, then glued to it to simulate the look of the final product). The main presentation folder is made and glued from a single sheet, providing two (2) four-inch (4") glued pockets on the inside bottom of the folder, business card slit, and reinforced sides. The pockets will hold the remaining items for judging.
 2. The printed items contained in the folder should be designed in color (three [3] minimum) on white 8½" x 11" paper (maximum size).
 3. Colored paper, preprinted, or designed paper may not be used.
 4. Clip art may be used. However, no templates may be used. **If it is determined that the product submitted is a template, the entry will be disqualified.**
 5. Items that may be considered for the additional three (3) or four (4) portfolio items might include: a pamphlet, post card, letter, small poster, business card, PDF of graphic for branding promotional gifts such as mugs or a t-shirt; (these actual items are not submitted).
 6. The complete packet should demonstrate a unity of design that repeats throughout the portfolio.
 7. The content of all items must be appropriate for viewing at the national TSA conference. Any entry that includes images depicting sex, drugs, tobacco, gangs, cults, etc., will be disqualified.
 8. The folder containing all the elements is identified using only the participant's identification number.
 9. Entries should not include any other identifying information. (The name of the chapter may only be identified when the challenge calls for promotion of the local chapter, as in fundraising.)
 10. Proof of permission to use copyrighted image(s) must be included (see Student Copyright Checklist in the Forms Appendix or on the TSA website). A release form must be present if photographs of individuals are used (see Photo Consent and Release form). Clipart must be documented. Failure to do so results in DISQUALIFICATION. (No permission is needed for the use of the TSA logo by affiliated chapters.) These items must be included in the folder.

- B. Semifinalists supply their own computer work station with USB port, power strip/surge protector, extension cord, and software for the on-site portion of the event. A laptop computer is recommended. Any semifinalist who does not provide these items will not be allowed to compete in the on-site event.
1. The entry is identified using only the participant's conference identification number. The purpose of the on-site entry is to create a printable product.
 2. Clip art may be used. No templates may be used.
 3. All on-site work is developed, saved as a PDF file on a USB flash drive, and submitted using only the participant's identification number.
 4. Semifinalists leave the event room only with permission from the event coordinator.
 5. The on-site entry should be saved and submitted when the work is completed and/or when time elapses.
 6. All entries become the property of TSA, Inc. and will not be returned after judging.
- C. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the criteria outlined in the official rating form. The LEAP requirements will also be evaluated. 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

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 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 DESIGN

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for portfolios, two (2) or more
- C. Evaluators for semifinalist round, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio. Secure the entries in the designated area.

- E. Meet with 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 to determine twelve (12) semifinalists.
- G. Submit semifinalist results to the CRC for posting.
- H. 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.
- I. 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.
- J. Semifinalists report for the on-site problem.
- K. Begin the event at the scheduled time by closing the doors and checking the entry list. All semifinalists and evaluators should be in the room at this time. Semifinalists not present may be disqualified. In order to compete, semifinalists must be on the posted entry list or must have approval of the CRC.
- L. Evaluators monitor the participants during the on-site activity.
- M. Each participant (using his/her individual ID number) will save the final product in a PDF file on a USB flash drive.
- N. Immediately following the collection of flash drives, each semifinalist will participate in a LEAP interview that will last a maximum of five (5) minutes.
- O. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- P. Evaluators will determine the ten (10) finalists and their ranking, and discuss and break any ties.
- Q. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- R. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

PROMOTIONAL DESIGN

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Entry is submitted in the designated folder (9½" x 12" when closed).
- Entry contains the required four to five (4-5) items.
- No obvious templates are present in the entry.
- All permission forms are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Static Entry (110 points)

Promotional Folder Cover (Cover Graphic) (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Appropriateness of graphic design (X1)	The design has little connection to or is inadequate in conveying the essence of the design challenge; logo(s) are poorly placed or of poor quality.	The design has a general connection to the challenge; logo(s) are present.	The design is appropriate and effectively addresses the theme; logo(s) are present and appropriately placed.
First impressions <i>(sharp, clean edges of graphics and fonts; entry is clear of smudges, smears, pencil or other extraneous marks)</i> (X1)	The design is messy and/or damaged, and leaves an unfavorable impression.	The design is neat, with adequate attention to detail.	The design is eye-catching and compelling; attention to detail is very evident.
Use of color (X1)	The graphic has less than three colors; colors used clash or distract from the graphic.	The graphic has three colors, and they generally work well together.	The effective choice of colors creates an appealing graphic.
Fonts <i>(readable, have eye appeal, appropriate dimension and placement)</i> (X1)	Font choice, size, and placement are ineffective in creating an aesthetically pleasing design.	Font choice and size are appropriate and incorporated somewhat effectively in the design.	Font choice and size are appropriate, and the location of text is effectively incorporated in the aesthetics of the design.

SUBTOTAL (40 points)

Record scores in the column spaces below.



Promotional Folder Contents (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Appropriateness of graphic products (X1)	The included graphic products have little connection to the intent of the folder's target audience.	The included graphic products are appropriate to the intended audience and have generally useful content.	The included graphic products clearly connect with the intention of the promotional packet and its intended audience, providing useful, related content
Unity of design (X1)	The complete packet has little obvious unity of design throughout the included items.	The complete packet demonstrates a general sense of unity of design throughout the included items.	The complete packet demonstrates an obvious unity of design that repeats throughout the included items.
Incorporation of graphic design principles <i>(alignment, contrast, unity, white space, balance, and proportion)</i> (X1)	The included graphic products incorporate or embody few, if any, of the design principles.	The included graphic products are somewhat pleasing but may be missing one or two design principles; the products have a layout that is generally aesthetically pleasing.	The included graphic products are clearly unique and aesthetically pleasing, with all graphic design principles incorporated in the overall design and layout.
Grammar/spelling (X1)	Many misspelled words are present, and grammar is poor.	Spelling and grammar are mostly correct.	Proper grammar and spelling are evident.
Graphic images (X1)	Images have little connection to the essence of the challenge; logo(s) are poorly placed or of poor quality.	Images have general connections to the challenge; logo(s) are present.	Images are appropriate and effectively address the challenge; logo(s) are present and appropriately placed.
Use of color (X1)	Graphic has less than three colors; colors used clash or distract from the graphic.	Graphic has three colors, and they generally work well together.	The effective choice of colors creates an appealing graphic.
Fonts <i>(readable, have eye appeal, appropriate dimension and placement)</i> (X1)	Font choice, text size, and placement are ineffective in creating an aesthetically pleasing design.	Font choice is appropriate and incorporated somewhat effectively in the design.	Font choice and size are appropriate, and the location of text is effectively incorporated in the aesthetics of the design.
SUBTOTAL (70 points)			

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

Indicate the rule violated: _____

Semifinalist Problem (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Layout and design (X1)	The design inadequately incorporates the design principles of alignment, consistency, contrast, unity, or white space.	The design incorporates most design principles; overall layout is generally aesthetically pleasing.	An aesthetically pleasing design is provided, with all design principles incorporated in the layout and design.
Solution to project (X1)	Three or more attributes of the solution's criteria are missing.	Most attributes of the solution's criteria are included.	All attributes of the solution's criteria are evident.

Semifinalist Problem (continued) (40 points)			
Effectiveness (X1)	The solution inadequately conveys the intended message, and/or it contains unrelated text/graphics.	The solution conveys the intended message appropriately, and it uses text and/or graphics generally well.	The solution's message is easily understood and interpreted, with exceptional use of related graphics and text.
Originality (X1)	The finished product is ordinary, plain, and unimaginative in design.	The finished product shows some effort to be imaginative and original.	The final product is truly unique and shows creativity.
SUBTOTAL (40 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation C and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.) **TOTAL (170 points)**

Comments:	
I certify these results to be true and accurate to the best of my knowledge.	
<u>Evaluator</u>	
Printed name: _____	Signature: _____

OVERVIEW

Scientific and Technical Visualization (SciVis) is the representation of complex scientific and/or technical concepts in a visual form. Participants use either 2D or 3D computer graphics tools and design processes to communicate, inform, analyze, and/or illustrate a STEM topic, idea, subject, or concept.

ELIGIBILITY

Participants are limited to three (3) teams per state, one (1) entry per team. Collaborative work is strongly encouraged, but an individual may participate solo in this team event.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. The visualization is to be two to four (2-4) minutes in length. There will be a five (5)-point deduction for each fifteen (15) seconds under two (2) minutes or over four (4) minutes.
- 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.
- E. The semifinalist LEAP interview will be conducted as part of each semifinalist presentation and will last a maximum of five (5) additional minutes.

Scientific visualization has come a long way in recent years. With this event TSA members can demonstrate their skills in using sophisticated, advanced technology to illustrate ideas of their choice.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries and submit a LEAP Leadership Resume at the time and place stated in the conference program.
- B. Visualizations must be turned in on a USB flash drive in either an MPEG or Quick Time file format.
- C. Each visualization must advance automatically once it has been opened and started by evaluators.
- D. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.
- E. No more than two (2) representatives from each semifinalist team may report to the event area for the presentation at the time and place stated in the conference program.
- F. Each semifinalist team explains its portfolio to the evaluators, discussing the purpose, value, research and design, and development process of its work.
- G. The semifinalist LEAP interview will be conducted as part of each semifinalist presentation and will last a maximum of five (5) additional minutes.

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

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. A USB flash drive must be submitted with the documentation materials at check-in. Documentation materials (comprising a "portfolio") are required and should be secured in a clear front report cover. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. USB flash drive (containing the visualization) in a secure holder or sealed sleeve at the front of the portfolio.

2. Title page with the event title, the conference city and state, and the year; one (1) page
 3. Table of contents; pages as needed
 4. Purpose of visualization; one (1) page
 5. Hand-sketched storyboard that documents the flow and progression of the visualization with written notes; special effects, audio cues, dialogue, transitions, and scene duration should be incorporated into the storyboard; pages as needed
 6. Written description of what the visualization illustrates or demonstrates; one (1) page
 7. 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.
 8. Permission letters for copyrighted material; pages as needed
 9. List of software and hardware used in the development of the visualization; one (1) page
 10. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); one (1) page
 11. Completed and signed Student Copyright Checklist (see Forms Appendix or TSA website); one (1) page
- B. The visualization may be an animation, such as a biological cell dividing or a group of static images that explain the concept. No posters or models will be accepted. Live action video is not allowed, including "whiteboard" style entries. All work must be included in the portfolio and on a USB flash drive.
- C. The visualization is not to be under two (2) or over four (4) minutes in length. There will be a five (5)-point deduction for each fifteen (15) seconds under the minimum time or for each fifteen (15) seconds over the maximum time.
- D. Sound may accompany the visualization.
- E. 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. **NOTE: Failure to follow this procedure results in disqualification.** Absolutely no purchased content may be used in any part of the visualization. (Purchased content includes, but is not limited to, texture, models, and royalty free music.)

- F. The semifinalist presentation team may involve no more than two (2) members.
- G. All entries become the property of TSA, Inc. and will not be returned after judging.
- H. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Please refer to the official rating form for more information.

NOTE: The LEAP requirements will also be evaluated.

NOTES

You can learn more about SciVis by visiting this web site:

www.ncsu.edu/scivis

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Computer animator
- Game designer
- Instructional technologist
- Software engineer

SCIVIS

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistant for check-in, one (1)
- C. Evaluators, two (2) or more for initial review of entries
- D. Evaluators, two (2) or more for semifinalist interviews

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol
- B. Tables for entries
- C. Tables and chairs for initial evaluators
- D. Tables and chairs for semifinalist evaluators and participants
- E. Extension cords and power-bars with protection for evaluators, as needed

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 evaluation of entries is to begin, meet with 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. Check in the entries and the LEAP Leadership Resumes at the time stated in the conference program. Notify the event manager immediately of any team that is not on the coordinator's report. Determine if the team in question is properly registered.
 - E. Evaluators independently assess the entries.
 - F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
 - G. The number of evaluators depends upon the number of entries. Each group of evaluators averages its scores to determine the top four (4) entries from the initial group of twenty (20) entries. The top four (4) entries from each evaluator group are then reviewed by a different group of evaluators. These four (4) scores are then averaged to determine the twelve (12) semifinalist teams to be interviewed.
 - H. Evaluators determine the twelve (12) semifinalist teams. Submit the semifinalist results to the CRC for posting.
 - I. 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, the semifinalist team representatives will explain their work and answer any questions the evaluators may ask. As part of the semifinalist presentation, semifinalists will participate in a LEAP interview that will last a maximum of five (5) additional minutes.
 - J. Evaluators independently assess the twelve (12) semifinalists to determine the ten (10) finalists and their ranking. Evaluators discuss and break any ties.
 - K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
 - L. Collect all USB flash drives and portfolios and give them to the event manager.
 - M. If necessary, manage security and the removal of equipment and materials from the area.

Participant/Team ID# _____

SciVis

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The portfolio is present.
- The USB flash drive is present.
- The visualization is playable.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Portfolio (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation F (X1)	The portfolio is unorganized and/or missing three or more components.	The portfolio has most components and is adequately organized.	All components are present, and content and organization are clearly evident.
Purpose and description (X1)	The purpose and description of the visualization idea generation are unclear.	The purpose and description are explained appropriately, and adequately.	The purpose and description of the visualization are clear and concisely written, and compelling.
Storyboard (X1)	The storyboard is sloppy, seems to have been thrown together after the creation of the visualization, and/or it does not correlate with the visualization.	The storyboard is drawn appropriately and largely correlates with the completed visualization.	The storyboard is of exceptional aesthetic and artistic quality and clearly correlates with the visualization.
SUBTOTAL (30 points)			

Visualization (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Communication of visualization (X1)	It is difficult to understand the solution being communicated; an illogical explanation is presented.	The solution is communicated generally adequately.	The solution is communicated in an organized, clear, and concise manner.
Creativity (X1)	The visualization lacks creativity; no, or very few, design principles are integrated in the visualization.	Some elements of creativity are expressed, with most design principles integrated.	The visualization exudes creativity; essential design principles and elements are integrated.
Aesthetics and artisanship (X1)	Unorganized, sloppy work is evident; the visualization seems to be an afterthought and/or thrown together.	A largely organized presentation of layout and design principles is evident.	An exemplary use of layout and design principles to logically communicate important data is evident.

Record scores in the column spaces below.

Visualization (continued) (50 points)

Graphical representations (X1)	Graphical representations do not help to clarify visualization, or they are of little significance to the project.	Graphical representations are appropriate and help supplement the visualization by providing clarity to the project.	Graphical representations are of excellent quality; and clarify abstract concepts.	
Originality (X1)	The visualization lacks imagination, originality, and artistic detail.	The visualization is somewhat effective, inventive, and inspiring.	The visualization is inspiring, inventive, resourceful, and motivating.	
SUBTOTAL (50 points)				

Time Deductions

There will be a five (5) point deduction for each fifteen (15) seconds under the minimum time or each fifteen (15) seconds over the maximum time allowed for the visualization.

Total time for visualization	
Visualization time deduction	
TOTAL TIME DEDUCTION	

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

Indicate the rule violated: _____

Semifinalist Presentation (60 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
Organization (X1)	The team/individual seems unprepared and unorganized for the presentation.	The team/individual is somewhat prepared and organized in its presentation.	The presentation is well organized and any questions asked by judges are answered concisely.	
Knowledge (X1)	The team/individual seems to have little understanding of its chosen topic.	The team/individual has a generalized understanding of its chosen topic.	There is clear evidence of a thorough understanding of the chosen topic.	
Articulation (X1)	The presentation is full of illogical thoughts that lack clarity.	The presentation is somewhat logical, and/or clear, and concise.	A concise, logical, clear explanation of the entry is given.	
Delivery (X1)	The team/individual is verbose and/or uncertain in the presentation; posture, gestures, and lack of eye contact diminish the delivery.	The team/individual is somewhat well-spoken and clear in the presentation; posture, gestures, and eye contact result in an acceptable delivery.	The team/individual is well-spoke and distinct in the presentation; posture, gestures, and eye contact result in a polished, natural, and effective delivery.	
LEAP Leadership Resume/Interview See Regulation H and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.	
SUBTOTAL (60 points)				

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (140 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



SOFTWARE DEVELOPMENT

OVERVIEW

Participants have the opportunity to use knowledge of cutting-edge technologies, algorithm design, problem-solving principles, effective communication, and collaborative teamwork to design, implement, test, and document a software development project. The project should have educational or social value.

ELIGIBILITY

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

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. Teams are allowed up to five (5) minutes for their presentation.
- C. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Teams submit their documentation, sign up for a presentation time, and submit LEAP Leadership Resumes at the time and place stated in the conference program.
- B. Teams report to the event area at the time and place stated in the conference program for their scheduled presentation.

- C. Teams have no more than five (5) minutes to set up their project. Teams must provide all necessary hardware to demonstrate their project. This may include a laptop/desktop computer, mobile device(s), monitor, computer mouse, and/or 20' extension cord. The setup should not exceed 2' x 2' x 2'.
- D. National TSA will NOT provide wireless Internet. Students may provide Internet access using a hotspot from a mobile device; however, students should have an alternate presentation plan in case access is unavailable.
- E. No more than three (3) team members may present to the judges, for up to five (5) minutes. Teams should give a live demonstration of the functionality of their project, describe the design process, and discuss the value of the project. Judges may ask questions after the presentation is finished.
- F. Teams should remove their project and equipment from the area at the completion of their presentation.
- G. Semifinalists will be determined and posted by the CRC.
- H. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- I. The LEAP interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Documentation materials (comprising “a portfolio”) are required and should be secured in a **clear front report cover**. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Research about the problem; one (1) page
 4. Description of the team’s project, including: the problem, solution for the problem, and an explanation of the project’s educational and social value; up to two (2) pages
 5. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member(s)

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



- responsible, and comments (see Forms Appendix or TSA website); one (1) page
6. Documentation of the use of a software development process, including the following:
 - a. Project requirements; one (1) page
 - b. High-level software design; one (1) page
 - c. Testing, including code output and desired results; pages as needed
 - d. End-user product documentation; pages as needed
 7. Team's self evaluation (of its work) and the project's future prospects; one (1) page
 8. List of references used for the project
 9. A completed copy of the Student Copyright Checklist (see Forms Appendix or TSA website)
- B. All portfolios and presentations become the property of TSA, Inc., and will not be returned after the event.
- C. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the quality of work and overall benefit showcased in the participant portfolio, and the LEAP requirements. Teams will be judged on the technical skill exhibited in their project, the ability to demonstrate and describe their software design process, and how well the problem identified is solved by the software project. Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

Graphic designer
Software engineer



SOFTWARE DEVELOPMENT EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for portfolios, two (2) or more
- C. Evaluators for semifinalist presentations, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Chairs, as needed for judging
- C. Stopwatch for timing semifinalist presentations

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- D. Check in the entries and LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio. Position entries for evaluation and viewing by judges. Secure the entries in the designated area.
- F. Inspect the area in which the presentations are to be held. There must be a table and seating for at least five (5) people.
- G. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.
- H. Conduct presentations. Evaluators should be sure to ask questions.
- I. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- J. Evaluators determine the ranking of the ten (10) finalists in rank order, and discuss and break any ties.
- K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- L. Manage security and the removal of materials from the area.



Participant/Team ID# _____

SOFTWARE DEVELOPMENT			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.			
<input type="checkbox"/> Portfolio is present. <input type="checkbox"/> Student Copyright Checklist is present and complete. <input type="checkbox"/> Completed LEAP Leadership Resume is present. <input type="checkbox"/> ENTRY NOT EVALUATED			
Documentation (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio components See Regulation A (X1)	The portfolio is unorganized and/or is missing three or more components.	The portfolio is somewhat organized; most components are adequate.	The portfolio is organized, complete, and includes all required components.
Research (X1)	The research is inadequate, and/or very few credible sources are referenced.	The research is adequate, and it includes a few credible sources.	The research is comprehensive, and credible resources are included.
Description of project (X1)	A description of the project, including an explanation of the problem and the solution for the problem, is poorly presented.	A description of the project, with an explanation of the problem and its solution, is adequate.	A description of the project is clear, concise, and fully addresses the problem and solution.
Plan of Work log and self-evaluation (X1)	The Plan of Work log and the self-evaluation are incomplete and/or missing key components.	The Plan of Work log and self-evaluation are mostly complete, but they may be overgeneralized.	The Plan of Work log and the self-evaluation are complete and concisely written; they include the reflections of all team members.
SUBTOTAL (40 points)			

Record scores in the column spaces below.

Software Design (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Software coding practices (X2)	The project was inadequately developed in terms of general software coding practices (requirements, design, implementation, and testing).	The project was developed following most general software coding practices (requirements, design, implementation, and testing).	The project was extremely well developed and followed general software coding practices (requirements, design, implementation and testing).
Complexity (X1)	The software design exhibits little complexity; it appears as a "bare bones" effort.	The software design exhibits some degree of complexity.	The software design is complex, resulting in a highly functional product.

Software Design (continued) (60 points)			
Creativity (X1)	The work lacks creativity; it is evident there was little original thought in developing the project.	Some elements of creativity are expressed; the solution is somewhat original.	The work exudes creativity; the product is highly original.
Technical skill (X1)	Little technical skill is exhibited in the software; the levels of software development are not fluid and/or are illogical.	A beyond-basic degree of technical skill is exhibited in the software's design and construction; the software flows somewhat effectively from level to level.	The software exhibits mastery of software design skill that few at this level possess; the software flow is constant and logical.
Effectiveness (X1)	The software design does not appropriately provide a solution to the intended problem.	The design loosely provides a solution to the intended problem, but it doesn't fully address the problem presented.	The solution to the problem is clear in the software design; the solution is at the forefront of software creation.
SUBTOTAL (60 points)			

Presentation (60 points)			
CRITERIA	Minimal performance 0-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	The team seems unprepared and unorganized for the presentation and questions from judges.	The team is prepared for its presentation to judges and answers questions adequately.	The team's presentation is logical, organized, and effective; the team answers judges' questions well.
Knowledge (X1)	Team members seem to have very little understanding of the concepts in their project; they provide vague answers to judges' questions.	All team members have a general understanding of the concepts discussed and answer questions adequately.	There is clear evidence that all team members have a thorough understanding of the concepts presented in their project.
Articulation (X1)	The team's presentation is full of illogical thoughts that lack understanding and clarity.	The team's presentation is somewhat logical, clear, and concise.	The team provides a concise, logical, and clear explanation of its project.
Delivery (X1)	The team is verbose and/or uncertain in its presentation/interview; participants' posture, gestures, and lack of eye contact diminish the delivery.	The team is somewhat well-spoken and clear in its presentation/interview; participants' posture, gestures, and eye contact result in an acceptable delivery.	The team is well-spoken and distinct in its presentation/interview; participants' posture, gestures, and eye contact result in a polished, natural, and effective delivery.
Team participation (X1)	Only one team member communicates with judges; there is no participation from other team members.	Team members participate generally equally and adequately understand the concepts of the project.	All team members fully understand the concepts of the project and share an equal role in answering judges' questions.
Software demonstration (X1)	Team members are unable to successfully demonstrate their software product.	Team members are able to partially demonstrate the functionality of their software product.	Team members are successful and effective in their project demonstration.
SUBTOTAL (60 points)			

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

Indicate the rule violated: _____



Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 0-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation C and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (180 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



STEM CAREERS

OVERVIEW

During the school year, participants work to develop a specific skill and complete a thorough project about the skill's relationship to a STEM career area of their choice. Participants research and prepare documentation related to the skill and prepare a video that demonstrates the skill. Semifinalists participate in an on-site interview to discuss the skill developed.

ELIGIBILITY

Participants are limited to six (6) individuals per state.

TIME LIMITS

- A. Participants report to the event area at the time and place stated in the conference program to submit their entries.
- B. The length of the video (submitted as part of the entry) is limited to a maximum of three (3) minutes. A deduction of five (5) points will be incurred for exceeding the three (3)-minute time limit.
- C. Semifinalist interviews are limited to ten (10) minutes.
- D. The semifinalist LEAP interview will be conducted immediately following each semifinalist interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. In preparation for this event, participants thoroughly research and document the skill selected, document either a job shadowing experience or an internship related to the career pathway for the skill selected and developed, and prepare a video demonstration of the skill.
- B. Participants report to the event area at the time and place stated in the conference program to check in their documentation portfolio, video (on a USB flash drive), and LEAP Leadership Resume. The video must be in Mpeg format. The length of the video is limited to a maximum of three (3) minutes. A deduction of five (5) points will be incurred for exceeding the three (3)-minute time limit.
- C. Entries are reviewed by evaluators to determine the twelve (12) semifinalists. Neither students nor advisors are present at this time.
- D. A semifinalist list in random order is posted. Semifinalists will sign up for an interview time at the time and place listed in the conference program.
- E. Semifinalists report to the event area at the time and place stated in the conference program to participate in an interview.
- F. The LEAP interview will be conducted immediately following the semifinalist event interview and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. Documentation materials (comprising a "portfolio") are required and should be placed and secured in a [clear front report cover](#). The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, and the year; one (1) page

2. Table of contents; pages as needed
 3. Description of a STEM-related job shadow/internship experience and the outcome of the experience; three (3) single-sided pages
 4. Description of research about the skill selected and developed and the related STEM career pathway; two (2) single-sided pages
 5. Skill demonstration video (a maximum of three [3] minutes) saved in Mpeg format on a USB flash drive and included in a protective sleeve
 6. Log sheet(s) documenting the job shadowing or internship experience that details activities and skills experienced; pages as needed
- B. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Evaluation is based on the participant's documentation, video, log sheet(s), LEAP requirements, and interview (semifinalists only). Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The 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.

STEM CAREERS

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants, two (2)
- C. Event evaluators, two (2) or more for entries
- D. Event evaluators, two (2) or more for semifinalist interviews

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluatorsassistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol
- B. Interview questions appropriate for careers
- C. Tables and chairs for participants
- D. 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 packet. Review the event guidelines and check to see that enough evaluatorsassistants have been scheduled.
- B. Check in the entries and the LEAP Leadership Resumes at the time stated in the conference program.
- C. 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.
- D. Meet with evaluatorsassistants 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.

- E. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- F. Evaluators independently assess the entries and determine twelve (12) semifinalists.
- G. Submit semifinalist results to the CRC for posting.

Interview

- A. Inspect the area(s) in which interviews will be held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.
- B. Meet with your evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- C. Each student is interviewed by the evaluators. The LEAP interview will be conducted immediately following the semifinalist event interview and will last a maximum of five (5) additional minutes.
- D. Evaluators determine the ten (10) finalists and their ranking, and discuss and break any ties.
- E. Review and submit the finalist results and all related forms in the results envelope to the CRC room.
- F. If necessary, manage security and the removal of materials from the area.

Participant/Team ID# _____

STEM CAREERS

2017 & 2018 OFFICIAL RATING FORM
HIGH SCHOOL
Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The portfolio is present.
- The video is present on a USB drive.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Job Shadowing/Internship Documentation (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Portfolio components See Regulation A (X1)	The portfolio is unorganized and/or is missing three or more components.	The portfolio is somewhat organized; most components are adequate.	The portfolio is organized, complete, and includes all required components.
Experience description (X1)	The participant fails to describe the experience (shadowing/internship), and/or how the opportunity was discovered, and/or interest and relevance to a STEM career.	The participant describes how the opportunity was identified, the reason for interest, the overall experience, and the experience outcome.	The participant clearly describes the opportunity, the reason for interest in the career area, skills involved, the relationship of the experience to a career in a STEM field, and the experience outcome.
Relationship to skills (X1)	The participant largely fails to identify any skills involved in the career area, and does not adequately discuss the day-to-day functions of a person in this STEM career.	The participant provides a general explanation of the connection between the functions of the job experience and STEM skills.	The participant clearly relates the job experience to STEM skills.
Writing mechanics (X1)	The writing contains distracting errors in punctuation, spelling, and grammar.	Punctuation, spelling, and grammar are generally correct, with few errors.	Punctuation, spelling, and grammar are correct with no errors evident.
SUBTOTAL (40 points)			

Skill Research (20 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Research description (X1)	The description of the research is too brief and lacks appropriate details about the selected skill.	The description of the research about the selected skill is adequate.	The description of the research about the selected skill is clear, concise, and conveys understanding of the skill.

Record scores in the column spaces below.



Skill Research (continued) (20 points)			
Appropriate information (X1)	The information is largely not relevant to the skill and how it relates to fulfilling job requirements for the selected STEM career.	The information is adequately relevant to the skill and how it relates to job requirements for the chosen STEM career.	The information relates the skill to career job requirements; all information is appropriate for the STEM career choice.
SUBTOTAL (20 points)			

Video (40 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Skill demonstration (X4)	The skill demonstrated does not reflect connection to the selected career.	The skill demonstration is basic and adequate; it reflects a connection to the career.	The demonstration is well-planned and provides an in-depth look at the chosen career and how the skill connects to the career.
SUBTOTAL (40 points)			

A five (5)-point deduction will be incurred for exceeding the three (3)-minute time limit for the video. Record the deduction in the space to the right.

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

Indicate the rule violated: _____

Semifinalist Interview (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participant seems unorganized for the interview.	Participant is generally organized for the interview.	The interview with evaluators is well organized and logically completed.
Knowledge (X2)	Participant seems to have little understanding of the concepts in the project and provides vague responses to interview questions.	Participant has a generalized understanding of the concepts in the project and answers questions fairly well.	Participant shows clear evidence of a thorough understanding of the concepts in the project; interview answers are thorough and reflective.
Articulation (X1)	The interview is full of illogical thoughts that indicate lack of understanding.	The interview is somewhat logical and easy to understand and follow.	The interview provides a clear, concise, and easy-to-follow description of the project.
LEAP Leadership Resume/Interview See Regulation B and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (60 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (160 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



STRUCTURAL DESIGN AND ENGINEERING

OVERVIEW

Participants work as a team to build a designated structure. Teams apply the principles of structural design and engineering through research, design, construction, destructive testing, and assessment to determine the design efficiency of the structure.

Details about the structure and information related to it will be posted on the TSA website under Competitions/Themes and Problems. The on-site semifinalist problem will be a variation of the pre-conference problem posted on the TSA website.

ELIGIBILITY

Teams must seek the mentorship of a structural engineer as they plan and prepare for this competition.

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

SAFETY EYEWEAR

Participants are required to wear safety-approved eyewear during the on-site phase of this event. Prescription eyewear will need to have side shields to be considered safety eyewear. Should a team member remove the eyewear and fail to replace it, s/he will be reminded once. If there is a second infraction, the team will be asked to leave the competition. Sunglasses are not suitable.

TIME LIMITS

- A. Pre-built structures must be started and completed during the current school year.
- B. On-site structures (semifinalist teams only) must be started, completed, and checked in during the three (3) hours allowed for design and construction.
- C. Semifinalist participants with time conflicts must present a written explanation of the conflict to the event coordinator at least one (1) hour before the construction time noted in the conference schedule. Work must begin during the time scheduled for the event.

- D. Immediately following the completion of the semifinalist structure, each semifinalist team will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PRE-BUILT STRUCTURE REGULATIONS

- A. All work must be completed by the team members only, and then verified by the team's chapter advisor using the *Team Verification* form, found on the TSA website under Competitions/Themes and Problems.
- B. Students must complete and provide a copy of the *Analysis and Assessment* form, found on the TSA website under Competition Themes and Problems, for their submitted structural design.
- C. Teams must provide a full-size, three (3)-view (front, top, and right end) drawing (hand or computer-generated) of their structure.
- D. The structure and any related required materials (structure, drawings, the verification form, and the analysis and assessment form) must be submitted at the designated time and place noted in the conference program.

PROCEDURE FOR ON-SITE DESTRUCTIVE TESTING OF PRE-BUILT STRUCTURES

- A. Open viewing of the on-site destructive testing of pre-built structures is allowed.
- B. All structures will be assessed (using the evaluation rubric) prior to the on-site destructive testing.
- C. Destructive testing will be completed using structural testing equipment, as designated by TSA.
- D. When the destructive testing is completed, a list of twenty (20) semifinalist teams will be posted.

- E. The twenty (20) semifinalist teams will take part in the on-site problem, which will feature the construction and destructive testing of a structure similar to the pre-conference structure.

PROCEDURE FOR SEMIFINALIST ON-SITE CONSTRUCTION AND DESTRUCTIVE TESTING

 Participants should practice with various types of adhesives to determine the one they prefer.

 Teams are encouraged to create jigs and fixtures that will assist them with the assembly and construction.

- A. Twenty (20) semifinalist teams, of two (2) members each, report to the event area at the time and place stated in the conference program.
- B. Participants must provide and wear safety glasses for this portion of the event.
- C. Participants are required to provide their own tool box (with identification [school name, address, and advisor cell phone number]), which should not exceed twenty (20) inches (508 mm) length x ten (10) inches (254 mm) width x ten (10) inches (254 mm) height. The box must contain all items needed to fabricate the solution. The following is a suggested list:
1. Cutting devices; NONE may be electric
 2. Adhesives
 - a. aerosol and electric applicators are not allowed
 - b. a bottle of Uncure or Debonder is recommended
 3. Temporary fastening devices
 - a. straight pins
 - b. clamps
 - c. tape
 4. A cutting surface that prevents table-top marring (required)
 5. Rulers, straightedges, and/or measuring scales
 6. Abrasives sheets, sponges, boards
 7. Marking devices (pens, pencils, etc.) and sharpener
 8. Sheet of wax paper, as large as is needed for the competition (required)
 9. Pliers, wrenches, nut drivers, as needed
 10. Safety glasses and side shields, as required
 11. Jigs and fixtures to assist with assembly and construction
- D. Teams will be issued a packet of construction materials to use for fabrication of the designated structure. These materials will be withheld until the team's design drawing is complete.
1. Planning and fabrication supplies (these materials may **not** be part of the structure submitted for testing):
 - a. Drawing paper with $\frac{1}{4}$ " or $\frac{1}{8}$ " grids for sketching the structure
 - b. Pin board
 - c. A sheet of wax paper
 - d. Structure label

- E. Teams will be seated by a monitor.
- F. The design problem will be explained and a list of directions for the construction process will be provided.
- G. Teams will be allowed thirty (30) minutes to review the problem and create a sketch/drawing of their solution.
- H. During the building of the team's structure, construction regulations must be observed.
- I. Participants may leave early, but they must complete check-out as directed.
- J. All work stops at the coordinator's signal.
- K. Teams return all supplied items as directed, and clean and clear their work stations.
- L. Teams must identify their structure with only their team ID number, using the label provided.
- M. Immediately following the completion of the semifinalist structure, each semifinalist team will participate in a LEAP interview that will last a maximum of five (5) minutes.
- N. Structures are allowed to dry in a secure area until destructive testing time.
- O. Structures are checked for rules violations and weighed before testing.
- P. Destructive testing is completed by evaluators and is open for spectator viewing.
- Q. When all testing is completed, the greatest failure weight of all tested structures is recorded on the rating form, the efficiency rating of individual structures is calculated, and ranking is determined.
- R. Teams that fail to comply with the coordinator or monitor directions, after one (1) warning, will be issued a penalty of 20% of the team's total score.
- S. Videotaping of the destructive testing of a structure is permitted, but only by a participant or representative of a respective team.
- T. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview.

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



The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

PROCEDURE FOR EVALUATION OF STRUCTURES

- A. All structures are weighed before testing and the weight is recorded on the evaluation rubric.
- B. A designated structural testing device will be used for testing each structure.
- C. A specific testing block or attachment may be necessary, depending on the nature of the on-site problem. Any special or unusual configurations for the attachment will be posted with the design problem on the TSA website.
- D. An increasing load is applied to the structure via the test block or attachment until the structure fails.
- E. The failure weight is recorded on the evaluation rubric. (The failure weight is the greatest weight recorded during testing before the failure of the structure.)
- F. The efficiency is determined by the failure weight \times 4.54, divided by the weight of the structure in grams.
- G. The efficiency is rounded off to three (3) decimal places and recorded on the evaluation rubric.
- H. Each team's assessment form is reviewed.
- I. The highest numeric efficiency determines the winner. In case of an efficiency tie, the greatest weight held by the tied entries will determine the winner.
- J. Failure to comply: If a structure fails to comply with any regulation, a penalty reduction of 20% of the greatest weight held in the competition is subtracted from the team's failure weight. (This penalty factor will not be determined until all structures have been tested.)
- K. The LEAP requirements will be evaluated.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Architect
- Civil engineer
- Engineering technician
- Mathematician
- Structural iron and steel work technician



STRUCTURAL DESIGN AND ENGINEERING EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators to judge pre-built structures, two (2) or more, as necessary
- C. Construction monitor, one (1) per twenty teams
- D. A timekeeper
- E. Evaluators to qualify structures after on-site construction, two (2) or more
- F. Destructive test evaluators, two (2) or more
 - 1. One (1) to weigh the structure, record structure weight, and record failure weight
 - 2. One (1) to bring the structure to the testing location, position the structure on the testing device, operate the tester, and then remove and store the structure following testing

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy each for the coordinator and evaluators
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol
- B. Semifinalist team packets provided by TSA containing construction materials and instructions
 - 1. Construction tools per team, to be used and returned to the event coordinator or helpers after constructions:
 - a. Pin board as supplied, but generally a one-foot by two-foot (1' x 2') piece of fiber or foam board
 - b. Grid paper with $\frac{1}{4}$ " x $\frac{1}{4}$ " or $\frac{1}{8}$ " x $\frac{1}{8}$ " grid on 17" x 22" paper for structure sketch (to remain with the completed structure when turned in)
 - c. Wax paper to cover the pin board (to remain with the completed structure when turned in)
 - d. Label for structure

2. Balsa strips and sheets, as specified in the problem statement (on the national TSA website)
 3. Card stock, as specified in the problem statement (on the national TSA website)
 4. Instructions
- C. Testing equipment, provided by TSA
- D. Evaluation and recording equipment
1. Gram scale (3 decimal place calculation)
 2. Tape measure or 2' rule
 3. Evaluation gauges
- E. The testing equipment, selected by the event coordinator, provides a downward pull or force, and records the peak force in pounds.
- F. Site requirements:
1. Construction session
 - a. Tables and chairs suitable for cutting and gluing
 - b. Work area, at least 2' x 3' for each team (suggested space is two [2] teams per 6' x 2' or 8' x 2' table)
 - c. One (1) chair per participant
 - d. Tables for equipment check-out and check-in
 - e. Tables and chairs for evaluators
 - f. Secured area 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. Prepare the structure problem statement (including any necessary related information such as materials to be used for pre-built structures) for posting on the TSA website.
- B. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluatorsassistants have been scheduled.
- C. Check to see that all event equipment and materials have been secured.

- D. One (1) hour before the event is scheduled to begin, meet with 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. Set up check-in for testing of pre-built structures.
- F. Check in the pre-built entries and the LEAP Leadership Resumes at the time stated in the conference program.
- G. Coordinate and manage the on-site testing of pre-built structures, the recording of results, and the determination of the twenty (20) semifinalist teams.
- H. Submit semifinalist results to the CRC for posting.
- I. Assemble semifinalist packets of construction materials and directions for the twenty (20) on-site semifinalist teams.

On-site construction

- 1. This portion of the event is not open to spectators. No individuals other than participants and event personnel will be allowed in the construction area.
- 2. Check-in will begin at the time noted in the conference program and will continue until all teams arriving on time have been checked in and seated. The event will begin at the posted time.
- 3. Both members of a team must be present during check-in.
- 4. No team is allowed to begin late unless its members have complied with the following: Participants with time conflicts must present a written explanation of the conflict to the event coordinator at least one (1) hour before the construction time noted in the conference program. Work must begin during the time frame scheduled for the event.
- 5. Assign team construction locations.
- 6. When all teams are seated, distribute instructions and review these, as well as any details for the assigned structure.
- 7. Teams will be allowed a maximum of three (3) hours to complete their structure. Thirty (30) minutes of this time is allotted for completing the design drawing, and two and one-half (2.5) hours, is allotted for actual construction.
- 8. When a team notifies a monitor that the required sketch is complete, and the monitor confirms this, the team will receive a materials packet and may begin the on-site construction phase of the event.
- 9. No additional supplies are provided during the event.
- 10. Call time at the end of the allotted three (3) hour time frame.
All teams must stop working at this point.

- J. Immediately following the completion of the semifinalist structures, each semifinalist team will participate in a LEAP interview that will last a maximum of five (5) minutes.
- K. Establish the procedure for check-in and recording of finished structures, designate an area for storage, and allow for the return of construction materials.

Team check-out

- 1. Teams must leave their work space clean. Failure to do so will result in a 20% penalty deduction.
 - 2. Teams will check in excess supplies as directed by the monitors.
 - 3. Teams place their structures in the storage area with the sketch as directed by the monitor. The structure must be identified with the team number only (using the label provided in the materials packet).
 - 4. Once check-in is complete, all participants leave the competition area.
 - 5. The structures are secured by the monitor and allowed to dry for a minimum of twelve (12) hours.
- L. Evaluation
- 1. Check all structures for regulations compliance. Structures that are in compliance will be tested without penalty.
 - a. Weigh all structures before testing and record the weight on the evaluation rubric.
 - b. Use the testing device, designated by TSA, to test each structure. (A specific testing block or attachment for the structure may be necessary for the on-site problem.)
 - c. Apply an increasing load to the structure, via the test block or attachment, until the structure fails.
 - d. Record the greatest failure weight on the rubric. This weight is the greatest weight recorded (of all the tested structures) during testing before failure of the structure.
 - e. Determine each structure's efficiency by the greatest failure weight \times 4.54, divided by the weight of the structure in grams; round off the efficiency to three (3) decimal places and record it on the rubric.
 - f. The highest numeric efficiency determines the winner. In the case of an efficiency tie, the greatest weight held by the tied entries will determine the winner.
 - 2. Structures will not be tested if:
 - a. Two (2) or more construction regulations are found to be non-compliant before testing.
 - b. The structure cannot be placed on the tester.



- c. The testing attachment cannot be properly placed within or on the structure.
 - d. Straight pins are left in the structure.
 - e. There is a failure to wear safety eyewear.
 - f. Laminations contain more than two (2) pieces or members that are face to face in the same grain direction.
3. Structures with one (1) construction regulation non-compliance mark will be tested, but a 20% penalty will be noted on the rating form. (The penalty, a 20% reduction of the greatest weight held in the competition, is subtracted from the team's failure weight. This penalty factor will not be determined until all structures have been tested.)
 4. Manage, with assistance from evaluators, the destructive testing of all structures that were not officially tested due to non-compliance.
 5. For participants who violate the rules, the decision either to 1) deduct twenty percent (20%) of the total possible points or 2) disqualify the entry, must be discussed and verified with the evaluators, event coordinator, and CRC manager.
- M. Review and submit the finalist results and all other items/forms in the results envelope to the CRC room.
- N. Semifinalist teams may pick up their structures at a time designated by the event coordinator.

Participant/Team ID# _____

STRUCTURAL DESIGN AND ENGINEERING

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Team of two is present.
- The structure is present and identified.
- The Team Verification form is complete and present.
- The Analysis and Assessment form is complete and present.
- Drawings are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Pre-built Structure (Construction)

Indicate N for noncompliant or C for compliant, for each regulation in the Construction section. One noncompliant mark will result in a 20% deduction; two noncompliant marks will result in disqualification.

Regulation	Noncompliant	Compliant
Length of structure	The length of the structure is greater or less than the designated tolerance of the assigned construction length.	The length of the structure is within the designated tolerance of the assigned construction length.
Width of structure	The width of the structure is greater or less than the designated tolerance of the assigned construction width.	The width of the structure is within the designated tolerance of the assigned construction width.
Height of structure	The height of the structure is greater or less than the designated tolerance of the assigned construction height.	The height of the structure is within the designated tolerance of the assigned construction height.
Plane of abutment (horizontal)	Part of the structure assembly does not meet the designated requirements for the plane of abutment for the assigned structure.	The structure assembly meets the designated requirements for the plane of abutment for the assigned structure.
Placement on abutment	The structure length is not appropriate for testing.	The structure length is appropriate for testing.
Internal clearance	The testing apparatus and rod cannot be placed and passed through the center of the structure to allow for testing.	The testing apparatus and rod pass freely through the center of the structure to allow for testing.



Pre-built Structure (Construction) (continued)				
Laminations	Laminations contain more than two pieces or members face to face in the same direction.		Laminations are correct with no more than two pieces or members glued face to face running in the same direction.	
				DISQUALIFIED
PRE-BUILT STRUCTURE APPROVED FOR TESTING				
Record the mass (weight) of the structure (in grams) prior to testing.				
Record the failure weight in pounds.				
Record the maximum failure rate for all tested structures.				
If only one construction regulation is noncompliant, record a deduction of 20% of the maximum failure weight.				
Adjusted failure weight				
Determine the efficiency (shown to three decimal places) by multiplying the failure weight (or adjusted failure weight, as applicable) by 4.54 and then dividing by the mass (weight) of the structure.				
PRE-BUILT STRUCTURE TOTAL POINTS				

On-site Structure (Qualification)

For the ON-SITE STRUCTURE: Indicate N for noncompliant or C for compliant, in the Qualification and Construction sections below. In the Qualification section, one noncompliant mark will result in disqualification. In the Construction section, one noncompliant mark will result in a 20% deduction; two noncompliant marks will result in disqualification.

Regulation	Noncompliant	Compliant	
Team of two	Only one team member is present.	Both team members are present.	
Safety eyewear	Warnings about eyewear are issued.	No warnings about eyewear are issued.	
Structure identification	The identification sticker is not attached.	The identification sticker is attached.	
Tools and fabrication supplies	Inappropriate tools or supplies are brought to the event.	Appropriate tools and supplies are brought to the event.	
Plane of abutment (horizontal)	Part of the structure assembly does not meet the designated requirements for the plane of abutment for the assigned structure.	The structure assembly meets the designated requirements for the plane of abutment for the assigned structure.	
Placement on abutment	The structure length is not appropriate for testing.	The structure length is appropriate for testing.	
Internal clearance	The testing apparatus and rod cannot be placed and passed through the center of the structure to allow for testing.	The testing apparatus and rod pass freely through the center of the structure to allow for testing.	
Construction pins	Pins are still in place when the structure is submitted.	All pins have been removed from the structure.	
Laminations	Laminations contain more than two pieces or members face to face in the same direction.	Laminations are correct, with no more than two pieces or members glued face to face running in the same direction.	
	TOTAL		TOTAL

On-site Structure (Construction)

Regulation	Noncompliant	Compliant	
Drawing	The required drawing is not submitted.	The required drawing is submitted.	
Length of structure	The length of the structure is greater or less than the designated tolerance of the assigned construction length.	The length of the structure is within the designated tolerance of the assigned construction length.	

On-site Structure				
Width of structure	The width of the structure is greater or less than the designated tolerance of the assigned construction width.		The width of the structure is within the designated tolerance of the assigned construction width.	
Height of structure	The height of the structure is greater or less than the designated tolerance of the assigned construction height.		The height of the structure is within the designated tolerance of the assigned construction height.	
				DISQUALIFIED
				On-site structure approved for testing
				Record the mass (weight) of the structure (in grams) prior to testing.
				Record the failure weight in pounds.
				Record the maximum failure rate for all tested structures.
				If only one construction regulation is noncompliant, record a deduction of 20% of the maximum failure weight.
				Adjusted failure weight
				Determine the efficiency (shown to three decimal places) by multiplying the failure weight (or adjusted failure weight, as applicable) by 4.54 and then dividing by the mass (weight) of the structure.
				ON-SITE STRUCTURE TOTAL POINTS

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation B and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
			SUBTOTAL (20 points)

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)	TOTAL
--	--------------

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.

ELIGIBILITY

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

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. The competition consists of three phases. Phase 1: one (1)-hour setup; Phase 2: fifteen (15)-minute analysis; and Phase 3: two and one half (2.5) hours for problem solution.
- B. The team's captain will be given one (1) hour to set up the team's equipment and reference materials.
- C. Following the set-up time, teams will be given fifteen (15) minutes for problem analysis.
- D. Following the problem analysis time, teams are provided two and one-half (2.5) hours for model development and programming.
- E. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. An orientation meeting for teams will take place at the beginning of the set-up time. Each team selects a team captain prior to the orientation meeting.
- B. The captain checks in and submits a LEAP Leadership Resume for the team during the set-up time meeting by submitting his/her ID# and the team's ID# for the identification of the written and model portions of the event.
- C. The problem and the inventor's log are presented to 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 that simulates 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 use to activate 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 questions during the demonstration.
 2. After evaluators have observed the operation of a team's model, the team leaves the room. The coordinator determines the amount of time permitted for the team's demonstration based on the number of teams and the complexity of the problem.
 3. Evaluation of the solutions takes place without the teams present.
- F. Team members report to the event area at the time and place stated in the conference program to pick up their equipment.
- G. Semifinalists will be determined and posted by the CRC.
- H. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- I. The LEAP interview will last a maximum of five (5) minutes.

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

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Each team provides pencils and scrap paper along with its own materials kit, software, and laptop computer. No reference materials or building cards are allowed. Each team's material kit must be appropriate to build a system that can identify, secure, and move objects, and has light and/or sound outputs. A problem will be developed based on the assumption that every material kit will contain at least:
 1. Optical sensors, two (2)
 2. Touch sensors, two (2)
 3. Motors, two (2)
 4. Audio AND light outputs, two (2) each
 5. Gears, wheels, and axles appropriate to build a motorized vehicle and/or conveyor belt
 6. Balls, blocks, and pegs that can be used as objects to be moved and manipulated
 7. Velcro, tape, clamps and other materials to secure or move the above objects (balls, blocks, and pegs)
- B. Participants provide their own hardware and software systems.
- C. The following definitions are an integral part of the event regulations:
 1. Repeatability—the device is programmed to reset automatically.
 2. Functional control—the device/model must accomplish the task in an efficient manner and be user friendly.
 3. Model-solution—the physical device must simulate the realistic processes used in industry.
 4. Conservation of materials—the model reflects the best use of materials to solve the problem, without being overbuilt.
- D. Programs must be written completely on-site. Use or modification of any programs written prior to the competition will result in disqualification.
- E. An example of a problem for this event is provided below to help students understand and interpret a typical issue common to industry that might be used at a national conference.

A manufacturing company has asked your engineering firm to design an important component in its manufacturing process. The company specializes in the production of cylindrical items. Its manufacturing line is getting “jammed” because multiple cylindrical items are making their way to stations that can handle only one item at a time. Your design must include a “hopper” that will store items as they wait to make their way to a station. When a station is empty, a light should turn on; this will indicate to an operator to press a button that will send one cylinder into the station. After ten (10) seconds, the item will need to be moved to the next hopper, leaving the station empty and signaling the operator to send in another cylinder.

Requirements

- A minimum of three (3) cylindrical items of consistent size and shape must be included.
 - A hopper must store these items until a button is pushed.
 - Only one item can advance when the button is pushed.
 - Ten (10) seconds must pass with the item at a station before it is moved to the next hopper.
 - A light must signal the operator when the station is empty.
 - No additional cylinder can be sent to a station if a cylinder already is in place.
- F. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Teams are evaluated on their written work, model function, programming structure and efficiency, and the LEAP requirements. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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. The description/interpretation of the problem must be completed DURING the problem analysis session.

Description or interpretation of the given problem:

The two parts below are to be completed AFTER the problem analysis session.

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

Directions to evaluators to start the system:



SYSTEM CONTROL TECHNOLOGY EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators, two (2) or more
- C. Assistants, two (2)
- D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stopwatch, one (1)
 - 6. Written problem, one (1) copy per team and evaluator
 - 7. Inventor's log, one (1) copy per team
 - 8. Power strips with surge protectors, and extension cords, as needed
 - 9. Results envelope
 - 10. Envelope for LEAP Leadership Resumes
 - 11. LEAP Interview Judging Protocol
- 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 packet. 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 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, checking the entry list, and collecting LEAP Leadership Resumes from each team. Teams must submit a resume in order to compete. 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.
- E. Secure participants' equipment in the area designated.
- F. At the orientation meeting obtain the team/chapter identification numbers from each team captain.
 - 1. Evaluators 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 may take notes, but evaluation occurs only after all teams have left the event room.
- J. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- K. Semifinalists will be determined and posted by the CRC.
- L. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- M. The LEAP interview will last a maximum of five (5) minutes.
- N. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- O. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

SYSTEM CONTROL TECHNOLOGY			
2017 & 2018 OFFICIAL RATING FORM		HIGH SCHOOL	
Go/No Go Specifications			
Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.			
<input type="checkbox"/> Completed LEAP Leadership Resume is present. <input type="checkbox"/> ENTRY NOT EVALUATED			
Inventor's Log (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Description of problem (X1)	The description is incomplete, and/or it is illogical and unorganized; the description is simply a restatement of the problem's guidelines.	The description includes a logical, but only general, understanding of the problem's guidelines; it restates the guidelines with an overall understanding of the problem.	An organized, logical, and concise description of the problem is provided; it includes all major aspects of the problem's guidelines, as well as original thoughts.
Description of solution and activation instructions (X1)	The team's solution has little correlation with the final system creation; the solution is illogical in terms of the problem's guidelines; the directions to activate the solution are included, but they are incomplete.	The team's solution correlates generally with the final system creation; adequate directions to activate the solution are included.	A strong correlation between the team's written solution and final system creation is provided; the description of the solution is written clearly and concisely; instructions for the solution are included and written concisely.
SUBTOTAL (20 points)			

Solution to Problem (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Realistic simulation (X1)	The simulation is not realistic; it has an abstract design that would be largely ineffective in its intended environment.	The simulation is somewhat realistic and logically designed; it may be adequately effective in its intended environment.	The simulation is realistic and is similar to a system that would be effective in its intended environment.
Dependability of solution (X1)	The solution is not constructed with dependability in mind; when the system is operated, construction pieces fall off, etc.	Most of the parts of the solution are well constructed and dependable.	Every component of the solution is well constructed and dependable; practical construction techniques have been used.
Conservation of materials (X1)	An inefficient use of construction materials is obvious; too many unnecessary materials are incorporated into the design.	Most of the components of the solution are designed with conservation in mind; the construction is generally adequate.	All components of the solution are designed and assembled with conservation of materials in mind; the construction is elegant and not overbuilt.

Record scores in the column spaces below.

Solution to Problem (continued) (60 points)			
Solution to problem (X2)	The solution is missing three or more attributes/criteria, and several do not function as intended.	The solution includes most attributes/criteria, and they function adequately.	The solution includes all attributes/criteria listed in the design details, and all attributes function appropriately and correctly.
Ingenuity and creativity (X1)	The solution and design are unauthentic, complex, and/or do not function as a system.	The solution has some original ideas in its design, and its construction is adequate.	The solution is truly unique and authentic; its construction is concise and designed with simplicity.
SUBTOTAL (60 points)			

Programming Structure (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Programming efficiency (X1)	The software used to program the system is overly complex and inefficient; advanced programming techniques, which would have simplified programming specific tasks, are not included.	The programming software is efficient, with some advanced features that simplify the solution's criteria and/or attributes.	A concise and logical programming application is used that incorporates advanced features to simplify the solution's criteria and/or attributes.
Program structure (X1)	The programming structure is illogical, unorganized, or overly complicated and/or complex; the program does not reset.	There is evidence of an organized programming structure and adequate use of sub-routines; the program resets.	The programming structure is concise and predictable; there is appropriate use of sub-routines where needed; the program resets.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation F and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____



(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (120 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



TECHNOLOGY BOWL

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

OVERVIEW

Participants demonstrate their knowledge of TSA and concepts addressed in the technology content standards by completing a written, objective test; semifinalist teams participate in question/response, head-to-head team competition.

ELIGIBILITY

Participants are limited to one (1) team of three (3) members per chapter. Teams that take the written test and advance to the semifinalist portion of the event must be 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, as well as the LEAP interview that will be conducted prior to the start of the semifinalist tournament and will last a maximum of five (5) minutes.

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.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program. Teams must submit a LEAP Leadership Resume prior to taking the written test.



- 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. Participants must provide their own pencils for the test. The sixteen (16) top-scoring teams qualify as semifinalists. A semifinalist list in random order is posted.
- E. Semifinalist team members and their advisor 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. The LEAP interviews will be conducted immediately prior to the start of the oral event. The interview score will be combined with the team average (taken from the test scores) to determine seeding for the oral event.
- G. Team members are not allowed in the oral event area as observers until after their team has been eliminated from competition.
- H. When instructed to do so, two (2) teams enter the event area and are seated according to instructions.
- I. Teams are paired using the semifinalist teams' flow chart.
- J. Once a team is eliminated, it is out of the oral competition except for the round in which the third and fourth positions are determined.
- K. Questions are drawn from a card file resource bank.
- L. 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.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are

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

responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

A. Written exam

1. Scan-type forms are furnished by the event coordinator.
2. Participant entry numbers (assigned during conference registration) must be entered on the scan form in the space indicated.
3. Participants must stop work immediately when time is called.
4. Should a participant complete the test before the time is allocated, the participant holds the test and remains seated quietly without distracting others. Failure to do so results in disqualification of the participant.
5. All tests must be turned in before leaving the test area.

B. Oral competition

1. The average of the scores of all three (3) team members determines team ranking.
2. Sixteen (16) teams, based on the written test results, are selected as semifinalists.
3. All three (3) members of a semifinalist team must be available to participate at the scheduled time for the oral competition portion 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 to assist in answering a question in the event area. No prompting is permitted.
5. Teams are asked twelve (12) questions, one of which is a bonus question. The bonus question is randomly placed among the twelve (12) questions. Whichever team answers the question prior to the bonus question may answer the bonus question. Teams are told when the bonus question comes up in the set of twelve (12) questions. Questions, including the bonus question, may not be discussed by teams. If a team answers the bonus question correctly, the team is given an additional question to answer. The team may discuss this question. If the bonus question is not answered correctly, participants are not given an additional question.
6. The team member who "buzzes in" to answer a question has five (5) seconds to answer the question without discussion.
7. After a question is read, competing teams have ten (10) seconds to answer. If neither team can answer the question, then another question is read.



8. If a team member “buzzes in” before a question is finished being read, the reader ceases reading and the team member must give the exact answer as printed on the answer card to earn points.
- C. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

- A. Written exam: Scores on a test of fifty (50) multiple choice questions determine the winners of the written exam and the semifinalist teams for the oral competition portion of the 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 a 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. Teams are asked twelve (12) questions, one of which is a bonus question. The bonus question is randomly placed among the twelve (12) questions. Whichever team answers the question prior to the bonus question may answer the bonus question. Teams are told when the bonus question comes up in the set of twelve (12) questions. Questions, including the bonus question, may not be discussed by teams. If a team answers the bonus question correctly, the team is given an additional question to answer. The team may discuss this question. If the bonus question is not answered correctly, participants are not given an additional question.

6. 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. There will be no additional bonus questions.

NOTE: The LEAP requirements will be evaluated.

 Trophies are awarded to the top three (3) individuals in the written competition and the top three (3) teams in the oral competition.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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. Proctors for written exam, one (1) for every twenty (20) participants
- D. Timekeeper for oral exam, one (1)
- E. Scorekeeper for oral exam, one (1)
- F. Moderator for oral exam, one (1)
- G. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Sufficient copies of the written test (tests must be returned immediately following the event)
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Written test
 - 1. Stopwatch for timekeeper
 - 2. Tables and chairs in sufficient quantity to accommodate all participants
 - 3. 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 Semifinalist Teams Flow 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 packet. Review the event guidelines and check to see that enough evaluatorsassistants 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 evaluatorsassistants 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.
- E. Distribute the scannable answer forms with the help of evaluators. Direct 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 should be 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 scan 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 papers 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.

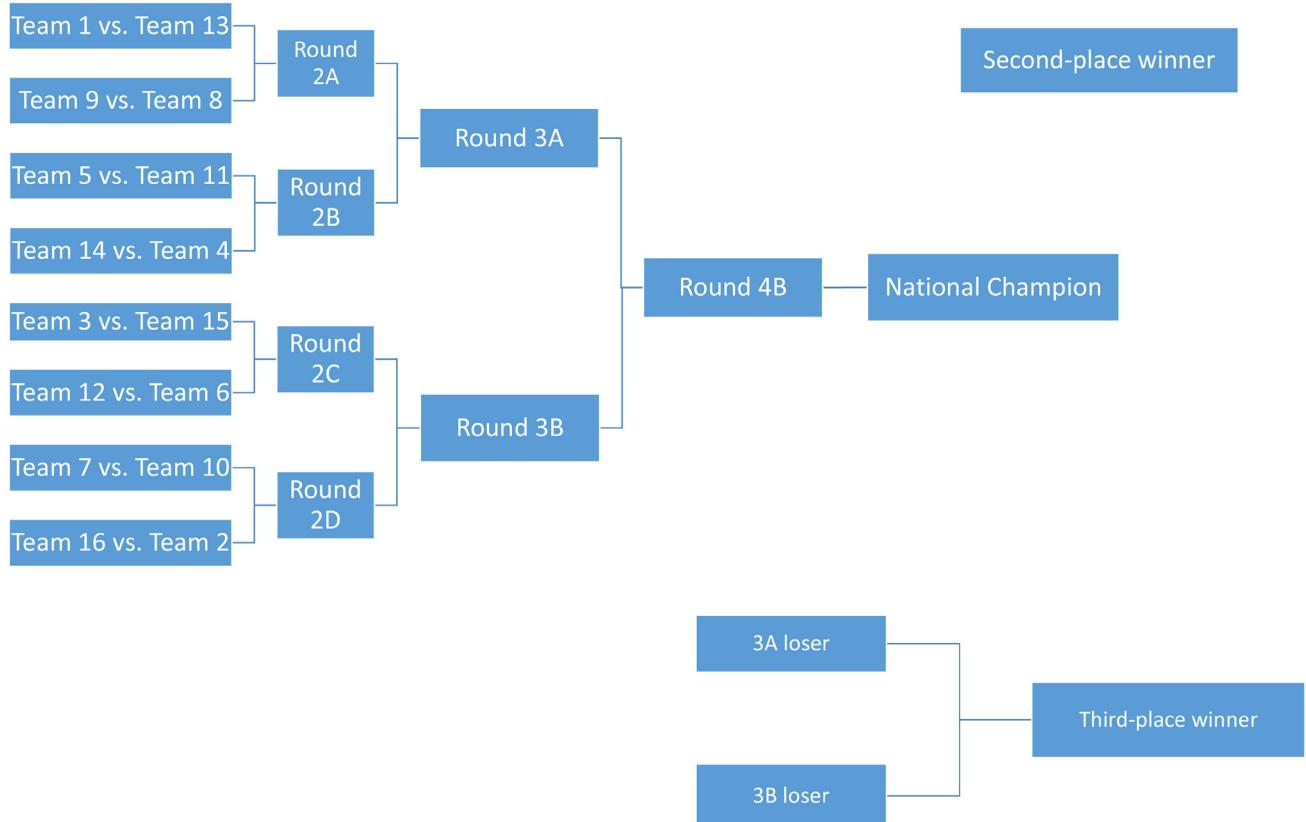
- I. Determine the sixteen (16) semifinalist teams for the written test.
- J. Submit the semifinalist results to the CRC for posting.
- K. Run the oral component of the event as described in the Procedure section.
- L. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.



TECHNOLOGY BOWL

SEMIFINALIST TEAMS FLOW CHART

HIGH SCHOOL



Note to evaluators: This is a single elimination format (semifinalist teams ONLY).

Team 1	Team 9
Team 2	Team 10
Team 3	Team 11
Team 4	Team 12
Team 5	Team 13
Team 6	Team 14
Team 7	Team 15
Team 8	Team 16

TECHNOLOGY BOWL								
2017 & 2018 OFFICIAL RATING FORM				HIGH SCHOOL				
Competition round # _____			Scorekeeper's signature: _____					
Team # _____ (A)		Team # _____ (B)						
Record the written test scores of each of the three (3) team members (for team A and B) in the boxes below to determine the team average. Record the team average in the column space to the right.								
Team member 1	(A) ::	(B) ::	Team member 2	(A) ::	(B) ::	Team member 3	(A) ::	(B) ::
Evaluator should place an X in the box beside the team that gives the correct response to the question and an O beside the team that gives an incorrect response. The points assigned for each response should be recorded in the blue column to the right.								
SUBTOTAL (50 points)								
Question #	Points							
1.	+10 for correct, -5 for incorrect response							
2.	+10 for correct, -5 for incorrect response							
3.	+10 for correct, -5 for incorrect response							
4.	+10 for correct, -5 for incorrect response							
5.	+10 for correct, -5 for incorrect response							
6.	+10 for correct, -5 for incorrect response							
7.	+10 for correct, -5 for incorrect response							
8.	+10 for correct, -5 for incorrect response							
9.	+10 for correct, -5 for incorrect response							
10.	+10 for correct, -5 for incorrect response							
11.	+10 for correct, -5 for incorrect response							
12.	+10 for correct, -5 for incorrect response							
Bonus question	(+5 for answering the bonus question correctly; no penalty for answering the bonus question incorrectly)							
Additional question	(+10 for answering the additional question correctly; no penalty for answering the additional question incorrectly)							
SUBTOTAL (135 points)								
Team # _____		Team # _____						
Team # _____		Team # _____						
Team # _____		Team # _____						
Team # _____		Team # _____						
Team # _____		Team # _____						
Team # _____		Team # _____						
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Team # _____		Team # _____						
Team # _____		Team #						



Tie Breaker Questions									
1.					Team #			Team #	
2.									
3.									
4.									
5.									
SUBTOTAL									

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation C and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (145 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



TECHNOLOGY PROBLEM SOLVING

OVERVIEW

Participants use their skills in problem solving to develop a finite solution to the stated problem provided on site. Participants work as a team to provide the best solution, which is measured objectively.

ELIGIBILITY

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

TIME LIMITS

- A. The allotted time for design and construction of the solution is two (2) hours.
- B. Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.



For this event, participants are required to provide their own tool box, with TSA-suggested supplies.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area and submit a LEAP Leadership Resume at the time and place stated in the conference program.
- B. The problem, evaluation criteria, and materials are distributed.
- C. Participants are required to provide their own tool box (with identification [school name, address, and advisor cell phone number]), which should not exceed twenty (20) inches (508

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

mm) length x ten (10) inches (254 mm) width x ten (10) inches (254 mm) height. The box must contain all items needed to fabricate the solution/entry. The following is a suggested list:

1. Cutting devices; NONE may be electric
 2. Adhesives
 - a. aerosol and electric applicators are not allowed
 - b. a bottle of Uncure or Debonder is recommended
 3. Temporary fastening devices
 - a. straight pins
 - b. clamps
 - c. tape
 4. A cutting surface that prevents table top marring (required)
 5. Rulers, straightedges, and/or measuring scales
 6. Abrasives sheets, sponges, boards
 7. Marking devices (pens, pencils, etc.) and sharpener
 8. Sheet of wax paper, as large as is needed for the competition
 9. Pliers, wrenches, nut drivers, as needed
 10. Safety glasses and side shields (required)
- D. **Participants are required to provide and wear safety-approved eyewear for this event.** Prescription eyewear will need to have side shields to be considered safety eyewear. Should a team member remove his/her eyewear, 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.
- E. Each student also is required to bring the following items:
1. one (1) roll $\frac{3}{4}$ " masking tape
 2. twelve (12) 3" x 5" index cards
 3. twelve (12) Popsicle sticks or tongue depressors
 4. six (6) $8\frac{1}{2}$ " x 11" sheets of printer paper (20-pound bond)
 5. fifteen (15) sheets of $8\frac{1}{2}$ " x 11" cardstock (65-pound weight)
 6. six (6) drinking straws
 7. six (6) styrofoam trays; trays should be no larger than 7" x 10"
- F. Teams have two (2) hours to design and construct a solution.
- G. Each solution is tested as soon as possible after the construction phase is completed. (Some problems may require teams to be present for testing.)
- H. Semifinalists will be determined and posted by the CRC.
- I. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- J. The LEAP interview will last a maximum of five (5) minutes.
- K. Ten (10) finalists are announced at the awards ceremony.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. All work must be completed in the event area during the time specified for the event.
- B. Specific materials related to the on-site problem will be provided by TSA. Only the materials issued to each team by the event coordinator, or the items that students are required to bring, may be used in the development of the solution.
- C. Only the toolbox items in Procedure C, the materials in Procedure E, and any items supplied by the coordinator may be used in the development of the solution. Participants without a toolbox will not be allowed to compete. Sharing tools between teams is not permitted.
- D. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Each team's solution is evaluated objectively. A finite measure, such as elapsed time, horizontal or vertical distance, and/or strength, is used to determine the best solution. Solution designs will be used to break ties. Only as a last resort do the evaluators use subjective criteria, such as originality, to evaluate solutions. The LEAP requirements will also be evaluated. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Computer software engineer
- Mathematician
- Criminal investigator
- Air traffic controller

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 on 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 being held.
- C. Evaluators, two (2) or more
- D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. ID tags or stick-on labels to identify entries
 - 6. Stopwatch
 - 7. Results envelope
 - 8. Envelope for LEAP Leadership Resumes
 - 9. LEAP Interview Judging Protocol
- B. Tables and chairs for participants
- C. Tables and chairs for evaluators, to be used for tools/materials distribution and evaluation
- D. Well-written, technologically appropriate problem that can be objectively measured; one (1) copy per team and evaluator
- E. Adequate conditions, tools, materials, monitoring, and testing devices for the problem

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- D. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- E. Distribute materials as appropriate, prior to the event
- F. Begin the event at the scheduled time by closing the doors and checking the coordinator's report. Collect LEAP Leadership Resumes from each team. All participants and evaluators should be in the room at this time. In order to compete, participants must be on the entry list or must have approval of the CRC.
- G. Each team will display its tools using the tool template (paper template) provided, as necessary. Only tools displayed will be permitted.
- H. Toolboxes must be removed from a team's work table prior to when participants begin the design and construction of the solution.
- I. Once teams are seated (checked against the coordinator's report), LEAP Leadership Resumes are collected, and general announcements have been made, the event problem will be distributed, reviewed, and time will be started.
- J. Evaluators and monitors observe the entire construction phase, with evaluators measuring solutions as soon as appropriate.
- K. Evaluators will collect the solution design when the team's solution is submitted for testing. Evaluators will use the designs to break any ties in order to determine the twelve (12) semifinalist teams.
- L. Semifinalists will be determined and posted by the CRC.
- M. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- N. The LEAP interview will last a maximum of five (5) minutes.

- O. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- P. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

TECHNOLOGY PROBLEM SOLVING

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Students have safety eyewear.
- The toolkit is present.
- Additional required items are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Solution Development (20 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
----------	-----------------------------------	------------------------------------	--------------------------------------

Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Solution to problem (X2)	The solution developed is unable to fully meet or solve the defined problem.	The solution developed is somewhat able to address the problem.	The solution developed fully and clearly meets or solves the identified problem.
-------------------------------------	--	---	--

SUBTOTAL (20 points)

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

Indicate the rule violated: _____

Testing of Solutions (50 points)

Evaluation

A finite unit of measure, such as elapsed time, linear distance, and/or strength, etc., is used to determine ranking.

1st - 50 points	2nd - 45 points	3rd - 40 points	4th - 35 points	5th - 30 points
6th - 25 points	7th - 20 points	8th - 15 points	9th - 10 points	10th - 5 points

SUBTOTAL (50 points)

Record scores in the column spaces below.

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation D and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (90 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



TRANSPORTATION MODELING

OVERVIEW

Using only designated materials and following required specifications, participants research, design, and produce a scale model of a vehicle that fits the annual design problem, which is posted on the TSA website under Competitions/Themes and Problems. The entry must take appearance and realism into consideration.

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.

LEAP LEADERSHIP RESUME/INTERVIEW

An Individual LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the National TSA Dress Code section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries and submit LEAP Leadership Resumes at the time and place stated in the conference program.
- B. Evaluators review entries. Neither students nor advisors are present at this time.
- C. Semifinalists will be determined and posted by the CRC.

- D. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- E. The LEAP interview will last a maximum of five (5) minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. Entries must include a scale model, a display, and documentation (a portfolio).
- B. The model, display and documentation must meet the following specifications:

Model

1. The scale model must accurately reflect the annual design problem.
2. The model must be designed and produced as original work by the student during the current school year. The model may be made from wood or it may be 3D-printed.
3. Using commercially produced (store-bought) model vehicle body parts (including hoods, fenders, wings, propellers, frames, etc.) is prohibited.
4. It is permissible to use pre-manufactured parts such as body strengtheners, tires and wheels, plastic canopy, exhausts, mirrors, head and tail lights, windshields, 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. It is also permissible to use 3D printers in the production of the parts of this model.
5. The finished vehicle must fit inside the display space of 24"x24"x24".
6. The designer must choose a scale for the vehicle so that it meets Regulation 3 above and must be specified in the notebook.
7. Wheels: Dimensions should be consistent with the scale of the body. Wheels must roll.



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



Documentation

1. Documentation materials (comprising a “portfolio”) are required and should be secured in a **clear front report cover**. In addition to the 11" x 17" pages noted below, the report cover must include the following single-sided, 8½" x 11" pages, in this order:
 - a. Title page with the event title, the conference city and state, and the year; a picture of the vehicle may be included as well; one (1) page
 - b. Table of contents; pages as needed
 - c. Description of designer’s vehicle, **making note of the scale used**, inspiration for the choice and design of the vehicle, research about the history and evolution of the original vehicle, and design elements that set the vehicle apart from others (e.g. fuel used, unique features); one (1) page
 - d. Photo examples of current or past vehicles that are similar to the current year’s theme or that inspired the entry; one (1) page
 - e. Concept drawings/detailed sketches or 3D CAD modeling; two (2) pages (11" x 17" size)
 - f. Photos of the clay, foam, wax, or 3D-printed mock-up; one (1) page
 - g. Final technical illustrations (orthographic); two (2) pages (11" x 17" size)
 - h. Photos of the production of the model; one page
 - i. Documentation for this event must not include the name of the chapter or state.
 - j. All ideas, text, or images from sources other than the designer must be cited.
 - k. Cited works should be in MLA format.
 - l. Pages that are 11" x 17" in size should be folded to fit in the notebook.

Display

1. The model should be presented for evaluation on a display not to exceed 24" tall x 24" deep x 24" long (including the model). The portfolio is not considered part of the display but is placed with it. No electrical access will be provided by TSA for displays. Use of dry cell batteries is permissible, but they must be contained within the stated display space.
- C. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview—Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their

resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Entries are evaluated on the quality of the notebook, model, display, and LEAP requirements. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Automotive designer
- Automotive engineer
- 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
- D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluatorsassistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluatorsassistants 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 and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 evaluatorsassistants to review time limits, procedures, and



- regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- F. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
 - G. Collect and position the documentation portfolios and models for viewing by the evaluators, and assist them as necessary during the event.
 - H. When it is necessary to move models, only evaluators and official personnel should handle the models. Extreme care should be taken to avoid damage to the entries.
 - I. Semifinalists will be determined and posted by the CRC.
 - J. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
 - K. The LEAP interview will last a maximum of five (5) minutes.
 - L. Evaluators determine the ten (10) finalists in rank order and discuss and break any ties.
 - M. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
 - N. At the designated time, return models, displays, and portfolios to student owners after verifying official conference identification.

Participant/Team ID# _____

TRANSPORTATION MODELING

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Vehicle scale model is present.
- The model is made of appropriate materials.
- The portfolio is present.
- The display size is no more than 24"x 24"x 24".
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Model and Display (50 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Production quality (X1)	The model exhibits poor production quality; the surface is rough; there is little or no attention to detail.	There is some evidence of proper production techniques; the model appearance is adequate.	The model demonstrates excellent production techniques with obvious effort and attention to detail.
Paint and finish (X1)	Surface imperfections are evident; the model is sticky, and/or the painting quality is low.	The quality of the painted surface is acceptable, with some imperfections visible.	The painted surface is exceptional, with little or no visible imperfections.
Appropriate to designated problem (X1)	The model does not relate to the stated annual design theme.	The model generally relates to the stated annual design theme.	The model effectively represents and portrays the stated annual design theme.
Details (X1)	There is a very weak and limited attempt to include identifying characteristics and/or additional parts to help create a realistic appearance.	The model includes some identifying characteristics and/or additional parts that give it a sense of realism.	The model displays exemplary effort to include identifying characteristics and/or additional parts that give it a realistic appearance.
Display (X1)	The quality of the display is poor, and/or it exceeds the size requirements.	The display is adequately created and meets the size specifications.	The display is exemplary, includes eye-catching details, and meets the size specifications.
SUBTOTAL (50 points)			

Record scores in the column spaces below.

Documentation (70 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Portfolio components See Regulation B Documentation (X1)	The portfolio is missing several components, and/or it is unorganized; it is messy and lacks quality.	Most components are included in the portfolio; it is adequately organized.	All portfolio components are included and completely organized; effort and quality of work are evident.



Documentation (continued) (70 points)			
Vehicle description (X1)	The description is inadequate; research references are lacking; the scale is incomplete.	The description is adequate, research is evident with some documentation, and the scale is stated and accurate.	An excellent description is included, with necessary research referenced to support the model solution; the scale is stated and accurate.
Concept drawings, detailed sketches, or 3D CAD modeling (X1)	The drawings are not to scale, and/or the quality is poor, and/or there are missing parts and dimensions; the drawings are not on 11" x 17" paper.	The drawings are acceptable, true to scale, and representative of the vehicle, with some details/dimensions included; the drawings are produced on 11" x 17" paper.	The drawings are accurate and complete; they include all necessary details/dimensions and are drawn on 11" x 17" paper.
Photo examples of current/past similar vehicles (X1)	There is only one photo example of current or past similar vehicles.	There are two or three photo examples of current or past similar vehicles.	There are a number of photo examples of current or past similar vehicles, showing that in-depth research was done.
Photos of clay, foam, wax, or 3D-printed model (X1)	There is only one photograph of the clay/foam or wax model included.	Two or three photographs of the clay/foam or wax model are included, but more are needed to adequately document the model.	There are a number of photographs included that effectively document the preliminary clay/foam/wax model.
Final technical illustrations (orthographic plans) (X1)	Orthographic plans are poorly executed, and/or the plans are not on 11" x 17" paper.	Adequate orthographic plans are included; the plans are on 11" x 17" paper.	Complete orthographic plans are included; they are of excellent quality on 11" x 17" paper.
Photos of production of the model (X1)	Only one photograph of the model production is included.	Two or three photographs of the model production are included, but they are not enough to provide full documentation.	The photographs included fully and effectively document and describe the model production process.
SUBTOTAL (70 points)			

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

Indicate the rule violated: _____

Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation C and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (20 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (140 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



VIDEO GAME DESIGN

OVERVIEW

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.

Participants develop a game that focuses on the subject of their choice. The game must be interesting, exciting, visually appealing, and intellectually challenging. The game must have high artistic, educational, and social value.

The theme of the current year's game will be posted on the national TSA website under Competition Themes/Problems.

ELIGIBILITY

Participants are limited to three (3) teams per state, with a minimum of two (2) members per team.

TIME LIMITS

- A. Entries must be started and completed during the current school year.
- B. **The game must be playable within three (3) minutes of the judges receiving the laptop or computer from the semifinalist team. Games that are not playable within three (3) minutes will not be judged.**
- C. The game submitted for evaluation must be greater than three (3) minutes and no more than fifteen (15) minutes in length of play. The game must be interactive.
- D. The timing of the game segments starts with the first image or sound presented.
- E. As part of each semifinalist interview, each semifinalist team will participate in a LEAP interview that will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to

interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants check in their entries (documentation portfolio) and submit a LEAP Leadership Resume 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, with the game pre-loaded and ready to play on their laptop or computer, for an interview.
- D. Each semifinalist team explains its portfolio 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.
- E. The LEAP interview will be conducted as part of the semifinalist interview and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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

REGULATIONS

- A. The game will be played by judges during the semifinalist interviews.
- B. Semifinalists will bring their laptop or computer, with the game pre-loaded and ready to play, to the interview room at the time and place stated in the conference program.
- C. The game must be rated E+10 using the Entertainment Software Rating Board (ESRB) rating system.



- D. The game must execute and be played directly from the contestant's computer during the semifinalist interview.
- E. Judges will follow instructions found in the portfolio. Instructions and text must be clear and understandable for the evaluation process.
- F. Entries must be a team project.
- G. All entries become the property of TSA, Inc. and will not be returned after judging.
- H. 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.
- I. The documentation materials must be submitted at check-in. Documentation items (comprising a "portfolio") are required and should be secured in a clear front report cover. The report cover must include the following single-sided, 8½" x 11" pages, in this order:
 1. Title page with the event title, the conference city and state, and the year; one (1) page
 2. Table of contents; pages as needed
 3. Purpose and description of game, including target audience; one (1) page
 4. A detailed explanation of how to play the game, including a list of all control functions; pages as needed
 5. Team's self-evaluation of the design process that includes use of event evaluation criteria; one (1) page
 6. A hand-drawn storyboard; pages as needed
 7. Screen captures of the key images seen throughout the game; pages as needed
 8. List of hardware and software used in development of the game, as well as cost of development; pages as needed
 9. List of references that includes sources for materials (copyrighted and otherwise); pages as needed
 10. Permission letters for copyrighted material; pages as needed
 11. A list of everything in the game not created by the team; pages as needed
 12. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); pages as needed
 13. Completed and signed Student Copyright Checklist (see Forms Appendix or TSA website); one (1) page

J. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).

EVALUATION

Preliminary evaluation is based on the contents of the portfolio, which should describe and depict the game's aesthetics, flow, story, content, sound (preferred but not required), and characters. The game must be entertaining, exciting, and challenging and have artistic, social, and educational value. Fifteen (15) bonus points may be added by the judges for exceptional game features, or for content showing exemplary educational or social value. The LEAP requirements will also be evaluated. Please refer to the official rating form for more information.



STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

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

CAREERS RELATED TO THIS EVENT

- Animator
- Computer programmer
- Electronic game designer
- Electronic game technician
- Writer

VIDEO GAME DESIGN

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Evaluators for initial round, two (2) or more
- C. Semifinalist evaluators, two (2) or more

MATERIALS

- A. Coordinator's packet containing:
 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 2. TSA Event Coordinator Report
 3. List of evaluators/assistants
 4. Pre-populated flash drives for evaluators
 5. Stick-on labels for entries, as needed
 6. Results envelope
 7. Envelope for LEAP Leadership Resumes
 8. LEAP Interview Judging Protocol
- B. Tables for entries
- C. Tables and chairs for preliminary evaluators
- D. Tables and chairs for semifinalist evaluators and participants
- E. Extension cords and power strips with surge protection for evaluators, as needed

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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 and collect LEAP Leadership Resumes at the time and place stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. 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 portfolio. Secure the entries in the designated area.
 - E. One (1) hour before the evaluation of the entries is to begin, meet with 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 to determine twelve (12) semifinalists.
 - G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
 - H. Submit semifinalist results to the CRC for posting.
 - I. Semifinalists report to the event area at the time and place stated in the conference program, with their laptop or computer that has the game pre-loaded and ready to play. Each semifinalist team signs up for a time to present its game. Upon entering the interview room, semifinalist team members will present their laptop or computer to the judges. The judges will use the instructions found in the team's portfolio to play the game. During the interview, the semifinalist team members will explain their work and answer any questions the evaluators may ask. The LEAP interview will be conducted as part of the semifinalist interview and will last a maximum of five (5) minutes.
 - J. Evaluators determine the ten (10) finalists and their ranking and discuss and break any ties.
 - K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
 - L. Collect all portfolios and give them to the event manager.
 - M. If necessary, manage security and the removal of equipment and materials from the area.

Participant/Team ID# _____

VIDEO GAME DESIGN

2017 & 2018 OFFICIAL RATING FORM
HIGH SCHOOL

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- The portfolio is present.
- The game is playable within three (3) minutes of the judges receiving the laptop or computer from the semifinalist team.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.				
Portfolio components See Regulation H (X1)	Not all portfolio pages are included, and/or the pages are unorganized.	Most portfolio elements are included and organized.	Outstanding organization skills are evident in the preparation of the portfolio.	
Game directions and control function (X2)	The game explanation is difficult to follow; functions provided are illogical or incorrect.	The game directions can be followed, but at times they do not sync with overall workings of the game; most control functions are adequate.	The game explanation is easy to follow, and control functions are well-matched for the game.	
Plan of Work log and self-evaluation (X1)	Plan of Work log is incomplete and inaccurate; participant self evaluation is poor.	Plan of Work log is included and mostly addresses participation of all team members; participant self-evaluation is adequate.	Plan of Work log is complete and shows participation of all members; self-evaluation is expressive and specific.	
SUBTOTAL (40 points)				

Game Design (40 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	Record scores in the column spaces below.
The game lacks creativity; poor artisanship and development are evident.				
Creativity and artisanship (X1)	The game exhibits adequate creativity and artisanship.	The game is highly creative and well-crafted.		
Technical skill (X1)	The game lacks originality and shows few technical skills.	The game is original and shows some evidence of programming skills.	The game is original, highly artistic, and shows evidence of programming skills.	
Storyline/flow of the game (X1)	The game follows little or no story line; there is limited logical flow to the game.	The game follows a story line and flows adequately from one scene/level to another.	The game is well-organized and flows smoothly from one scene/level to the next.	
Overall appeal (X1)	Playing the game is not enjoyable; interacting in game play is a struggle, due to the game's illogical sequencing.	The game is somewhat interesting, easy, and enjoyable to play; most design concepts are incorporated.	The game is innovative and entertaining; design principles are incorporated, which make playing the game easy and enjoyable.	
SUBTOTAL (40 points)				



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

Indicate the rule violated: _____

Bonus (15 points)			
CRITERIA	Minimal performance 1-6 points	Adequate performance 7-10 points	Exemplary performance 11-15 points
Bonus Points Unique and exceptional features (X1)	The game demonstrates some unique and exceptional features and/or exemplary educational value.	The game is very good but limited in uniqueness.	The game is outstanding and unique.
SUBTOTAL (15 points)			

Semifinalist Interview (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participants seem unorganized and unprepared for the interview; an illogical explanation of the game is presented.	Participants are generally prepared for the interview; explanation of the game is communicated and generally organized.	The interview is logical, well-organized, and easy to follow; the game explanation is communicated in an organized and concise manner.
Team participation (X1)	The majority of the delivery is made by one member of the team; the partner(s) may be disengaged in the interview.	Team members generally are engaged in the interview, though one member may take on more responsibility than the other(s).	All team members are actively involved in the interview and responses to the questions; there is shared responsibility among team members.
Knowledge (X1)	Participants seem to have little understanding of the concepts in their project; answers to questions may be vague.	Participants exhibit an understanding of the concepts in the project.	Participants show clear evidence of a thorough understanding of their project.
LEAP Leadership Resume/Interview See Regulation J and instructions on TSA website (X2)	The individual's efforts are not clearly communicated, lack detail, and/or are unconvincing. Few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's efforts are clearly communicated, fully-detailed, and convincing. Identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (50 points)			

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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (145 points)

Comments:

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

Evaluator

Printed name: _____

Signature: _____



WEBMASTER

OVERVIEW

Participants are required to design, build, and launch a website that features the school's career and technology/engineering program, the TSA chapter, and the chapter's ability to research and present a given topic pertaining to technology (referred to as the "design brief"). 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 web design methods and practices, as well as their research for the annual design topic. The topic for the current year will be posted on the TSA website under Competitions/Themes and Problems.



Webmaster
has unique entry
requirements. Entries
must be posted to
webentry@tsaweb.org
by 11:59 pm Pacific
Daylight Time (PDT)
on May 15th.

ELIGIBILITY

Participants are limited to one (1) team of three to five (3-5) members per TSA chapter, one (1) entry per team.

Semifinalist teams may be represented by up to five (5) chapter members during 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 11:59 pm Pacific Daylight Time (PDT) on May 15th. Note: After 11:59 pm on May 15th changes should not be made to the website. If a team makes changes or updates 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 submitted to webentry@tsaweb.org by 11:59 pm Pacific Daylight Time (PDT) on May 15th. The URL must point to the main web page of the career and technology/engineering program or TSA chapter portion of the team entry. (NOTE: This procedure applies to the national TSA competition only — entry procedures for state conferences are handled by each state.) Email verification of each team's entry is made by June 10th. Five (5) days prior to the national TSA conference, links from the national TSA website to all Webmaster entries become available.

- C. Semifinalists participate in an on-site interview that lasts approximately five to ten (5-10) minutes.
- D. As part of the semifinalist interview, each semifinalist team will participate in a LEAP interview that will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants obtain the event design brief from the national TSA web site at www.tsaweb.org. (Criteria for the middle school and high school events are different.)
- B. All questions pertaining to Webmaster must be emailed to the event coordinator, whose email address can be found in the Directory section of the TSA website (www.tsaweb.org)
- C. Participants design a website that features the following components: the school's career and technology/engineering program, the TSA chapter, and the chapter's solution to the design brief. All portions of the website must be the original work of the team members.
- D. A LEAP Leadership Resume must be submitted with the event entry (in PDF format). The resume must be submitted as an attachment to the email containing the chapter's entry (URL).
- E. The entries are evaluated prior to the national TSA conference so that evaluators have ample opportunity to view the entries online.
- F. A semifinalist list of twelve (12) teams in random order will be posted at the national TSA conference on the first full day of competition, at least one (1) day prior to the interview.
- G. Semifinalist teams must sign up for an interview time. The specific place and time for interview scheduling is posted in the conference program. Each team must report back to the event area at the appropriate time.

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



- H. Up to five (5) team members from each semifinalist team may report to the event area for the interview at the designated time and place.
- I. Each team is interviewed by the evaluators for approximately five to ten (5-10) minutes.
- J. The LEAP interview will be conducted as part of the semifinalist interview and will last a maximum of five (5) additional minutes.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under Competitions/Updates. When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

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/engineering program (i.e., career and technology/engineering classes offered at the school, course summaries, digital images that showcase the school technology/engineering laboratory, teacher contact information, etc.)
 - 2. Original web pages that promote the school's TSA chapter (e.g., logo, motto, creed, officers, photos, chapter activities including school and community service projects)
 - 3. Original web pages that specifically display the chapter's solution to the design brief
 - 4. Career and technology/engineering courses and program pages
 - a. This section has no minimum or maximum number of pages.
 - b. The main page for this section must contain a link to the TSA chapter main page and the design brief main page.
 - 5. TSA chapter pages
 - a. This section has no minimum or maximum number of pages.
 - b. The main page for this section must contain a link to the design brief main page.
 - 6. Design brief pages

- a. This section has no minimum or maximum number of pages.
 - b. A page within this section must contain a link to the TSA chapter's main page and the career and technology education program's main page.
7. LEAP Leadership Resume
- C. All web pages must be started and completed during the current school year.
 - D. Framework systems, such as Drupal, Joomla, Wordpress, Bootstrap, or other current technologies may be used; however, pre-built templates and themes for these sites are not permissible. If a framework system is used, a statement affirming that the template or theme used on the framework was built by the team must be posted on an "About" section or page.
 - E. Template engine websites, such as, but not limited to, Webs, Wix, and Weebly are NOT permitted.
 - F. If copyrighted material, such as text, images, or sound from other sources is used, proper written permission must be included. (See the Student Copyright Checklist [see Forms Appendix or TSA website], which must be completed, signed, and included in a separate PDF file with the entry.)
 - G. All entries are viewed with reasonably current versions of Internet Explorer, Google Chrome, Mozilla Firefox, and/or Safari. Each entry also may be viewed with various tablet and mobile devices.
 - H. Each chapter selects up to five (5) team members to represent the chapter in the on-site interview.
 - I. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume (see resume template), the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their presentation and/or interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#).



EVALUATION

Evaluation of the entry includes overall design and originality, career and technology/engineering 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.

The interview provides an opportunity for judges to evaluate the team's knowledge and expertise pertaining to the entry in the following areas: overall website design and originality, career and technology/engineering program, TSA chapter information, design brief, website compatibility with different browsers, monitor resolution, plug-ins, etc.

NOTE: The LEAP requirements will be evaluated.

Please refer to the official rating form for more information.

STEM INTEGRATION

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

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters chart* and the *TSA Competitions and The 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 packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report (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 evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Results envelope
 - 6. Envelope for LEAP Leadership Resumes
 - 7. LEAP Interview Judging Protocol
- B. List of questions for on-site interview
- C. One to three (1-3) laptop computers, with high speed Internet access, and loaded with reasonably current versions of Internet Explorer, Google Chrome, Mozilla Firefox, and/or Safari. A mobile device, such as a smartphone or tablet, is also desirable.
- D. Evaluation of Webmaster entries takes place before the conference so that evaluators can post the conference semifinalist list on the first full day of the national TSA conference and have plenty of time for the on-site interviews.

RESPONSIBILITIES

- A. Review entries as they are received by webentry@tsaweb.org. Entries are allowed only until 11:59 pm Pacific Daylight Time (PDT) on May 15th. Send email verification to all entrants by June 10th.

- B. Compile all team LEAP Leadership Resumes for use in the on-site semifinalist round at the national TSA conference.
- C. Five (5) days prior to the national TSA conference, make links available from the national TSA website to all Webmaster entries.
- D. Manage communication and pre-conference evaluation of entries (at least two [2] evaluators are recruited earlier in the year). Collect completed entry scores, and have these scores at the conference.
- E. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. 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.
- F. On the first full day of competition, at least one (1) day prior to the interview portion of the event, have the CRC post a list of the twelve (12) semifinalists in random order.
- G. Review the time limits, procedures, and regulations with the evaluators. Clear up any questions or misunderstandings. Distribute guidelines for the interview.
- H. Semifinalist teams report to the event area and sign up for an interview time. Manage completion of the on-site interviews.
- I. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- J. The LEAP interview will be conducted as part of the semifinalist interview and will last a maximum of five (5) additional minutes.
- K. Evaluators determine the ten (10) finalists and their ranking, and 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.
- L. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.



Participant/Team ID# _____

WEBMASTER

2017 & 2018 OFFICIAL RATING FORM**HIGH SCHOOL**

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- TSA chapter content is present.
- The design brief solution is present.
- The website is compatible with different browsers, screen resolutions, and mobile devices.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Website (130 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
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Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

Layout and navigation (X2)	The web pages are cluttered and confusing; it is often difficult to locate important elements; the navigation structure is unclear, unintuitive, and ineffective in getting users to relevant information.	The web pages have a reasonably usable layout, and all major elements can be found; the design is generally pleasing to view; the navigation structure is generally effective and intuitive, and provides reasonable ability to navigate the website.	The layout is exceptionally user-friendly and easy to use; the relationship of elements and content are effective and attractive to the viewer; the navigation structure is highly intuitive, and provides efficient access to all pertinent information on the website.
Graphics and color scheme (X2)	Graphic content is nonexistent or of low quality and questionable relation to the topic; colors are of poor contrast and detract from the user experience.	Graphic content effectively relates to the purpose of the site, provides enhancement to the user experience, and is of acceptable to good quality; the color scheme is effective and does not detract from the viewer's experience.	Graphics are well-used, of high quality, and clearly enhance the user experience; interactive elements effectively engage the user; the color scheme is attractive, appropriate, and clearly enhances the viewing experience.
Function and compatibility (X1)	There are several broken links and images, and/or the website does not render properly on multiple browsers.	There are no broken images, and/or few, if any, broken links; the website renders properly on most major browsers.	There are no broken images or links; the web site renders properly on most major browsers and is usable on mobile devices.
Spelling and grammar (X1)	There are numerous spelling and grammatical errors.	There are only a few spelling and/or grammatical errors.	There are few, if any, spelling and grammatical errors.
CTE program content (X2)	The existence of the CTE program is presented, but little detailed information is provided.	A listing of classes, modules, teachers, and student activities is generally present.	Classes and modules are described, teacher backgrounds are detailed, and student projects are well presented.
TSA chapter content (X2)	The existence of the TSA chapter is presented, but little detailed information is given.	Basic information, such as TSA motto, creed, chapter and history, competition, and activity information is generally present.	Information on TSA, competitions, activities, community service projects, awards, and other activities is presented in detail.

Record scores in the column spaces below.

Website (continued) (130 points)			
Design brief solution (X3)	The design brief solution is addressed, but not in great detail; it is generally ineffective, and/or missing many parts of the required research and presentation.	The design brief solution is generally well presented; it addresses most major parts of the required research and presentation.	The design brief solution is well presented, well researched, and highly effective; all expected components are present, and additional, unrequired elements that enhance the final product are incorporated.
SUBTOTAL (130 points)			

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

Indicate the rule violated: _____

Semifinalist Interview (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participants seem unorganized and unprepared for the interview.	Participants are generally prepared and are somewhat organized for the interview.	Participants' interview is organized, logical, and easy to follow.
Knowledge (X1)	Team members seem to have little understanding of their project; answers are vague, short, and/or incomplete.	Team members have a general understanding of their project, and adequately discuss their process and solution to the challenge.	There is clear evidence that the team members have a thorough understanding of their project and design procedure.
Articulation (X1)	The interview provides an unclear, unorganized, and or illogical description of the project.	The interview offers a somewhat logical and easy-to-understand project description.	The interview provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The team is verbose and/or uncertain in its interview; participants' posture, gestures, and lack of eye contact diminish the interview.	The team is somewhat well-spoken and distinct in its interview; participants' posture, gestures, and eye contact are acceptable in the interview.	The team is well-spoken and distinct in its interview; participants' posture, gestures, and eye contact result in a polished, natural, and effective interview.
Engagement and participation (X1)	The team must be prompted to provide answers and information; a clear team leader dominates the interview, while other team members are unresponsive.	Team members generally answer questions with responses of acceptable length and depth; most team members participate adequately in the interview and engage the judges when answering questions.	All team members contribute in the interview; while there may be a clear team leader, all members provide appropriate substantive material to the conversation; the team engages the judges in the interview, which becomes less of a question and answer session and more of a conversation about the topic and solution.
LEAP Leadership Resume/Interview See Regulation I and instructions on TSA website (X2)	The team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
SUBTOTAL (70 points)			



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

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (200 points)

Comments:

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

Evaluator

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 areas for development:

Lasers/satellites/radar	Cloud computing
Engineering	Mobile apps
3D printing	STEM
Transportation technology	Economic development
Environmental technology	Future technology
Innovative power sources	21st-century technology
Biotechnology problem solving	Leadership development
Electronic publishing	Data management
Social media marketing	Green technology
Manufacturing technology	Cybersecurity

When submitting a proposal for consideration, include these elements:

- Overview (description of the event and participant expectations)
- Eligibility for entry
- Limitations (such as time or entry submission requirements)
- Specific regulations
- Required personnel
- Standards alignment with STEM standards

Formative ideas are welcome, but the more complete the proposal the less likely it will be misinterpreted. The Competition Regulations Committee (CRC) acknowledges all submissions, and each is given consideration for possible inclusion in a competitive events guide. Once submitted, ideas and events become the property of national TSA. Proposals must be submitted by August 15, 2017 in order to be considered for the next high school guide.

Proposals must include the submitter's name and complete contact information. Proposals may be mailed to CRC, c/o National TSA, 1914 Association Drive, Reston, VA 20191-1540, or submitted in a Word file to general@tsaweb.org.



TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK				
Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				
Advisor signature _____				

STUDENT COPYRIGHT CHECKLIST

(for students to complete and advisors to verify)

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

If NO, go to question 2.

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

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

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

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

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

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

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

If NO, go to question 3.

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

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

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

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

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

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

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

If NO, this is the end of the checklist.

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

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

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

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



PHOTO/FILM/VIDEO CONSENT AND RELEASE

I hereby give permission for images of my child or myself (as applicable), captured during Technology Student Association (TSA) activities through video/film, photo or digital camera, to be used solely for the purposes of TSA promotional materials and publications, and I waive any rights of compensation or ownership thereto.

Name of minor in images (please print)

Name of minor's parent/guardian (please print)

Name of adult in images (please print)

Parent/guardian or adult's signature (as applicable)

Date

TSA LEAP LEADERSHIP RESUME – TEAM EVENT

The resume must be typed using 11pt Arial or Calibri font. For information about how to complete the resume, visit this link: (<http://www.tsaweb.org/LEAP-competition-engagement>)

TEAM IDENTIFICATION

Team ID:

Competitive event:

Level:

LEADERSHIP EXPERIENCES (specific to a competitive event)

LEADERSHIP EXPERIENCES (connected to one or more of these categories: *Leadership Roles; Community Service/Volunteer Experiences; Leadership Development/Training; College/Career Planning*)



TSA LEAP LEADERSHIP RESUME – INDIVIDUAL EVENT

The resume must be typed using 11pt Arial or Calibri font. For information about how to complete the resume, visit this link: (<http://www.tsaweb.org/LEAP-competition-engagement>)

STUDENT/TEAM IDENTIFICATION

Participant ID:

Team ID:

Competitive event:

Level:

LEADERSHIP EXPERIENCES (specific to a competitive event)

LEADERSHIP EXPERIENCES (connected to one or more of these categories: *Leadership Roles; Community Service/Volunteer Experiences; Leadership Development/Training; College/Career Planning*)

EVENT REVISION SUGGESTION

As TSA expands in membership, and participation in competitive events increases, parts of some competitive events may need revision. Also, whenever guidelines are misinterpreted, they are revised for better clarity. TSA encourages input so that competitive events continue to improve. Please use this form for comments. (Use one form for each suggestion.)

Event title _____

Note a reference to the exact section and page number in *2017 & 2018 High School Technology Activities, National TSA Conference Competitive Events Guide*.

State your suggestion. Be very specific. List exactly what should be deleted, replaced, and/or added to the event rule or procedure.

Provide a rationale. List the pros and cons from a personal viewpoint.

Are any STEM areas addressed by this change? Explain.

Signature	Date	State advisor's signature	Date
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Address/city/state/zip

Include signatures of two people from different TSA chapters who support the suggestion.

Signature*	Date	Signature*	Date
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Mail to: CRC, c/o National TSA, 1914 Association Drive, Reston, VA 20191-1540
Email to: general@tsaweb.org



RULES INTERPRETATION PANEL GRIEVANCE

Site of national TSA conference _____

Advisor's name _____

Chapter name _____

School name _____

Competitive event (including level) _____

Student or team identification number _____

STATEMENT OF CONCERN (Please print or type.)

Signature of advisor

Date

Signature of state advisor

Date

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

RULES INTERPRETATION PANEL RESPONSE TO GRIEVANCE

Panel members:

Signature _____ Date _____

Signature _____ Date _____

Signature _____ Date _____

Site of national TSA conference _____

Date _____

Competitive event (including level) _____

Student or team identification number _____

Advisor's name _____

STATEMENT OF RESPONSE

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