MIDDLE SCHOOL EVENTS

1. Career Prep

Overview: Participants conduct research on a selected technology-related career and use the knowledge gained to prepare a resume and cover letter, and participate in a mock interview.
Challenge: Design and produce a cover letter and a chronological or skills resume based on research of a selected technology-related career from the appropriate list above. Be prepared to participate in a mock interview as a semifinalist.
Eligibility: Up to three (3) individual entries per chapter.
Topic(s): Choose One:
Nuclear Engineer, Database Administrator, Information Systems Security Professional, Software Developer
Competition: Semifinalist Round only

2. Communication Challenge

Overview: During the school year, participants write, design, and produce three (3) promotional products that are submitted as entries in printed format. Semifinalists produce a layout for a promotional item for a fictitious company.
Challenge: Participants design and produce:

1) A trifold brochure that promotes the chapter
2) An effective sponsor support request on chapter letterhead
3) An 8½" x 11" two (2)-sided card stock or glossy postcard promoting TSA's current national service project.

Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site work

3. Community Service Video

Overview: Participants create a video that highlights their chapter's involvement with the American Cancer Society (ACS) over the course of a school year.
Challenge: Participants create and submit a finished video, capable of being played on a standalone DVD player that depicts the local TSA chapter's service with the American Cancer Society, national TSA's service partner.
Eligibility: Up to two (2) entries per chapter, team or individual
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

4. Construction Renovation

Overview: Participants submit a display that documents the use of their leadership and technical skills to fulfill a community need related to construction. Semifinalists discuss their projects in a presentation and an interview.
Challenge: Participants identify a community need related to construction and then plan and implement a course of action that involves students and community members.
Eligibility: Up to two (2) teams per chapter, two (2) to four (4) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

MIDDLE SCHOOL EVENTS

5. Digital Photography

Overview: Participants produce and submit an album of digital photographs in a PDF file on a recordable CD. Semifinalists are assigned a task on site.
Challenge: Participants produce a digital album consisting of color or black and white digital photographs that represent or relate to a chosen theme and place the album on a storage device for submission. Semifinalists produce a series of digital photographs taken at the conference site and edited appropriately for the on-site task.
Eligibility: Up to five (5) individual entries per chapter
Topic(s): Our Town
Competition: Project Portfolio Judged, NO on site interviews

6. Dragster

Overview: Participants design, produce working drawings for and build a CO2-powered dragster.
Challenge: Participants design and produce a fast CO2-powered dragster according to stated specifications and using only certain specified materials.
Eligibility: Up to five (5) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Drawings Judged, Dragsters Judged and Raced

7. Energy Sources

Overview: Americans make up less than five percent of the world's population, but we use over twenty-six percent of the world's energy resources. There has been great debate at the local, state, and national levels about how we, as Americans, can develop and/or implement existing or emerging energy sources to use power more wisely and efficiently for our way of life.
Challenge: Participants conduct research on an energy source selected from one (1) of the three (3) areas below and develop marketing pieces that will be used to help convince their local government officials and citizens to make strides to implement the energy source.
The marketing pieces will consist of:

1) a tri-fold brochure detailing their region's current energy resources and how the proposed energy source will be better for the citizenry and the environment

2) a promotional video that outlines the benefits of the proposed energy source and how it will be implemented in the region.

Eligibility: Up to two (2) team entries per chapter, three (3) students per team
Topic(s): Choose one:

Renewable Sources, Nuclear Energy, Fossil Fuels

Competition: Project Portfolio Judged, NO on site interviews

8. Flight

Overview: Participants study the principles of flight and design in order to fabricate and test fly gliders.
Challenge: Participants create a glider that stays in flight for the greatest elapsed time. The glider must be designed to be launched from a catapult that is provided on site. The design process is documented in a notebook that is submitted for evaluation.
Eligibility: Up to five (5) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Bring finished glider and drawing for judging. NO on site construction. Launcher will be provided.

MIDDLE SCHOOL EVENTS

9. Geospatial Technology

Overview: Based on a design brief provided by TSA, participants develop a notebook containing maps, data, and appropriate documentation.
Challenge: Teams will obtain a design brief for this competition at the following link: www.tsaweb.org/Themes-and-Problems
Eligibility: Up to two (2) teams per chapter, two (2) to five (5) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site problem

10.Medical Technology Issues

Overview: Participants conduct research on a contemporary medical technology issue of their choosing, document their research, and create a display. The information may include student-performed research or a re-creation or simulation of research performed by the scientific community. If appropriate, a model or prototype depicting some aspect of the issue may be included in the display.
Challenge: Participants choose a challenging contemporary issue related to medical technology and demonstrate understanding through research from reliable sources and effective presentation.
Eligibility: Up two (2) teams per chapter, two (2) to three (3) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

11.Prepared Speech

Overview: Participant delivers a speech that reflects the theme of the current national TSA conference. See the national TSA website at www.tsaweb.org for the current conference theme.
Challenge: Develop and deliver a prepared 3-5 minute oral presentation, using audio/visual support on the assigned topic.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): *"Designing Your Dreams"*
Competition: Prepared speech will be presented before judges.

12.Problem Solving

Overview: Participants use their skills in problem solving to develop a finite solution to a stated problem provided on site. Participants work as a team to provide the best solution, which is measured objectively.
Challenge: Participants must work effectively as a team to manipulate and process materials using only the tools designated. An objective measurement is used to determine the best solution to the given problem.
Eligibility: Up to two (2) teams per chapter, two (2) students per team
Topic(s): See Official TSA Events Guide.
Competition: Students will use on site materials to develop a solution to a given problem. Construction materials are provided.
BRING YOUR OWN TOOLBOX (See Official TSA Events Guide).

MIDDLE SCHOOL EVENTS

13.Promotional Design

Overview: A long-standing tradition at the national TSA conference is trading state lapel pins at the conference kick-off event. In this competition, participants will design a color lapel pin that can be used to promote their state TSA association at the next national TSA conference.
Challenge: Participants create and produce a color pin design that is appropriate for trading at the national TSA conference.
Eligibility: Up to two (2) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

14.STEM Animation

Overview: The STEM Animation competitive event allows participants to develop a scientific and/or technical visualization focusing on one (1) or more of the following areas: science, technology, engineering, and/ or mathematics.
Challenge: Create a scientific and/or technical visualization.
Eligibility: Up to three (3) team entries per chapter
Topic(s): Choose an area:
Science, Technology, Engineering, Mathematics
Competition: Project Portfolio Judged, NO on site interviews

15.Structural Model

Overview: Participants model a through bridge of the Howe, Pratt, or Warren truss style for destructive testing. Teams should prepare by fabricating several structures to evaluate which style to use in competition.
Challenge: Participants research and design a model to build using the supplied materials; they also will prepare drawings to reflect their preparation. Teams will bring their fabricated entry and their prepared drawings.
Eligibility: Up to three (3) team entries per chapter, two (2) students per team.
Topic(s): Fourteen Inch (14") Structure
Competition: Bring completed bridges and drawings for evaluation and destructive testing.

16.Technology Bowl

Overview: TSA chapters that enter Tech Bowl are required to complete a written objective examination to qualify for the oral question/response, head-to-head team competition phase of the event.
Challenge: Participants demonstrate their knowledge of TSA leadership skills and the elements addressed in the technology content standards.
Eligibility: Up to one (1) team per chapter, three (3) students per team.
Topic(s): See Official TSA Events Guide.
Competition: Written Qualifier, Oral Head-to-Head Competition

17.VEX Robotics

Overview: The TSA VEX Robotics Competition engages middle and high school students in science, technology, engineering and mathematics (STEM) education through an exciting, head-to-head robotics contest that captures student attention and both enhances—and allows them to use—their skills in STEM areas. In addition, the competition complements the existing technology-related competitive events offered by TSA at both levels of instruction.
Eligibility: Up to two (2) teams per chapter, three (3) to six (6) students per team
Topic(s): *"Skyrise"*.
Competition: VEX Competition is run in accordance with World VEX Rules.

MIDDLE SCHOOL EVENTS

18.Video Game Design

Overview: Participants develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging. The game should have high artistic, educational, and social value. A working, interactive game will be submitted on a DVD for evaluation.
Challenge: In designing a game, participants should understand that game art design demands the use of complex intellectual, artistic, and technical skills. Once learned, these skills may be applied in many other high technology occupations within the sciences, technology, and the arts. A well-designed game not only entertains but often requires the game player to use complex problem solving skills. Game development is a major industry today, and its potential as an instructional tool is virtually infinite.
Eligibility: Up to two (2) teams per chapter, two (2) to five (5) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio/Gameplay Judged, NO on site interviews

19.Water Infrastructure

Overview: Participants conduct research on the posted water infrastructure topic, document their research, and develop a multimedia presentation around the topic.
Challenge: Participants explore public knowledge about the value of water related to the topic, demonstrate understanding of the topic through research and effective presentation, and offer solutions to improve awareness of water related to the topic and the essential roles of water professionals.
Eligibility: Up to two (2) teams per chapter, two (2) to three (3) students per team.
Topic(s): *"The Impact of Green Infrastructures on Communities"*
Competition: Project Portfolio Judged, NO on site interviews

20.Website Design

Overview: Participants are required to design, build and launch a World Wide Web site that features the team's ability to research topics pertaining to technology. Pre-conference semifinalists participate in an on-site conference interview to demonstrate the knowledge and expertise gained during the development of the website with an emphasis on Internet and web history, web design of the design brief pages, and research about cutting edge advances in technology.
Challenge: Participants design, build, and launch a website that features the team's research about a science, technology, engineering, or mathematics (STEM) topic.
Eligibility: Up to two (2) teams per chapter, three (3) to five (5) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

HIGH SCHOOL EVENTS

1. Architectural Renovation

Overview: Participants develop a set of architectural plans and related materials for an annual architectural renovation design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design.
Eligibility: Up to three (3) teams per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio and Model will be judged. NO onsite interviews

2. Career Prep

Overview: Participants research and prepare a resume and cover letter for each of the careers noted. Semifinalists participate in an on-site job interview related to one of the careers.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): Choose one:
Aeronautical Engineer, Computer Information Security Specialist Professional, Geographical Information Systems Analyst
Competition: Semifinalist Round Only

3. Children's Stories – NEW! -

Overview: A team creates an illustrated children's story of high artistic, instructional, and social value. The story may be written in prose or poetry and take the form of a fable, adventure story, or other structure. The narrative, along with the accompanying illustrations, is to result in an experience that delights, enlightens, and helps in the wholesome development of a child. The story must have a Science, Technology, Engineering, and Mathematics (STEM) focus. There are many, 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. And, from mathematics one could write about numbers and shapes and the many mathematical designs found in nature and the industrial world.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio and Storybook will be judged. NO onsite reading or interviews.

4. Computer-Aided Design (CAD) 2D, Architecture

Overview: Participants create representations, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry.
Eligibility: Up to two (2) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Each event involves a one-hour on-site drawing. Computers with AutoCAD 2015 and Rhino are provided, or contestants may bring their own laptop computers.

5. Computer-Aided Design (CAD) 3D, Engineering

Overview: Participants create a 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product.
Eligibility: Up to two (2) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Each event involves a one-hour on-site drawing. Computers with AutoCAD 2015 and Rhino are provided, or contestants may bring their own laptop computers.

HIGH SCHOOL EVENTS

6. Desktop Publishing

Overview: Participants produce a notebook containing a news release, a three (3)-column newsletter, and a poster. Each of these publications might be used by a school's technology teacher and/or principal to attract students to the TSA organization. The news release and poster would promote the first TSA meeting of the school year. The newsletter would give details about the TSA program at the school, state, and national levels, and TSA competitions.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site work

7. Digital Video Production

Overview: Participants develop a digital video that focuses on the given year's theme. Sound should accompany the video.
Eligibility: Up to two (2) teams per chapter
Topic(s): *Cyber Spying*
Competition: Project Portfolio Judged, NO on site interviews

8. Dragster Design

Overview: Participants design, produce working drawings for, and build a CO2-powered dragster.
Eligibility: Up to four (4) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Drawings Judged, Dragsters Judged and Raced

9. Fashion Design

Overview: Students have the opportunity to research, develop, and create garment designs, garment mock-ups, and portfolios that reflect the current year's published theme. Twelve (12) qualifying semifinalist teams participate in an on-site event in which they present their potential garment designs to the judges on a TSA runway.
Challenge: The theme challenge for 2015 is to design three (3) total garments for two (2) outfits to address the theme of 18th century Colonialism.
Eligibility: Up to one (1) team entry per chapter, two (2) to four (4) students per team
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio/Garments Judged, NO on site interviews or fashion show.

10. 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. Any model design is acceptable if the model complies with the event specifications. All models are to be built and test flown before the event date.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Bring finished glider for judging.

HIGH SCHOOL EVENTS

11.Future Technology Teacher

Overview: Participants research and select three (3) accredited colleges or universities that offer technology education/engineering technology teacher preparation as a major. Each participant will write no more than one (1) page (simulated college essay) explaining why s/he would like to become a technology education/engineering technology teacher and what would constitute success in the field. In addition, each participant will develop and present a one (1)-class period activity, with a lesson plan, using the ITEEA standards for technological literacy.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

12.Manufacturing Prototype

Overview: Participants design and manufacture a prototype of a product and provide a description of how the product could be manufactured in a state-of-the-art American manufacturing facility.
Challenge: The product for 2014 is a product developed and produced in an alternative way (versus by a traditional method) that demonstrates a reduction of waste. An appropriate marketing package should accompany each product. The product-marketing package should not include the use of any copyrighted characters or images.
Eligibility: Up to three (3) teams per chapter.
Topic(s): Child's Pull Toy
Competition: Project Portfolio Judged, NO on site interviews

13.Music Production

Overview: Participants produce an original musical piece that is designed to be played during the national TSA conference opening or closing general sessions. The musical piece should be energizing, interesting, and of a spirit consistent with the Technology Student Association.
Eligibility: Up to three (3) team or individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

14.Photographic Technology

Overview: Students capture images and process photographic and digital prints that depict the current year's published theme.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): *Innovation* / See Official TSA Events Guide
Competition: Project Portfolio Judged, NO on site interviews or competition

15.Prepared Presentation

Overview: Participants deliver an oral presentation that includes audio and/ or visual enhancement based on the theme for the current year's conference.
Eligibility: Up to one (1) individual entry per chapter
Topic(s): *"Designing Your Dreams"*
Competition: See Official TSA Events Guide.

HIGH SCHOOL EVENTS

16.Problem Solving (Technology Problem Solving)

Overview: Participants use their skills in problem solving to develop a finite solution to a stated problem provided on site. Participants work as a team to provide the best solution, which is measured objectively.
Challenge: Participants must work effectively as a team to manipulate and process materials using only the tools designated. An objective measurement is used to determine the best solution to the given problem.
Eligibility: Up to two (2) teams per chapter, two (2) students per team
Topic(s): See Official TSA Events Guide.
Competition: Students will use on site materials to develop a solution to a given problem. Construction materials are provided.
BRING YOUR OWN TOOLBOX (See Official TSA Events Guide).

17.Promotional Graphics

Overview: Create a promotional design to inform and encourage participation in TSA's official community service project – the American Cancer Society (ACS).
Eligibility: Up to three (3) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews

18.Scientific and Technical Visualization (SciVis)

Overview: SciVis refers to Scientific and Technical Visualization, the graphical representation of complex scientific concepts. Participants develop a visualization focusing on a subject or topic from one (1) or more of the following areas: science, technology, engineering or mathematics.
Eligibility: Up to three (3) individual entries per chapter
Topic(s): *Science, Technology, Engineering, and/or Mathematics*
Competition: Project Portfolio Judged, NO on site interviews

19.Structural Engineering

Overview: Participants work as part of a team to build a model of a structure that is destructively tested to determine design efficiency.
Eligibility: Up to three (3) team or individual entries per chapter
Topic(s): Create a 12" Parker truss style structure
Competition: Bring completed structures and drawings for evaluation and destructive testing.

20.Technical Sketching and Application

Overview: Participants complete a written test in order to qualify as semifinalists. Semifinalists then demonstrate their ability to solve on-site engineering graphics problems using standard drafting techniques.
Eligibility: Up to two (2) individual entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Written portion is 30 minutes. Graphic portion is 60 minutes. Paper will be provided. Bring your own drawing/drafting tools.

HIGH SCHOOL EVENTS

21.Technology Bowl

Overview: TSA chapters that enter Tech Bowl are required to complete a written objective examination to qualify for the oral question/response, head-to-head team competition phase of the event.
Challenge: Participants demonstrate their knowledge of TSA leadership skills and the elements addressed in the technology content standards.
Eligibility: Up to one (1) team per chapter, three (3) students per team.
Topic(s): See Official TSA Events Guide.
Competition: Written Qualifier, Oral Head-to-Head Competition

22.Transportation Modeling (NEW!)

Overview: Participants experience the vehicle design process, from researching and conceptualizing a design, to making drawings, and building and testing a scaled model.
Challenge: The design problem for 2015 is helicopters.
Eligibility: Up to one (3) individual entry per chapter
Topic(s): Helicopters - See Official TSA Events Guide.
Competition: Project Portfolio Judged

23.VEX Robotics

Overview: The TSA VEX Robotics Competition engages middle and high school students in science, technology, engineering and mathematics (STEM) education through an exciting, head-to-head robotics contest that captures student attention and both enhances—and allows them to use—their skills in STEM areas. In addition, the competition complements the existing technology-related competitive events offered by TSA at both levels of instruction.
Eligibility: Up to two (2) teams per chapter, three (3) to six (6) students per team
Topic(s): *"Skyrise"*
Competition: VEX Competition is run in accordance with World VEX Rules.

21.Video Game Design

Overview: Participants develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging, with high artistic, educational, and social value. A working, interactive game will be submitted on a DVD for evaluation.
Eligibility: Up to three (3) team entries per chapter
Topic(s): See Official TSA Events Guide.
Competition: Project Portfolio Judged, NO on site interviews