

High School Competitive Events Overview

The following information provides only a basic description of each event. Please consult **2011 & 2012 High School Technology Activities, National TSA Conference Competitive Events Guide (on CD)** for detailed specifications and rules regarding each event.

Animatronics Participants (one team per chapter, one entry per team) demonstrate knowledge of mechanical and control systems by designing, fabricating and controlling an animatronics device that will communicate, entertain, inform, demonstrate and/or illustrate a topic, idea, subject or concept. Sound, lights and a surrounding environment must accompany the device. [Click here for a video description of this event.](#)

Architectural Model Participants (one individual or team per chapter, one entry per individual or team) develop a set of architectural plans and related materials for an annual architectural design challenge and construct an architectural model to accurately depict the design.

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

The biotechnology area of focus for 2011 is Genetic Engineering.

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

Career Comparisons Participants (one individual per chapter) thoroughly research various technology-related careers that are associated with one of the following technology areas: Biotechnology, Communications, Energy and Power, Engineering, Manufacturing, Medical Technology, Technology Education Teaching, Transportation, or Construction. After documenting the research, each student submits a cover letter and resume for the selected career and completes a formal job application. Semifinalists participate in an on-site mock interview.

Chapter Team (Written and Oral) Participants (one team of six members per chapter) take a written parliamentary procedures test in order to proceed to the semifinals. Semifinalist teams perform an opening ceremony, dispose of three items of business, and perform a closing ceremony within a specified time period. [Click here for a video description of this event.](#)

Computer-Aided Design (CAD) 2D, Architecture Participants (two individuals per state) create representations, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry. Students may be expected to animate a presentation of their entry. [Click here to view a video description of this event.](#)

Computer-Aided Design (CAD) 3D, Engineering Participants (two individuals per state) create 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product. Students may be expected to animate a portion of their model. [Click here to view a video description of this event.](#)

Construction Renovation Participants (three teams per state) develop a set of presentation boards to include plans, illustrations and finishes for a specified space. The solution must include all applicable construction systems. [Click here for the design brief.](#)

Debating Technological Issues Participants (three teams of two members per state) debate against a team/s from another chapter in order to advance to the semifinals. The teams are instructed on site to take either the pro or con side of a topic that is designated annually.

Desktop Publishing Participants (one individual per state, one entry per individual) develop a notebook that includes a tri-fold pamphlet, a three-column newsletter, and a poster. All participants (not just semifinalists) then work to solve an on-site problem that demonstrates their abilities to use the computer to design, edit, and print materials for publication. [Click here to view a video description of this event.](#)

Digital Video Production Participants (three teams perstate, on entry per team) develop a digital video/film that focuses on the given year's theme. Sound may accompany the film. The theme for 2011 is Drama. The theme for 2012 is Suspense.

Dragster Design Participants (two individuals per chapter, one entry per individual) design, produce working drawings for, and build a CO₂-powered dragster. [Click here to view a video description of this event.](#)

Engineering Design Participants (one team of three to five members per chapter, one entry per team) work as part of a team to solve a design problem. Through use of a model/prototype, display, and design notebook, the team explains in detail how it has solved the problem and the solution's impact on society and the environment. Semifinalists demonstrate the problem and solution in a timed presentation. [Click here to view a video description of this event.](#)

Essays on Technology Participants (three individuals per state) conduct research in an announced technological area and, using the knowledge and personal insights gained from this research, write a persuasive essay on one subtopic selected from two or three related subtopics designated on site.

Extemporaneous Presentation Participants (three individuals per state) give a three to five minute speech, fifteen minutes after having drawn a card on which a technology or TSA topic for a speech is written.

Fashion Design Participants (one team of two to four members per chapter) research, develop and create garment designs, garment mock-ups, and portfolios that reflect the current year's published theme. Semifinalists participate in an on-site event in which they present their potential garment designs to the judges on a TSA runway.

Flight Endurance Participants (two individuals per chapter, one entry per individual) analyze flight principles with a rubber band-powered model aircraft.

Future Technology Teacher Participants (three individuals per chapter) research and select three accredited colleges or universities that offer technology education or engineering technology teacher preparation as a major. Each participant must write a one page simulated college essay about the wish to become a teacher in either major. Participants also develop and present a lesson plan.

Manufacturing Prototype Participants (one team per chapter) 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.

Music Production Participants (three teams per state) produce a musical piece that is designed to be played during the national TSA conference opening or closing general sessions.

On Demand Video Participants (one team of two or more students per chapter, one entry per team) write, shoot, and edit a sixty second video during the conference in this on-site event.

Photographic Technology Students (one individual per chapter, one entry per individual) capture images and process photographic and digital prints that depict the current year's published theme. Twelve (12) qualifying semifinalists participate in an on-site event in which they capture digital images and utilize multimedia software to prepare a storyboard/outline and media presentation of newsworthy TSA conference activities and events.

The theme for 2011 is Doors.

The theme for 2012 is Perspectives.

Prepared Presentation Participants (three individuals per state) deliver an oral presentation that includes audio and/or visual enhancement based on the theme for the current year's conference.

Promotional Graphics Participants (two individuals per chapter, one entry each) develop and present a graphic design that can be used as a TSA recruitment tool and that includes the theme for the next year's conference. [Click here to view a video description of this event.](#)

Scientific and Technical Visualization (SciVis) Participants (three teams per state) develop a visualization focusing on a subject or topic from one or more of the following areas: science, technology, engineering and mathematics. [Click here to view a video description of this event.](#)

Structural Engineering Participants (one team of two members per chapter, one entry per team) work as part of a team, on site with supplied materials, to build a model of a structure that is destructively tested to determine design efficiency. [Click here to view a video description of this event.](#)

System Control Technology Participants (one team of three members per state, one entry per team) 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.

Technical Sketching and Application Participants (two individuals per chapter) complete a written test in order to qualify as semifinalists. Semifinalists must demonstrate their ability to solve on-site engineering graphics problems using standard drafting techniques. [Click here to view a video description of this event.](#)

Technology Bowl (Written and Oral) Participants (one team of three members per chapter) complete a written, objective test in order to qualify for oral question/response, head-to-head team competition. [Click here to view a video description of this event.](#)

Technology Problem Solving Participants (one team of two members per chapter) use problem solving skills and limited materials to develop a solution to a problem given on site.

Transportation Modeling Participants (one individual per chapter, one entry per individual), using only certain materials and following required specifications, design and produce a CO₂-powered scale model of a vehicle that fits the annual design problem and that takes appearance and performance into consideration. [Click here to view a video description of this event.](#)

Video Game Design Participants (three teams per state) 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.

Webmaster Participants (one team of three to five members per chapter) are required to design, build and launch a World Wide Web site that features the school's career and technology education program, the TSA chapter, and the chapter's ability to research topics pertaining to technology. Conference semifinalists participate in an on-site interview to demonstrate the knowledge and expertise gained during the development of the website with an emphasis on Internet and web history, web design (school, chapter and design brief pages), and research about cutting edge advances in technology. Click [here](#) for the design brief.

State Level Contests Only:

Creed Recital

Demonstrate the ability to write and recite from memory the TSA Creed.

Mousetrap Vehicle

Design, engineer, and fabricate a vehicle powered only by a mousetrap, capable of traveling the longest distance.