

2006-2007 Middle School Events Overview

AGRICULTURE AND BIOTECHNOLOGY CHALLENGE

Participants conduct research on a contemporary agriculture or biotechnology problem of their choice, document their research, and create a display.

CAREER CHALLENGE

Participants conduct research on a selected technology-related career and use the knowledge gained to prepare a resume and cover letter, to complete a job application, and to participate in a mock interview. In **2006**, choose one of these careers: Video Game Designer, Construction Manager, Technology Education Teacher, Forensic Scientist, Pipeline Welder. In **2007**, choose one of these careers: Computer Animator, Landscape Architect, Aerospace Engineer, Video Production Engineer, CADD Draftsperson.

CHALLENGING TECHNOLOGY ISSUES

Teams of two prepare and deliver an extemporaneous oral presentation with team members explaining opposing views of a technology issue, selected from a choice of three provided on site.

CHAPTER TEAM

Participants will complete a written exam covering basic parliamentary procedure, then finalist teams of six are required to perform an opening and closing ceremony, including disposition of three (3) items of business within a specified time period.

COMMUNICATION CHALLENGE

Participants will design, produce, and submit two (2) printed products. Finalists will create and design a solution to a problem given on site.

COMPUTER APPLICATIONS

Participants will complete a written exam covering basic computer literacy, make appropriate computer hardware connections, and demonstrate the use of software applications by completing an assigned task.

CONSTRUCTION CHALLENGE

Teams will submit a display that documents their leadership and technical skills used to fulfill a community need related to construction. Finalists will be interviewed.

CYBERSPACE PURSUIT

Teams will create and launch a HTML World Wide Web site that features the school's technology education program, the school's TSA chapter, and the TSA chapter's solution to a technology design brief.

DIGITAL PHOTOGRAPHY CHALLENGE

Participants will produce and submit an album and an 8" x 10" collage of digital photographs consisting of 6 color or black and white digital photographs that depict a single chapter activity or theme. Finalists will produce and edit 3 photographs on-site in accordance with the current year problem.

DRAGSTER DESIGN CHALLENGE

Participants will design and produce a CO2 powered dragster, using the materials allowed and following the required specifications.

ELECTRICAL APPLICATIONS

Participants will exhibit their knowledge of basic electrical theory by taking a written test to qualify as a finalist. Finalists will assemble a specific circuit from a schematic diagram using a provided kit and will make required electrical measurements. Finalists will explain their solution during an interview.

ENVIRONMENTAL CHALLENGE

Teams will identify and research an environmental problem that concerns their local school or community. They will plan and implement a solution to that problem, then evaluate the results and communicate the solution through a multimedia presentation.

FLIGHT CHALLENGE

Participants will create a glider that will stay in flight for the longest possible time, using the materials specified. Gliders will be launched from a provided catapult.

GRAPHIC DESIGN CHALLENGE

Participants will create and produce a one-color graphic design that is appropriate for TSA National Conference publications and other small promotional items. The design must promote the theme for the upcoming TSA National Conference. **2006** – “TSA, Breaking Down Boundaries”. **2007** – “TSA, Imagine It!”.

INVENTIONS AND INNOVATIONS

Teams will investigate and determine the need for an invention or innovation in technology. The invention can be groundbreaking or an improvement to an existing model. Ideas will be presented using a stand-alone multimedia presentation, notebook and model or prototype. Finalists will make an oral presentation

LEADERSHIP CHALLENGE

Teams will demonstrate leadership skills by working cooperatively as a team to develop a written plan of action to solve a stated problem. Finalists will be given a specified time to prepare a solution to a second problem and make a team presentation of their solution.

MANUFACTURING CHALLENGE

Teams will design and manufacture a product using material that is suitable for recycling. The chapter will locate reusable material from an industry that may help create a relationship between the local chapter and industry.

MARINE DESIGN CHALLENGE

Participants will research and present sailboat design principles and build a model sailboat that is raced in a test tank.

MECHANICAL CHALLENGE

Teams will use problem-solving skills to solve a challenge with simple machines. Participants will design, fabricate, and demonstrate their solutions.

MEDICAL TECHNOLOGY CHALLENGE

Participants conduct research on a contemporary medical technology problem of their choosing, document their research, and create a display. The steps used in the solution of the problem may be student-performed research or a re-creation or simulation of research performed by the scientific community. If appropriate, a model or prototype of the solution may be included in the display.

PREPARED SPEECH

Participants will deliver an oral presentation enhanced by audio and/or visual means, based on the current year's topic. **2006** – “Pathway to Tomorrow”. **2007** – “TSA, Breaking Down Boundaries”. (THIS IS A CORRECTION TO THE NEW MS GUIDE)

PROBLEM SOLVING

Teams will demonstrate their skills in problem solving by using critical thinking skills to develop a finite solution to a stated problem given on site.

STRUCTURAL CHALLENGE

Teams will demonstrate their skills in basic engineering techniques by designing and building a model TOWER that will hold the greatest weight.

SYSTEM CONTROL TECHNOLOGY

Teams will be given a scenario of a situation in an industrial setting. They will analyze the problem, build a computer controlled mechanical model, program the model, and explain the features of their solution.

TECHNICAL DESIGN CHALLENGE

Participants will read and interpret technical sketches, drawings, and use materials in completing a technical design test. Finalists will demonstrate their ability to solve an on-site technical design problem using standard sketching, drafting, and problem solving techniques.

TECHNICAL WRITING CHALLENGE

Participants will research an announced technological area and write a comprehensive report on a selection of three related subtopics designated on site. **2006** – “Global Warming” **2007** – “the Influence of Television Upon the Individual, the Family and Society”.

TECHNOLOGY BOWL CHALLENGE

Participants will independently complete a written objective examination. The teams with the highest combined scores will qualify for the oral head-to-head team competition phase of the event.

TECHNOLOGY TRANSFER CHALLENGE (*cancelled on state level*)

TRANSPORTATION CHALLENGE

Participants will design, engineer, and fabricate a battery-powered vehicle capable of transporting a payload over the length of an obstacle course in the shortest amount of time.

TSA MULTIMEDIA

Participants will design a stand-alone multimedia presentation to solicit support from potential business and industry supporters.

VIDEO CHALLENGE (*cancelled on state level*)

Participants will develop and submit a detailed storyboard, production plan, and videotape footage that could be used in the final production of a TSA informational video presentation.

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.

SAFETY ILLUSTRATION

Research safety needs in the technology lab, then design and create a poster that effectively communicates a safety message in visual form.