Competitive Events Overview

GEORGIA

TSA

TECHNOLOGY STUDENT ASSOCIATION ®
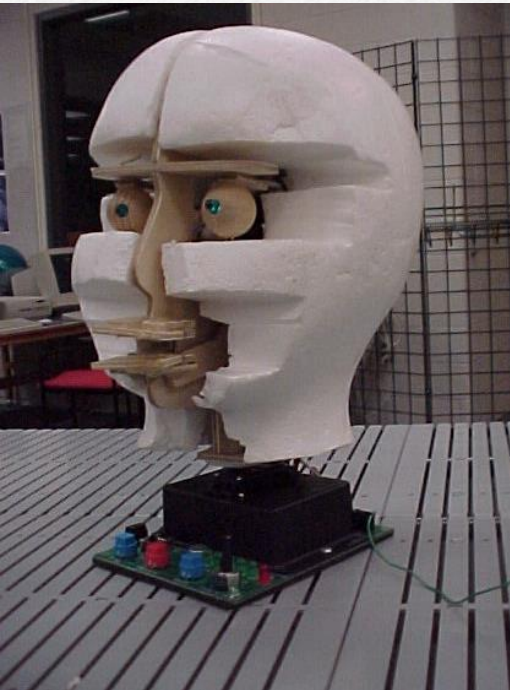
"Learning To Live In A Technical World!"

ANIMATRONICS
One team per chapter

Animatronics refers to a robotic device that emulates a human or an animal, or brings an inanimate object to "life."

- Participants will produce an animatronics device complete with an appropriate display.
- Animatronics device must use control technology in its performance.
- The device must not suggest anything that is inappropriate by language, sound or movements.
- Evaluation is based on performance, device artisanship, and documentation of design

ARCHITECTURAL RENOVATION
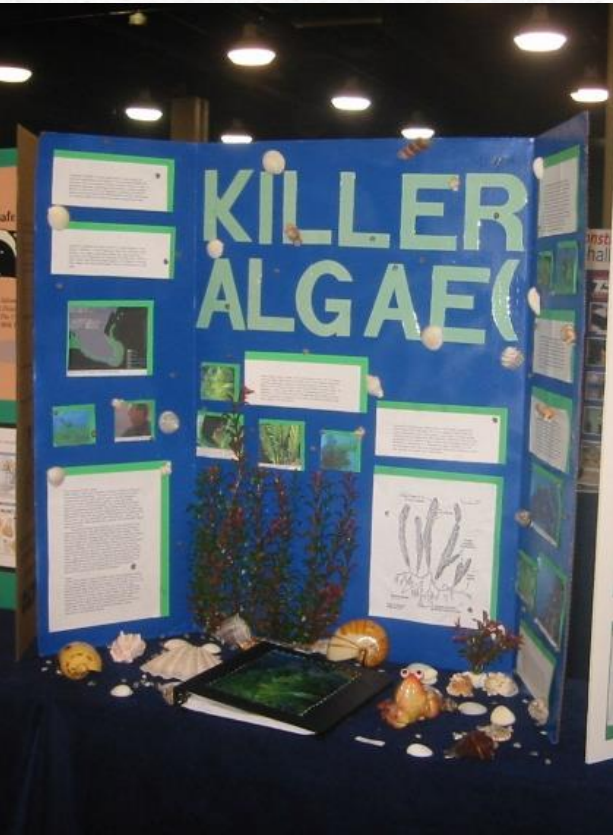## One individual or team per chapter

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. A specific design problem will be provided on the TSA website each year.

BIOTECHNOLOGY DESIGN
One team per chapter

Participants select a contemporary biotechnology problem that relates to the current year's published area of focus and demonstrate understanding of it through documented research, the development of a solution, a display, and an effective multimedia presentation.

CAREER PREPARATION
One individual per chapter

uvisor.com

During the school year participants research technology-related careers designated by the Bureau of Labor Statistics as falling in the top ten employment growth areas in the near future.

- 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.

CHAPTER TEAM
One team of six per chapter

Participants take a written parliamentary procedures test in order to proceed to the semifinals, where they:

- Perform an opening ceremony
- Dispose of three (3) items of business
- Perform a closing ceremony within a specified time period.

COMPUTER AIDED DESIGN (CAD)
2D Architecture

Jgraphix.net

Participants create representations, such as foundations, floor plans, elevation drawings, and/or details of architectural ornamentation or cabinetry.
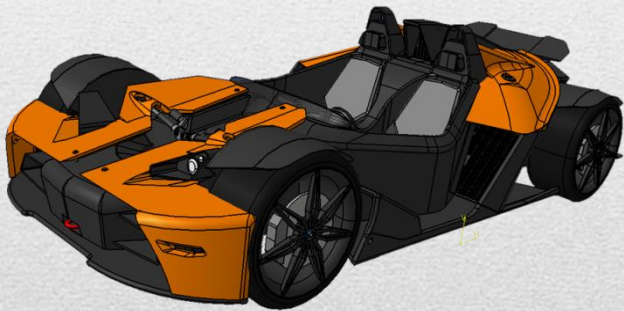
Participants may compete in CAD, 2D Architecture or CAD, 3D Engineering with Animation, but not both. Participants are limited to two (2) individuals per state.

COMPUTER AIDED DESIGN (CAD)
3D Engineering

Participants create a 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product.

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

solarisid.com

COMPUTER AIDED MANUFACTURING
one (1) team of two (2) members per chapter, one (1) entry per team

Participants design, fabricate, and demonstrate their ability to use a CNC (computer numeric control) machine to produce mousetrap car parts. Documentation and two machined samples are checked in and evaluated. Teams return for an assemble session of their entry using the TSA competition tool kit and immediately demonstrate their entry for distance.

DEBATING TECHNICAL ISSUES
Three (3) teams of two (2) members per state
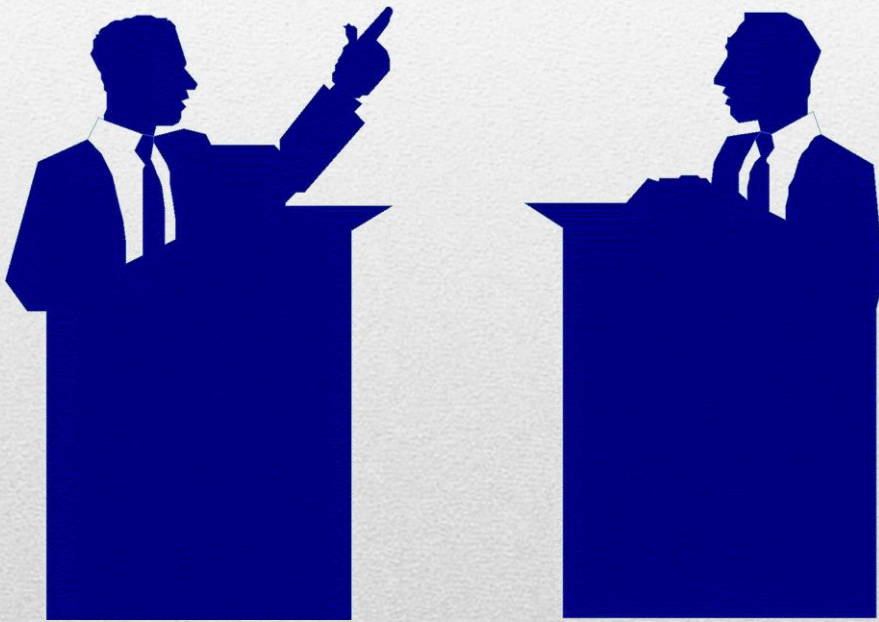
Team members will work together to prepare for a debate against a team from another chapter. The teams will be instructed to take either the pro or con side of the designated topic.

DESKTOP PUBLISHING
One individual per state

Participants produce a notebook containing a news release, a three (3)-column newsletter, and a poster. 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.

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.

DIGITAL VIDEO PRODUCTION
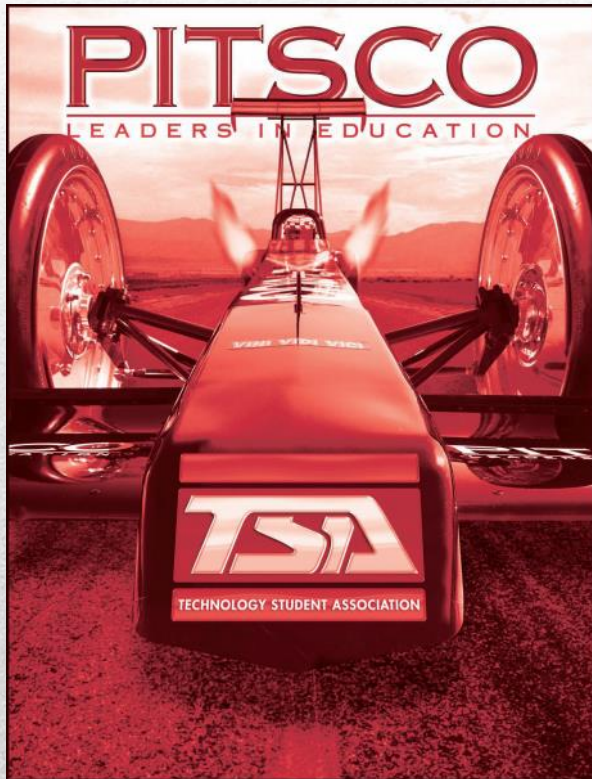## Three teams per state – GA one per chapter
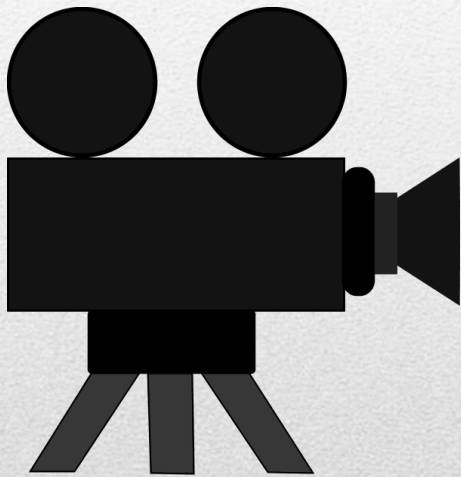
Participants develop a digital video/film that focuses on the given year's theme. Sound should accompany the film.

GET PERMISSION for use of Copyrighted music!

DRAGSTER DESIGN
Two individuals per chapter

Students design and construct a CO2 powered dragster to meet specific regulations. Overall score includes wind tunnel test score, appearance, meeting specifications, drawing and speed points.

ELECTRICAL APPLICATIONS
Two per chapter (GA Only Event)

Participants take a written test of basic electrical and electronic theory to qualify as semifinalists.

• Semifinalists assemble a specific circuit from a schematic diagram using a provided kit and make required electrical measurements.

• Semifinalists explain their solution during an interview.

ENGINEERING DESIGN
One team of three to five per chapter

- Participants work as part of a team to design and fabricate a device that will meet the specific needs of a person with a disability.
- Participants document and justify their approach and reasoning in identifying a problem and their solution's direct impact on a member of their community and on society and explain their design to judges in a timed presentation.
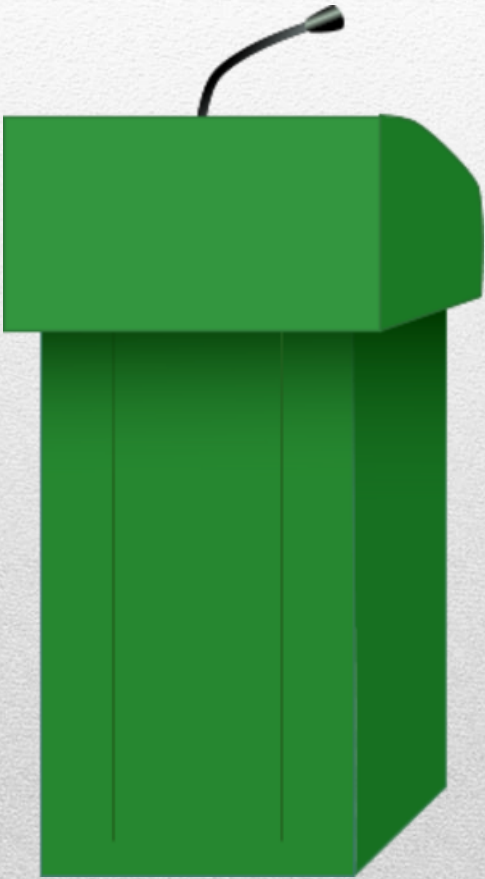
ESSAYS ON TECHNOLOGY
Three individuals per state

Participants conduct research in a published technological area and, using the knowledge and personal insights gained from this research, write an essay on one (1) subtopic selected from two (2) or three (3) related subtopics designated on site.

EXTEMPORANEOUS SPEECH
Three individuals per state

Participants give a three to five (3-5) minute speech fifteen (15) minutes after having drawn a card on which a technology or TSA topic for their speech is written.

- Be cool, calm, and collected and have a solid knowledge base about TSA and current issues in Technology.

FASHION DESIGN

Entries are limited to one (1) team of two to four (2-4) members per chapter.

Students research, develop, and create garment designs, garment mock-ups, and portfolios that reflect the current year's published theme. Twelve (12) qualifying semifinalists participate in an on-site event in which they present their potential garment designs to the judges on a TSA runway.

FLIGHT ENDURANCE
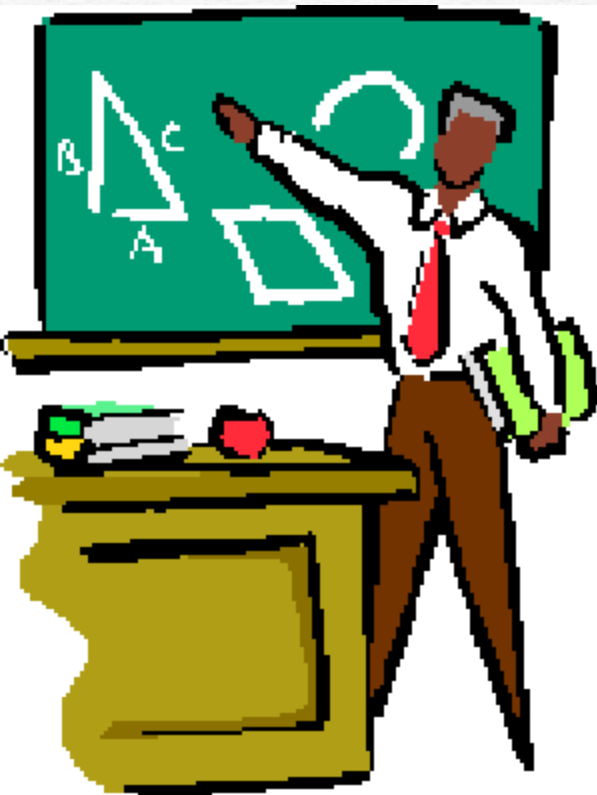## Two individuals per chapter
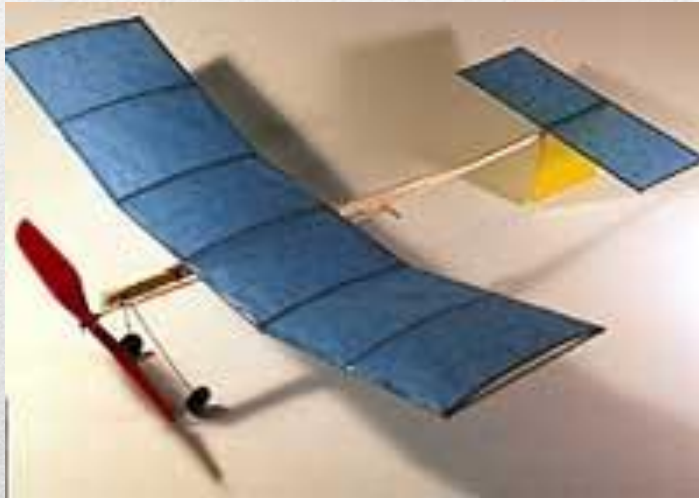
Participants build, fly, and adjust (trim) a rubber-band powered plane to make long endurance flights inside a contained airspace.

All models are built and flown and a flight log kept prior to the event date.

FUTURE TECHNOLOGY TEACHER
One individual per chapter

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 ITEA standards for technological literacy.

MANUFACTURING PROTOTYPE
One team per chapter

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 industry.

An appropriate marketing package should accompany each product. The product should not include the use of any copyrighted characters or images.

MUSIC PRODUCTION
Three per state

Participants produce a 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

Entries are limited to three (3) teams per state. Team work is strongly encouraged, but a team of one (1) member is permitted.

ON DEMAND VIDEO

One (1) team of two (2) or more students per chapter. One (1) entry per team
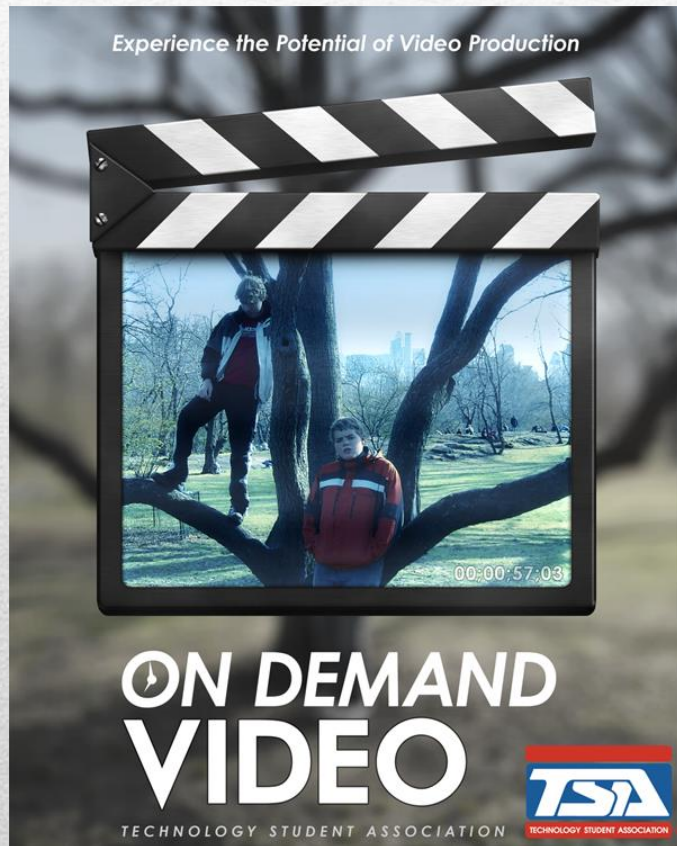
Participants write, shoot, and edit a sixty (60) second video during the conference in this on-site event. Required criteria, such as props and a line of dialogue, make the competition more challenging and will be revealed at the event orientation meeting.

OPEN SOURCE SOFTWARE DEVELOPMENT

One (1) team per chapter.

Participants work as part of a team to participate in the development, debugging, and documentation of a new or existing open source software project.

Through a multimedia presentation and entrant notebook, the team explains in detail how it has contributed to the project. The project should have educational or social value.

Semifinalists demonstrate and promote their work in a timed presentation.

PHOTOGRAPHIC TECHNOLOGY
One individual per chapter

Students capture images and process photographic and digital prints that depict the current year's published theme. Twelve (12) qualifying semifinalists participate in an on-site event in which they capture digital images and utilize multimedia software to prepare and develop a media presentation during the annual conference.
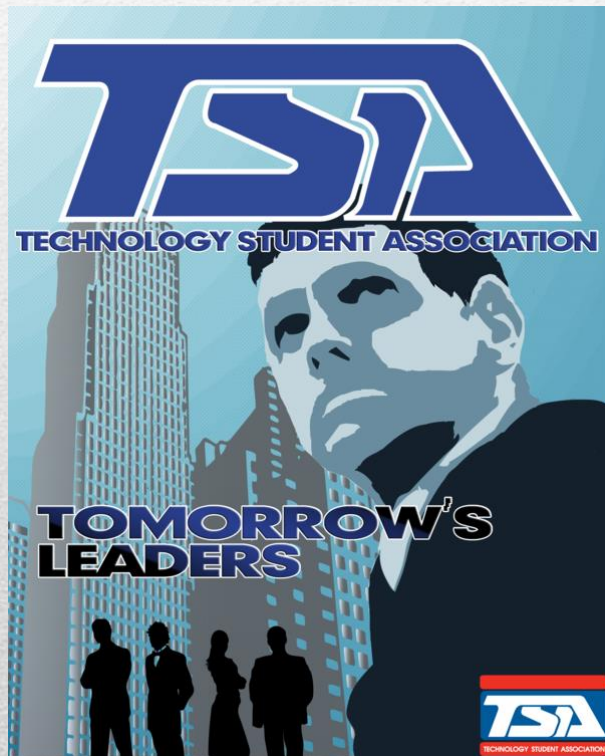
PREPARED PRESENTATION
Three per state

Participants deliver an oral presentation that includes audio and/or visual enhancements based on the current year's theme.

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PROMOTIONAL GRAPHICS
## Two individuals per chapter

Participants develop and present a graphic design that can be used to promote participation in TSA competitive events. The design will promote competitions offered in the TSA competitive events guide. Participants will choose one (1) of the three (3) competitions listed below for the given year.

SCIENTIFIC AND TECHINICAL VISUALIZATION (SciViz)

One team per chapter

SciViz 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 and mathematics.
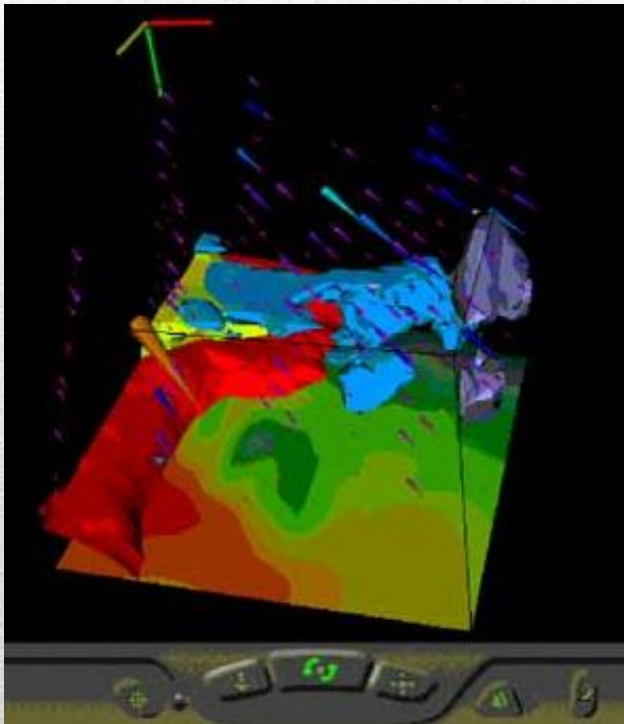
STRUCTURAL ENGINEER
## One team of two per chapter

Participants work as part of a team on site with supplied materials to build a model of a structure that is destructively tested to determine design efficiency.

SYSTEM CONTROL TECHNOLOGY
One team of three per state

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.
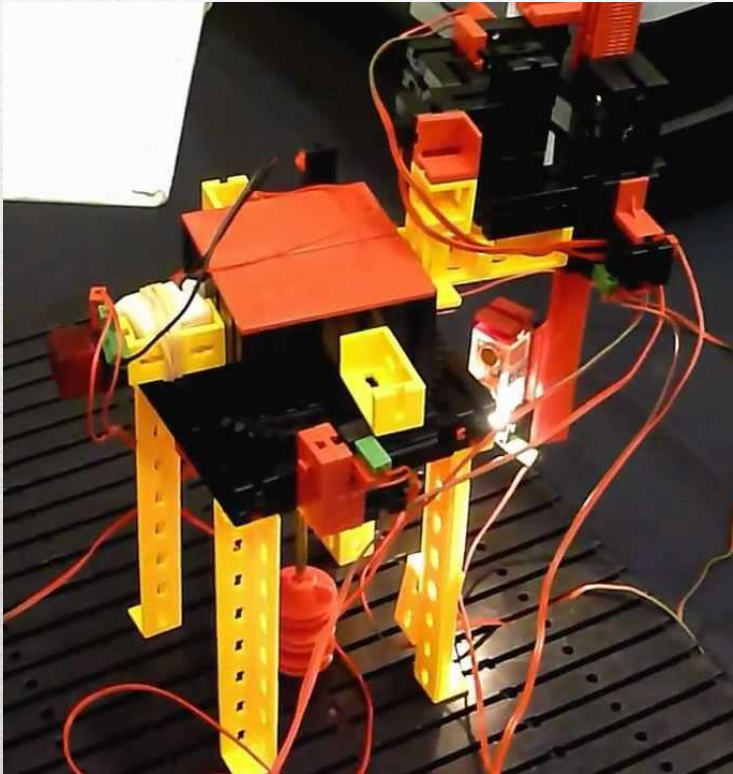
TECHNICAL SKETCHING AND APPLICATIONS
Two individuals per chapter
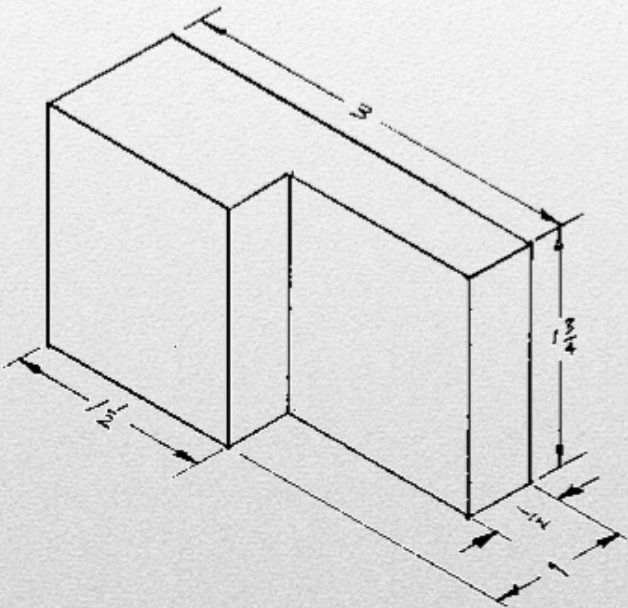
Participants complete a written test in order to qualify as semifinalists.

Semifinalists then demonstrate their ability to solve on-site engineering graphics problems using standard drafting techniques.

TECHNOLOGY BOWL
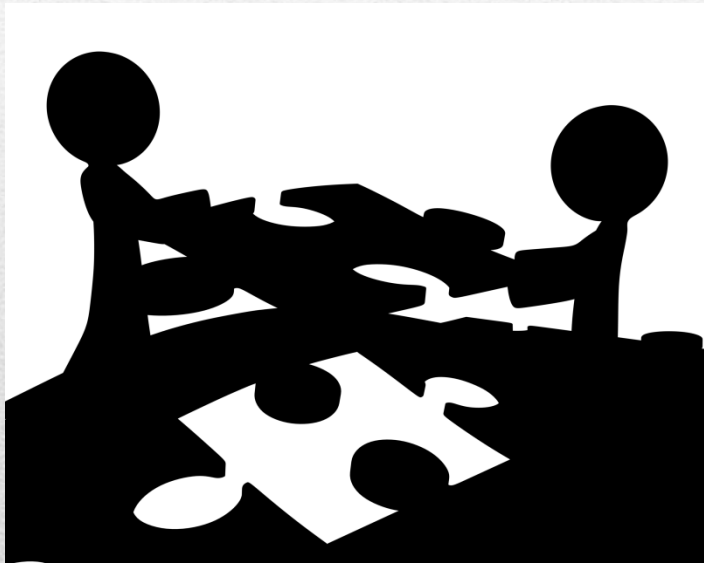## One team of three per chapter

A written test is given to determine top ten teams. Head-to-head elimination tournament competition determines the winner.

Awards also given to the top individual test scores….(not money)

TECHNOLOGY PROBLEM SOLVING
One team of two per chapter

Participants work together to develop and create a solution to a problem using the limited materials provided and the tools allowed.

Completed solutions will be objectively measured and judged to determine the best and most effective solution for the stated problem.
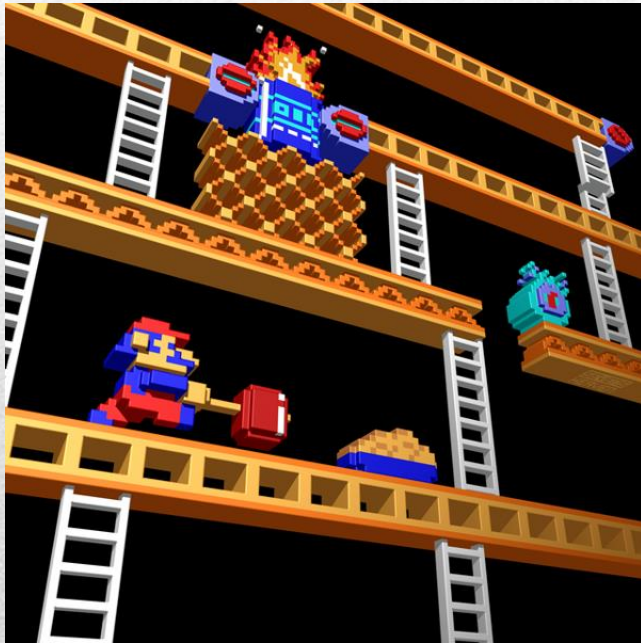
TRANSPORTATION MODELING
One per chapter

Using only certain materials and following required specifications, participants design and produce a CO_2-powered scale model of a vehicle that fits the annual design problem and that takes appearance and performance into consideration.

VIDEO GAME DESIGN
Two individuals per chapter

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.

WEBMASTER
One team of three to five per chapter

Students create a webpage for the technology education program and for the TSA chapter. In addition, students provide a solution to a design brief that changes annually. 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.

OUTSTANDING CHAPTER

Overall State Championship

Chapters receive points for placing 1st through 10th in individual and team events. 1st place receives 10pts, 2nd receives 9pts and so forth, through 10th who receives 1pt.

All accumulated points are tallied after all events are done and the top 10 chapters are recognized with plaques for 10th through 4th place and the top three chapters receive trophies.

OUTSTANDING STUDENT
One individual per chapter

This is a Georgia-only event.

Chapters may nominate one individual member by completing the required forms. Finalists are interviewed on-site during the State Conference.

In **ALL** of the events you enter…

- Read ALL of the rules
- Be the expert of the event.
- If you are stuck and have questions… **ask**. (Trust me, advisors aren't as dumb as they look!)
- Sweat the details
- Double check all regulations
- Get someone else to check your work.
- WORK ONE MORE HOUR THAN YOUR COMPETITORS DO!

Good Luck!