

Parent Competition Committees: Mr. Brown and I can only do so much and look over so much. To have a parent spear head a competition, help the team with things like spell checking and just understanding the directions, that can make a difference between a 5th place and a 1st place, or being disqualified vs. getting a top ten. If you have experience/skills in any of the competitions, it would also be super helpful to have you in to help train our students. This does not include parents DOING the competitions in any way. More so, helping our students develop the skills they need to do the competition at the best level they are capable of. Below, please find a list of all competitions, their description, and the skill sets that would be helpful for that specific competition. Please note- if you do not have that skill set- NO WORRIES! You can still help a team and not know ANYTHING about that topic (you will learn along with the team). Like I said, sometimes it is just helping them proof read, stay on top of their own deadlines, and helping them understand their CEG (Competitive Event Guide).

COMPETITION DESCRIPTIONS/ HELPFUL SKILLS: First will be listed a description, next will list skills that parents can have that would be super helpful in training our specific team.

Cycle 1: **career prep:**

- Create a resume and a cover letter like you are applying for an actual job in the tech field. If you make semifinals, you have to go for an interview and the judges pretend to be the company you applied for and they do an actual job interview.
- Helpful Parental Skills : resume writing, cover letter writing, interview skills, public speaking, management, proof reading

challenging tech issues

- A team of 2 students work together to prepare and deliver a debate-style presentation with participants explaining opposing views of a current technology issue.
- Helpful Parental Skills: public speaking, speech, debate, critical thinking, organization, research.

Coding

- Participants will demonstrate their knowledge of computer science and coding by taking a test. Semifinalists will further demonstrate their programming knowledge by participating in an onsite a programming challenge in scratch.
- Helpful Parental Skills: Coding, Programming, Computer science, study skills/strategies, organization

cyber security

- Participants complete a Cybersecurity exam covering general cybersecurity vocabulary and knowledge needed to execute tasks commonly performed by all levels of cybersecurity professionals. Using digital presentation software, participants prepare a presentation, addressing a specific cybersecurity issue, to a group of hypothetical corporate board members
- Helpful parental skills: Cybersecurity, study strategies, presentation skills, public speaking, proof reading

digital photo

- Participants produce and submit a digital photographic portfolio that relates to the annual theme. They must learn adobe photoshop. Semifinalists participate in an onsite photographic challenge and a presentation/interview.
- Helpful parental skills: adobe photoshop, photography, editing, proof reading, interview prep, presentation skills.

essays on tech

- Participants conduct research on specific subtopics from a broad technology area posted as part of the annual theme. Using a previously prepared note card as an approved resource, participants draft an outline of the subtopic randomly selected onsite at the conference. Semifinalists write an essay on that subtopic.
- Helpful parental skills: Essay writing, proof reading, organization

forensic technology

- Participants take a test of basic forensic science theory to qualify for the semifinal round of competition. Semifinalists participate in an onsite forensic skills demonstration.
- Helpful parental skills: forensic science, study strategies, organization, presentation skills, Interview skills

leadership strategies

- Participants prepare for and deliver a presentation about a specific challenge that officers of a TSA chapter might encounter. Semifinalists follow the same competition procedure but must respond to a different chapter challenge.
- Helpful parental skills: public speaking, organization, team work, acting

prepared speech

- Participants deliver a timed speech that relates to the theme of the current national TSA conference. Semifinalists and finalists are determined using the same competition procedure.
- Helpful parental skills: essay writing, organization, public speaking, speech, proof reading

problem solving

- Participants use problem-solving skills to design and build a solution to an onsite challenge. Solutions are evaluated using measures appropriate to the challenge, such as elapsed time, horizontal or vertical distance, and/or strength.
- Helpful parental skills: organization and helpings students prepare ahead of time by studying various potential engineering challenges they may encounter and having them try them out either in class or at home.

tech bowl

- Participants demonstrate their knowledge of TSA and concepts addressed in technology content standards by completing an objective test. Semifinalists participate in a head-to-head, team competition. Basically jeopardy, we have a team of 3 up against another team of 3. Everything tech, science, math and some history, and TSA facts are game.
- Helpful parental skills: study strategies, help team prep/practice

technical design

- Participants demonstrate their ability to use the technical design process to solve an engineering design problem provided onsite at the conference. Required elements of the entry are presented in a portfolio that includes technical drawings for a minimum of three viable solutions.
- Helpful parental skills: Engineering, technical design, critical thinking/creative problem solving, proof reading.

Vlogging

- Participants use digital video technology to create original content about a pre-determined technology theme. Semifinalists compete in an onsite challenge to produce additional video(s) based on specified criteria, such as provided props, lines of dialog, and topics.
- Helpful parental skills: video editing, video production, script writing, public speaking, vlogging, proof reading, organization

Cycle 2:

computer aided design (CAD) foundations

- Participants demonstrate their understanding of CAD fundamentals by creating a two-dimensional (2D) graphic representation of an engineering part or object and answering questions from evaluators about their entry.
- Helpful parental skills: CAD, Engineering, technical design, proof reading, interview skills

electrical applications

- Participants take a test on basic electrical and electronic theory. In response to an onsite challenge, semifinalists assemble a specified circuit from a schematic diagram, make required electrical measurements, and explain their solution in an interview.
- Helpful parental skills: electrician, electronics, circuitry, interview skills, engineering

flight

- Participants submit a documentation portfolio and fabricate a glider designed to stay in flight for the greatest elapsed time. Semifinalists use their technical drawing skills to construct a glider that is flown onsite.
- Helpful parental skills: Technical drawing, engineering, proof reading, research skills, construction

JSS (junior solar sprint)

- Participants apply STEM concepts, creativity, teamwork, and problem-solving skills to design, construct, and race a solar-powered model car. Documentation of the process is required. Learn more about JSS, then register via an Army Educational Outreach Program (AEOP) portal to begin the JSS journey.
- Helpful parental skills: engineering, understanding gear ratios/aerodynamics, organization, proof reading, interview skills.

promotional marketing

- Participants create and submit a marketing portfolio and required elements that address the annual theme/problem. Semifinalists complete a layout and design assignment for evaluation.
- Helpful parental skills: marketing, research, advertising, event coordination/management, graphic design

structural engineering

- Participants apply the principles of structural engineering to design and construct a structure that complies with the annual challenge. An assessment of the required documentation and the destructive testing of the structure (to determine its design efficiency) determine both semifinalists and finalists. Usually they make a bridge of some kind out of thin balsa wood strips and it gets a stress test/weights added and the bridge that can hold the most weight scores more points.
- Helpful parental skills: just helping students read the guidelines and understand what they can/cannot do. Construction, engineering, technical drawings

system control

- In response to a challenge presented onsite at the conference, participants analyze a problem (typically one in an industrial setting), build and program a computer-controlled mechanical model to solve the problem, explain the program and the features of the mechanical model solution, and provide instructions for evaluators to operate the device. Students use VEXIQ Robotics to build the onsite challenge
- Helpful parental skills: robotics, problem solving, engineering, interview skills

dragster

- Participants design, draw, and construct a CO₂-powered dragster that adheres to the annual specifications, design and documentation requirements, and theme. Semifinalists participate in an interview and compete in a double-elimination race.
- Helpful parental skills: engineering, wood work, 3d printing/CAD design, interview skills, and just understanding the CEG and all parameters that the student can build a car within.

mechanical engineering

- Participants design, document, and build a mechanical device (mousetrap car) that incorporates the elements of the annual theme/problem – and then race the car. Finalists are determined based on an evaluation of the documentation portfolio, the race exit interview, and the race placement.
- Helpful parental skills: engineering, problem solving/critical thinking, proof reading, interview skills

microcontroller design

- To address the annual theme/problem, participants design and create a working digital device, document the development process, and demonstrate their product as part of a presentation. This year, students have to make an interactive gift box.
- Helpful parental skills: electronics, microcontrollers, critical/creative thinking, presentation skills, public speaking.

TEAMS

- TEAMS (Tests of Engineering Aptitude, Mathematics, and Science) is an annual science, technology, engineering, and mathematics (STEM) competition that challenges middle school and high school student teams to work collaboratively to solve real-world engineering challenges, applying their math and science knowledge in practical, creative ways. They must write an essay and compete in an onsite engineering challenge.
- Helpful parental skills: essay writing/ proof reading, engineering, and overall helping student prepare for possible onsite challenges and how to work together as a team.

Cycle 3:

Biotechnology

- To address the annual theme, participants select a contemporary biotechnology issue and demonstrate understanding of the topic through their documented research and an original display. Semifinalists participate in an interview. This year's theme: Biotechnology that supports sustainable cosmetics packaging to reduce waste to landfills
- Helpful parental skills: research, organization, writing, proofreading, interview skills, critical/creative thinking.

Community service video

- Participants create a video that depicts the local TSA chapter's involvement in a community service project. Semifinalists deliver a presentation on the project and participate in an interview.
- Helpful parental skills: research, organization, interview skills, proofreading, writing, video editing, videography.

construction challenge

- Participants submit a scale model, display, and documentation portfolio for a design that fulfills a community need related to construction. Semifinalists deliver a presentation about their entry and participate in an interview. They have to actually construct something for the school or community, and then show via the model what they did.
- Helpful parental skills: construction, research, organization, interview skills, proofreading, writing.

children's stories

- Participants create an illustrated children's story based on the annual theme (An interactive or pop-up book that focuses on making friends in-person). The entry product is a physical storybook of artistic, instructional, and social value. Semifinalists read their story aloud and participate in an interview.
- Helpful parental skills: writing, proof reading, organization, interview skills, publishing, book binding, illustration (by hand or digital), interview skills.

data science and analytics

- Participants conduct research on the annual topic (Determine the potential "movie success" of a fictitious feature film based on different public metrics, such as, but not limited to box office revenue, date of release, movie genre (selected by the team), movie production budget, and more.), collect data, use analytics to assess the data and make predictions, and document their work in a portfolio and a display. To address a challenge presented onsite at the conference, semifinalists review specific data sets, provide insights, make predictions, and present their findings for evaluation.
- Helpful parental skills: data science/analytics, researching, writing, interview skills, proof reading.

inventions/innovations

- To address the annual theme (Create a product that enhances the daily productivity of a middle school student.), participants research a need - and brainstorm a solution - for an invention or innovation of a device, system, or process. Participants document their work in an interactive display and the creation of a model/prototype. Semifinalists deliver a presentation about their work and participate in an interview.
- Helpful parental skills: research, critical thinking, proof reading, writing, interview skills.

mass production

- Participants manufacture a marketable product that addresses the annual theme (Pet supply storage tower). The development of the product prototype is documented in a portfolio that presents participant knowledge and skills related to the mass production process. Through a demonstration of the prototype and an interview, semifinalists support the viability of the prototype.
- Helpful parental skills: research, writing, proof reading, engineering, interview skills, public speaking, manufacturing, construction

medical technology

- Participants conduct research on a contemporary medical technology issue related to the annual theme (Medical Drugs and Genetics: Why do some people respond to medicines differently than others?), document their research, create a display, and build a prototype. Semifinalists deliver a presentation about their entry and participate in an interview.
- Helpful parental skills: research, writing, proof reading, presentation skills, public speaking, interview skills

off the grid

- Based on the annual theme (Design a home for a family of four (4) in a country (of your choice) in which a boreal forest (taiga) biome is found. The house must be designed for an area that does not have access to a power grid. In addition, the house must include a renewable energy source, one (1) agricultural system, and must solve one (1) problem that is specific to the area.), participants conduct research on a sustainable architectural design for a home in a country not their own. Participants produce a portfolio and create a display and a model. Semifinalists present their design and participate in an interview.
- Helpful parental skills: research, writing, organization, proof reading, presentation skills, interview skills, designing, engineering, home construction

stem animation

- Participants design and create a STEM animation video and documentation portfolio to address the annual theme/problem (Robotics in automobile manufacturing). Semifinalists present their animation and explain the elements of their portfolio/entry.
- Helpful parental skills: animation software, script writing, proof reading, public speaking/interview skills

video game design

- Participants design, build, provide documentation for, and launch an E-rated, online game on a subject of their choice. Onsite at the conference, semifinalists deliver a presentation and participate in an interview to demonstrate the knowledge and expertise gained during the development of the game.
- Helpful parental skills: video game design, presentation skills, interview skills, public speaking, proof reading, organization

website design

- To address the annual challenge (Topic: Website for food preparation recipes

Challenge – Develop an original website with simple recipes for young cooks (MS and HS age). It should have an interactive element that will ask a few questions to direct the user to the desired ingredients and recipe) , participants design, build, provide documentation for, and launch a website that incorporates the elements of website design, graphic layout, and proper coding techniques. Semifinalists participate in an interview to demonstrate the knowledge and expertise gained during the development of the website.

- Helpful parental skills: website design, organization, general design, organization, proof reading, interview skills.