



National TEAMS Problem Solving Competition

Overview:

Using materials on the approved list and provided onsite at the competition, students design, build, and test a model device to improve the environment. Students record and document evidence of device effectiveness.

Challenge:

Participants work as a team to design and build a device to improve the environment. Participants will also answer related math questions.

Prior Knowledge:

This completion is designed to be completed onsite, with no prior preparation. Knowledge of the following topic areas may be helpful:

- ▶ Thermodynamics
- ▶ Optimization
- ▶ Engineering Geometry
- ▶ Damping and Lag Effect

Procedure:

1. Competitors report to the event area at the time and place stated in the conference program.
2. The challenge is distributed.
3. Teams may use a scientific or graphing calculator that does not connect to the internet. Calculators are not supplied by TSA.
4. Teams will bring the required materials with them to the challenge and will also be supplied with additional materials necessary to complete this challenge. A materials list will be posted on the TEAMS website by May 1st.
5. Instructions will be given by the event coordinator once teams are seated. The timed competition will begin following the verbal instructions.
6. Teams will have 90 minutes to complete the design challenge.

Regulations:

1. Each team will have 4 to 8 members.
2. All team members must stay in the event area while working on the challenge.
3. Only the materials listed on the materials list may be brought to the competition site by participants. All other materials used in this competition are supplied by TSA.
4. The internet may not be accessed or used during the competition.

5. Smart phones running calculator emulation software are permitted. During the problem-solving challenge, all communication on the smart phone must be turned off (e.g. wifi, cellphone data, bluetooth). Smart phones are subject to inspection by the event judges at any time and violations of this rule will result in immediate disqualification. Devices such as computers and electronic tablets are not permitted.
6. Only competing students will be allowed in the TEAMS Problem Solving competition room. Parents, teachers and other guests are not be allowed in the competition room.

Competition Attire:

- Shirt or blouse: button-shirt with a turned down collar or a polo/golf shirt. The official TSA shirt (royal blue) is preferred.
- Dress skirt or pants: (unacceptable: jeans, baggy pants, exterior pocket pants, shorts)
- Socks: black or dark blue (males only)
- Shoes: dress shoes or dress boots (unacceptable: athletic shoes, combat, or work boots); females only may wear open-toe shoes or sandals.

Evaluation:

Points will be earned based on performance, test results, design elements, and math score.