



TEAMS National Problem Solving Competition

Overview:

Using only the materials on the approved list (each team brings these items with them to the competition) and approved materials provided onsite at the competition, students design, build, and test a model device to improve the environment. Students record and document evidence of their device effectiveness.

Challenge:

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

Prior Knowledge:

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

- Air Quality Engineering
- Laboratory Measurement and Reporting
- Estimation and Approximation

Procedure:

1. Team captains (one student per team) will report to the TEAMS captain meeting for the event overview. This meeting will take place on June 21st – see the TEAMS schedule for time and place. *Note: the TEAMS Problem Solving competition takes place on June 23rd.*
2. Participants report to the event area at the time and place stated on the TEAMS schedule.
3. Teams will bring the required materials as listed on the TEAMS Problem Solving Materials List and will also be supplied with additional materials necessary to complete this challenge.
4. The challenge is distributed at the beginning of the competition period.
5. Teams may use a scientific calculator that does not connect to the internet. Calculators are not supplied by TSA.
6. An announcement will be made to begin the timed competition.
7. Teams will have 90 minutes to complete the 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. The internet may not be accessed or used during the competition.
4. Communication devices (including, but not limited to, cell phones, tablets and computers) may not be accessed in any way during the competition. This includes, but is not limited to, taking pictures, sending or receiving messages, calls and emails. Communications with visitors, parents and/or coaches during the competition is prohibited. Violation of this regulation may result in disqualification.

Competition Attire:

- Shirt or blouse: button-shirt with a turned down collar or a polo/golf shirt. [The official TSA shirt](#) (royal blue) may be worn (unacceptable: t-shirts, halter tops, tank tops)
- Dress skirt or pants: (unacceptable: jeans, baggy pants, exterior pocket pants, shorts)
- Shoes: dress shoes worn with dark socks, hosiery (optional); open-toe shoes or sandals are acceptable (unacceptable: athletic shoes; flip-flops; military boots; or work boots)

Evaluation:

Points will be earned based on performance, test results, design elements, and other criteria as identified in a scoring rubric.

2017 National TEAMS Problem Solving Competition

Materials List

Each team must bring to the competition a clear plastic Ziploc bag (gallon size or larger) with the following items for the national TEAMS Problem Solving competition. Quantities listed are per team.

- One 4 oz. bottle quick drying tacky glue – (note: must be quick drying)
Example: [Scotch® Quick Drying Tacky Glue, No-run Formula, 4 oz.](#)



- A maximum of four mini spring clamps –
Example: [Mini Spring Clamps](#)



- One 9"x11" sheet of 220 grit sand paper
Example: [220 Grit Multipurpose Sandpaper](#)



- One Roll Duck Brand tape (1.88 inches x 20 yards)
Example: [Duck Tape](#)



- Scissors – 2 pair
- Pens and pencils – enough for all team members