

Brainstorm (45 Minutes - Coach Scheduled Event)

Description: Teams will receive a challenge at the competition. The challenge could be anything. For example, building a contraption, creating an ecosystem for an animal, or traveling to a distant star. The team will not have any advance notice of the topic.



Participants per Team: 2 to 3

Spirit of the competition:

- It is a rules violation if coaches, parents, mentors, or spectators enter the competition area or communicate with the team members at any time during the competition. Violation of this rule will place the team below all other teams.

Safety Requirements: Safety glasses must be worn by all participants during any testing of any device.

Teams Need to Bring:

Safety glasses labeled ANSI Z87.1+ (impact rated)

- If a team does not have the required eye protection, they will be given the opportunity to obtain it, time allowing, but will not receive extra time.
- If a team is unable to obtain eye protection, the team will not compete and will receive a no-show score.



- An Internet enabled device for researching the chosen topic and presenting their findings. Teams may bring one device per student. (Computer strongly recommended)
- Division A does not have technology to loan to students. Teams must provide their own for this event. It is up to the team to ensure they have connectivity at the competition site. Division A will not have onsite technology troubleshooting services.

Materials Provided at Event:

- Building materials if needed
- Classroom tools such as scissors and rulers if needed.

The Competition:

- The team of students will have a maximum of 30 minutes to construct a specified device and research, define and create a presentation for the challenge.
- All teams will be given the same building objective or challenge problem.
- The instructions will identify a device to build or a problem to solve:
- Examples of devices are the tallest tower to hold a baseball at the top; the longest bridge to hold a small milk carton full of sand in the center; the longest cantilever to hold a chalkboard eraser at the end; or a catapult to fire a marshmallow the furthest distance.

Challenge example: An Elephant is hungry and heading to your school cafeteria to eat lunch before you. How will you make it leave before eating everyone's lunch?

- If needed each team will be given tools and a bag containing the exact same type and number of building materials. Examples of materials are paper cups, drinking straws, paper clips, string, tape, paper,

thumbtacks, and Popsicle sticks. Materials are not limited to this list. The actual materials provided may be entirely different, but materials will be items that are readily available household items.

- Only those materials contained in the bag may be used to build the device.
- If the device is tested using any separate item(s) (e.g., support a load, launch a projectile, or roll a ball) item(s) of the specified characteristics (dimensions, mass, shape) will be available for each team to use in constructing/testing their device. Unless specifically stated in the instructions, devices must be freestanding and may not be attached to a tabletop, floor, ceiling, or other support.

Scoring:

Building Challenges

- Specific scoring will be provided to the teams at the event. Teams will be given the scoring information, including how ties will be broken, before they begin building.
- Teams will have 2 minutes to present their building solution.
- The dimensions specified in the building instructions will be measured and recorded as accurately as possible by the event leader.
- Devices that are required to accomplish a task (e.g., support a load for so many seconds) will be placed in tiers depending on whether they accomplish the task.
- Devices that accomplish the task will be ranked higher than all devices that do not.

Presentation Challenges

- Specific scoring will be provided to the teams at the event. A rubric will be provided for the task.
- Teams will have 2 minutes to present their challenge solution.
- Possible scoring points
- Is there evidence of team collaboration during the presentation?
- Have they created a creative solution to the challenge?
- Is there a solution based on scientific principles?
- Has the team acknowledged any limitations to their solution?

Tiebreaker

- Tiebreaks for either the building or the presentation challenge will be stated at the beginning of the event.

Possible Resources:

Division A will not release previous tests, or the exact resources used by the Event Supervisor or test writer for any events. The listed resources are meant as a starting point. It is up to the competitor to research further.

- Preparing for this event, teams may want to visit [SciOly.org](https://www.scioly.org) and study different building events.
- [Presentation Tips | DO-IT](#)