

Duct Tape Challenge

1. **DESCRIPTION:** Teams will arrive at the competition and be given a set of materials, including Duct Tape, and a mystery task. They will then have a given amount of time to complete whatever task they are assigned, such as building the tallest tower, widest bridge, most buoyant boat, etc. The task parameters will be clearly outlined for the teams. At the end of the build time, teams will test their structures to determine the winner.
2. **ESSENTIAL STANDARDS ALIGNMENT:** Science as Inquiry
3. **TEAM OF UP TO:** 2
4. **MAXIMUM TIME:** 50 min.
5. **TEAMS:** Teams must bring something to write with and may also bring a ruler, scissors, and a stopwatch.
6. **EVENT LEADERS:** Will provide challenge instructions and all materials needed for the event.
7. **SAFETY REQUIREMENTS:** None.
8. **IMPOUND:** No
9. **THE COMPETITION:**
 - a. **LOCATION:** This event should occur in a large room or in multiple rooms at the same time. As much as possible, teams should be given the same type of area to build (e.g. space on the floor, flat desktop). Students may not stand on tables or chairs or each other to construct their devices.
 - b. **MATERIALS:** Each team will be given the exact same type and quantity of materials, including a roll of duct tape. Examples of supplemental materials may be: Styrofoam bowls, drinking straws, paper clips, cups, string, paper, and popsicle sticks. Materials are not limited to this list. The actual materials provided may be entirely different. Only those materials given to the competitors may be used to build the structure.
 - c. **TASK:** The event leader will provide task instructions that identify the task to complete. The instructions will not be released until the beginning of the competition. Example tasks are: a parachute that descends the slowest, longest bridge span to support a tennis ball without sagging, lightest boat that holds the most weight, tallest sail that stands up to a fan, longest/highest/slowest ramp to deliver a ball to a destination, plane that flies the furthest/longest, etc. Tasks are not limited to this list.
 - d. **TIME:** The team of students will have a maximum of 35 minutes to complete the specified task. The remainder of the time will be used for judging.
 - e. **ATTACHMENT:** Unless specifically stated in the task instructions, devices must be freestanding and may not be attached to a tabletop, floor, ceiling or other support.
10. **SCORING:**
 - a. Devices will be judged according to the guidelines set forth by the event leader. The dimensions specified in the task instructions will be measured and recorded as accurately as possible by the event leader.
 - b. At the event leader's discretion, devices that are required to accomplish a task (e.g. support a load for so many seconds) may either be given an assigned number of points for completing the task, or be tiered so that all devices completing the task rank above those that do not. This must be specified in the task instruction sheet.
11. **EVENT RESOURCES:**

See the Event Resources tab on our website (ncscienceolympiad.ncsu.edu) for instructions, videos and more.