

MYSTERY ARCHITECTURE

1. **DESCRIPTION:** At the beginning of the event, teams will be given a bag of building materials and instructions for designing and building a device that can be tested.
2. **EVENT PARAMETERS:** Each student may bring 1 scissors, 1 ruler, and 1 pair of pliers. No other materials, tools, notes or resources are permitted.

NUMBER OF PARTICIPANTS: 2

APPROXIMATE TIME: 40 minutes

3. **THE COMPETITION:**

- a. This event should occur in a large room or in multiple rooms at the same time. No one other than the judges and contestants will be allowed in the building/judging area.
- b. Each team will be given a bag containing the same 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. Only those materials contained in the bag may be used to build the structure. The bag may not be used. No other materials or adhesives may be part of the finished device.
- c. The instructions will identify a Primary Dimension, a Secondary Dimension and whether the device must support a load (and for how long). The instructions will also state, for both the Primary and Secondary Dimension, whether a larger or smaller dimension will be ranked higher.
- d. If the device must support a load, a separate load of the same size and weight as used for testing will be provided to each team so they can incorporate it into their building plans. **Judges may use one "official" load for testing all devices. When finished building students must remove the load from their device until immediately prior to the testing by the judges. When the judges are ready to test the device, the students will place the load in/on it.**
- e. Some examples of devices and Primary Dimensions 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 the **shortest** boat/barge to float holding a baseball without sinking. Devices are not limited to these examples. Secondary Dimension examples: width of tower base or width of bridge or cantilever. The students will not know the assignment until they begin the competition.
- f. The team of students will have a maximum of 40 min. to construct the specified device.
- g. Unless specifically stated in the instructions, devices must be freestanding and may not be attached to a tabletop, floor, ceiling or other support.

4. **SCORING:** Devices will be ranked according to the following rubrics:

- a. The Primary and Secondary Dimensions specified in the building instructions will be measured and recorded as accurately as possible by the judges **prior** to placing the load (if required) on the device.
- b. Devices that are required to support a load will be placed in one of two groups depending on whether or not they support the load for the specified time. Devices that support the load will be ranked higher than all devices that do not.
- c. Devices within each group will be ranked by their Primary Dimension.
- d. The Secondary Dimension will be used to break any ties.