

## **Naked Egg Drop**

**DESCRIPTION:** A team will construct a device that will be placed on the ground level to prevent an egg from breaking when dropped from increasing heights.

**EVENT PARAMETERS:** Contestants may bring up to 2 pairs of scissors, a ruler, and a pair of pliers. No other tools or materials are allowed. The **Supervisor** will provide and **announce** which kind of eggs will be used and provide a plumb line for each height used in the competition. Teams are responsible for removing the plumb line from the drop zone **if they wish**. **Drop Heights will be posted 30 minutes prior to construction time.**

**A TEAM OF UP TO: 2**

**TESTING TIME: 10 min.**

**IMPOUND: Yes**

### 1) **MATERIALS:**

- a. Each team will be given a container of building materials. All containers will contain the same materials. The contents may include, but **are not limited** to: paper cups, drinking straws of any size, Popsicle sticks, wooden splints, tongue depressors, string, masking tape, rubber bands, pipe cleaners (chenille stems), paper, bubble wrap, Styrofoam, etc. This is only a **sample list**; the actual materials supplied may be different.
- b. Only those materials in the container may be used to build the device. The container may not be used. No other materials or adhesives may be part of the finished device.
- c. The devices must be freestanding and may not be attached to the floor. Nothing may be added or placed on the shell of the egg. Nothing may be added or placed in the device in order to help the egg attach to the device.

### 2) **THE COMPETITION:**

- a. The tournament director will specify a time period during which all contestants will be given 30 minutes to construct a device with materials supplied on-site that will cushion the egg. The same two students who built the device must be the ones to test the device.
- b. The supervisor will measure and record the height of devices prior to testing.
- c. Each team will be given one large Grade-A raw or hard-boiled chicken egg, if they observe cracks or defects, another egg will be given to the team. This egg must be used in all of their drops.
- d. The event supervisor will select 3-4 dropping heights, each higher than the previous one.
- e. Multiple floor drop sites are preferable to a single drop site so the drop site does not get backed up.
- f. A team has 10 minutes to complete all drops, including the following student actions: **replacing dislodged materials**, aligning the drop, refreshing the device without adding any additional materials, removing the egg from the device for inspection, and movement of device between drops.
- g. If the drop sites on the floor are at different locations (preferable), the device will be placed on a sturdy moveable platform (not one that acts as a cushion) to assist in moving the device.
- h. A team will begin at the lowest height and continue to next higher level, if the egg has survived the drop. Drop levels may not be skipped. A raw egg is considered to survive as long as it does not leave a wet spot on a paper towel. A hard-boiled egg is considered to survive as long as the supervisor does not detect any cracks. If the egg bounces out of the device, students may continue to the next drop as long as the egg has survived.

**SCORING:** The score will be determined by subtracting the height of the device in millimeters (mm) from the last height (measured in mm) that the egg survived – high score wins. Teams that do not survive the 1st drop will be ranked after teams that do according to the height of their device subtracted from zero. The team with the lower competition time will break ties.