

**EPICS Time Team Community Outreach  
John Witherspoon Middle School  
Engineering Club**

**Lesson Plan:**

**Egg Drop Competition**

**Objective:**

To encourage analytical methods and engineering design.

To learn about forces, and, in particular, gravity and the effects of increasing height in free fall.

**Materials:**

(Per Team of 2-3 Students)

1 Raw Egg

1 meter Masking Tape

15 Plastic Drinking Straws

1 Piece 8.5" x 11" Paper

Antibacterial Spray and Paper Towels for Clean-Up

**Procedure:**

Brief introduction to free fall motion, gravity, and forces.

Form groups of 2 or 3 students each, preferably with varying levels of engineering skills and background. Inform students of the rules, and allow students 30 minutes to work on their egg cushioning system.

Conduct vertical drop test.

Award prizes to the most successful egg crate designs.

**Competition Rules:**

Students are allowed 30 minutes to construct a form to protect their raw egg from a vertical drop of 2 to 4 meters. Available construction materials are masking tape, plastic drinking straws, and 1 piece of paper; be strict on the amount of materials distributed to each group, as all groups should have equal resources.

At the end of the 30 minutes, the vertical drop test will begin, initially dropping the egg from 1 m, 2 m, 3 m, etc., until a champion—the most resilient egg/crate form—is declared.