STEM Event Module:
THE AMAZING EGG DROP

UAA College of Engineering
University of Alaska Anchorage

Grade Level: All ages and grade levels

Volunteers: 2-3

Space: Supply table, student work area, and drop zone

Time Commitment:
- 1-2 hours of prep
- 10-20 minutes per child to complete the activity

Objective:
Students use provided materials to design, build, and test a container to protect an egg when dropped from a great height.

Provided Kit Materials:
- 1 Lesson Plan
- 1 Egg Drop Directions poster board
- 1 Table Banner

Additional Materials Needed:

Construction Materials Kits (1 kit per student)
- 1 Brown paper bag
- 2 Drinking straws
- 2 feet of yarn
- 1 Paper bowl
- 2 Sheets of paper

For the Table
- Eggs (1 per student)
- Snack size Ziploc bags (1 per student)
- Scotch tape
- Stapler
- Scissors
- Clorox Wipes
- Paper towels

For the Drop Zone
- High visibility tape or caution rope
- Tarp
- Ladder (optional)

Preparation & Setup:

- **Assemble Kits:** Combine materials for students into brown paper bags to make kit distribution easier.
- **Work Station:** Place banner and instruction sign at workstation. You may consider covering the table with paper in case of egg mess.
- **Drop Zone:** If your event location has a convenient egg drop location available, such as a stairwell, balcony, or window, this may be the easiest potential setup. Otherwise, a step ladder may be used. It is important to rope off or tape off the landing zone for the eggs using high visibility tape. You will also want to lay down a plastic tarp to prevent egg mess on the floor.

Running the Activity:

Provide each student with a bag of materials, an egg, and a snack sized Ziploc bag. Draw attention to the activity rules on the sign:

- *The goal is to build a container that will protect your egg when dropped from a great height.*
- *You may only use the materials provided in the construction materials kit. You do not have to use all of the materials provided.*
- *The egg must be sealed inside the snack sized Ziploc bag.*
- *You may take as long as you would like to design and build your egg drop container.*
- *An event volunteer must help you when dropping the egg.*
- *If your egg survives the fall, you could win a cool prize!*

*Tip: to minimize risk of egg mess, it is recommended that volunteers seal the egg into the Ziploc before handing it to the student.

Judging & Awards:

Students whose eggs survive the drop win a prize or have their names put into a drawing for a larger prize.

Safety Tips:

Have one volunteer supervise the egg drop zone so that:

- No one walks through the zone while an egg is being dropped
- Any egg mess is cleaned up quickly and appropriately
- Children who get raw eggs on their hands go wash them with soap and water
- Eggs that survive the fall get returned to the table

If using a ladder to drop the eggs, it is recommended that an adult drop the egg for the student. If using a stairway, balcony, or window, it's helpful to have a volunteer supervise students.

Follow Up:

If facilitating this activity in a classroom, or in an event structure that allows follow up to the activity, use these discussion questions to guide students through reflection and learning:

- Did your crash-test egg survive the fall? Why do you think that is?
- What was the strongest part of your design?
- What was the weakest part of your design?
- What would you do differently if you built a prototype again?

Classroom Extensions:

For older students and/or classroom settings, consider using The Amazing Egg Drop to teach the Engineering Design Process. For more resources and information, visit www.uaa.alaska.edu/engineering.