**Introduction:**

The egg drop project is an engaging way to get students involved in engineering a design. After a discussion of safety features, students experiment packaging an egg to make a design that will allow it to fall from two stories high without cracking.

**Group Size**:
  2-3 students per group

**Learning Objectives:**

 Students will choose appropriate packaging materials to fit an egg into a package measuring less than six inches on any side and protect it from a two story fall.

Students will recognize differences in successes and failures of the packaging materials.

Students will understand how results can turn out differently when similar or identical materials are used.

Students will be able to relate packaging an egg to everyday activities (car safety, football gear, bicycle helmets, etc.)

**Guiding Question:**

what materials and design can be used to protect an egg from breaking when dropped from the second story of a building.

**Materials:**

 each group will need a box or container not larger than six inches on any side, packaging materials and a raw egg

**Procedures:**

1. Lead the class in brainstorming about the safety features used for race car drivers, skaters, football players, etc. How are each protected from strong impacts and what materials are used.

2. Students then discuss ideas for materials that can be used to protect breakable objects when they are transported.

3. Inform students of their task: To design a container that can cushion the fall of an egg, with the container no more than six inches on each side.

4. Have the students pick teams of 2-3 students and have each team brainstorm on the materials and design for their container.

5. give the students a few days to gather their materials and encourage them to try out their designs at home before the day of the drop.

6. The drop: Before each package is dropped from the height to the sidewalk, the team should explain to the class their packaging process and concept while the other teams record this information.

7. After each egg is dropped, the package should be opened to check the condition of the egg and recorded for later analysis.

**Assessment:**

Students will write a paper to explain the outcome of their egg drop, and the success and failure of their design, as well exploring ways in which they might improve upon their design. They will assess the design of the other teams, evaluating best and worst choices giving any suggestions to improve the packaging of those that broke. The students will also make a pie graph using Excel to chart the results of the entire class.

**Answer Key or Rubric:**

Thorough understanding of the project and how it relates to real life.

**Benchmark or Standards:**

SC.912.P.12.2