Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Great Egg Drop Experiment—containers need to hold eggs easily. Containers are not made around the eggs.**

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**Objective/Purpose:** The purpose of this experiment is to design and engineer a container that can protect your egg from breakage from a fall of at least 1 story or about 6 meters.

**Hypothesis**:

Form a hypothesis about your egg drop container using an “IF/THEN” statement.

**Materials list**--List all the materials you will need to build your container:

**Sketch/Design**: Sketch the interior (inside) and exterior (outside) of your container. Please include measurements of the containers—**length, width and height.**

**Interior** **Exterior**

**Egg Drop Data:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Date** | **Mass of container (kg)** | **Distance of drop (m)** | **Time (s)** | **Speed (d/t)** | **Break****(y/n)** | **Momentum (mass\*velocity)** |
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**Design Changes: If your egg breaks please describe what happens and how you would modify your design. Include new sketches and measurements:**

**Interior** **Exterior**

Any New materials?

**Discussion Questions and Analysis**:

1. Who had the best egg drop container and why do you think it was the best?
2. Calculate the force of each of the containers when they hit the floor: Force=mass x acceleration.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Mass (kg)** | **Acceleration (m/s^2)** | **Force (F=ma)** |
|   |   | 9.8 |   |
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1. Out of the containers that held surviving eggs what were some common characteristics they shared in their designs?
2. What containers had the highest force upon impact with the floor yet the egg inside survived? Why do you think the eggs survived?