**Momentum and Impulse Activity Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per \_\_\_\_**

The following activity is designed to address the Nebraska State Standard:

SC.HS.1.1.C Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. Assessment is limited to qualitative evaluations and/or algebraic manipulations.

**Directions**: Using the materials provided, design and build a device that minimizes the force on a raw egg to prevent it from breaking during a collision. The length and width of the device are restricted to size of the carton.

DAY 1:

Phase 1--30 minutes--Get together with your lab triad and design a device that will minimize the force on an egg within a carton. Build the device.

Phase 2--20 minutes--Test your device to see the maximum height it can be released from before the egg breaks. Begin at 50 cm and repeat moving back at 10 cm increments.



DAY 2:

Phase 3--40 minutes--Momentum & Impulse Discussion and Practice

DAY 3:

Phase 4--20 minutes--Refine your original design and build a new carton. Test the new carton to see if your results improve! Send your results to Mr. Smith and Mrs. Sjuts.

**Materials**

Egg

Milk cartons

Styrofoam

Bubble wrap

Cotton balls

Plastic bags

Ramps

Carts

Paper bags

Rulers

**Picture of Scenario**

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Draw a sketch of your final design and justify why you designed it the way you did!

Reflection Questions:

1. What worked well with your original design?

2. What worked poorly with your original design?

3. What was the major improvement you made?