Egg Drop Basket

Goal:

You are going to construct a "basket" that will catch and standard egg and not break it. (If it is leaking it is broken)

Background (and hints):

- Drop heights: 1 meter, 2 meters, 3 meters, 4 meters, and 5 meters (in that
  - This means that you will have to drop the SAME egg 5 times!
- You will have to drop your egg into the basket from a long ways away. Make sure that you can hit the target.
- You have to get the egg out of the basket.

Material:

Stir Stick (20)	Elmer's Glue - Only for connective purposes	Masking Tape (1 meter) – Only for connective purposes
Standard grocery bag	Popsicle sticks (25)	String (1 meter)
Toothpicks (20)	Small paperclips (10)	Large paperclips (5)
Printer paper (5 sheets)	Standard Zip-lock bag (1)	Ruler
Marbles (2)	Dixie Cups (4)	Styrofoam cup
Straws (10)	1 bonus Item	

Day 1
- Brainstorm ideas of what would be good to use in the apparatus and WHY!!
- Draw 3 rough drafts of what your basket will look like. (Labeled)

Day 2
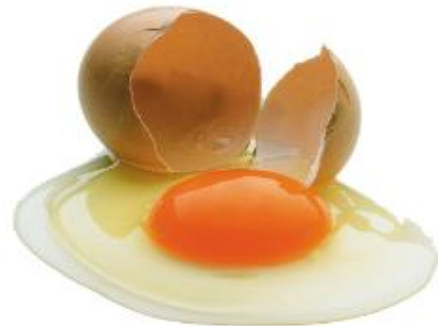- Start construction of your basket.

Day 3
- Continue work on the baskets

Day 4
- Finish baskets and test

Day 5
- Go down to the gym and test your baskets

Bonus Items (supplied by you)

- Cardboard – 1 piece – size of book
- 15 oz of water (no container)
- 3 sheets of standard tissue paper
- 2 sheets of Newspaper
- 10 cotton balls
- 6 oz of PB
- 7 cm x 7 cm x 2 cm – Foam
- 10 Tissues
- 4 extra sheets of paper

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Requirements:

Your group will...
- o record the **time** for each drop
  - ▪ You should have 3 people timing so you can find the average time of the drop
- o record the **distance** that the egg fell
- o Find the **average velocity** for each drop
- o Make a labeled diagram of the basket
  - ▪ 3 sides
  - ▪ It needs to look nice (use rulers, protractors, outline circles...)
  - ▪ It needs to be roughly to scale
- o Put the time, distance, and average velocity in a data table
- o Show math for average times and average velocities
  - ▪ This may be hand written
- o Keep a **detailed** journal of the work that each person did each day (type this before handing it in)

Sample data table

Distance ( )	Time( )	Velocity( )
1		

Questions:
1. Which trail do you think had the highest force? Explain.
2. How do Newton's 1st, 2nd, and 3rd Laws apply? Be specific. (Use examples)
3. What could have done better next time? (If your egg did not break, what did you do better than the other groups?) Be VERY specific.
4. If you could steal 2 ideas from other groups, what would they have been and why.

Rubric:
- • Data Table
- • Math
- • Diagram
- • Group work (teamwork)
- • Use of class time
- • Journal
- • Basket
- • Questions