Science, Engineering, Technology & Math

DESIGN IT!

Class Structure

Week #1:

- Naked Egg Drop (2 Days)

Week #2:

- Egg Drop (2 Days)

Week #3:

- Parachute Egg Drop (2 Days)

Week #4:

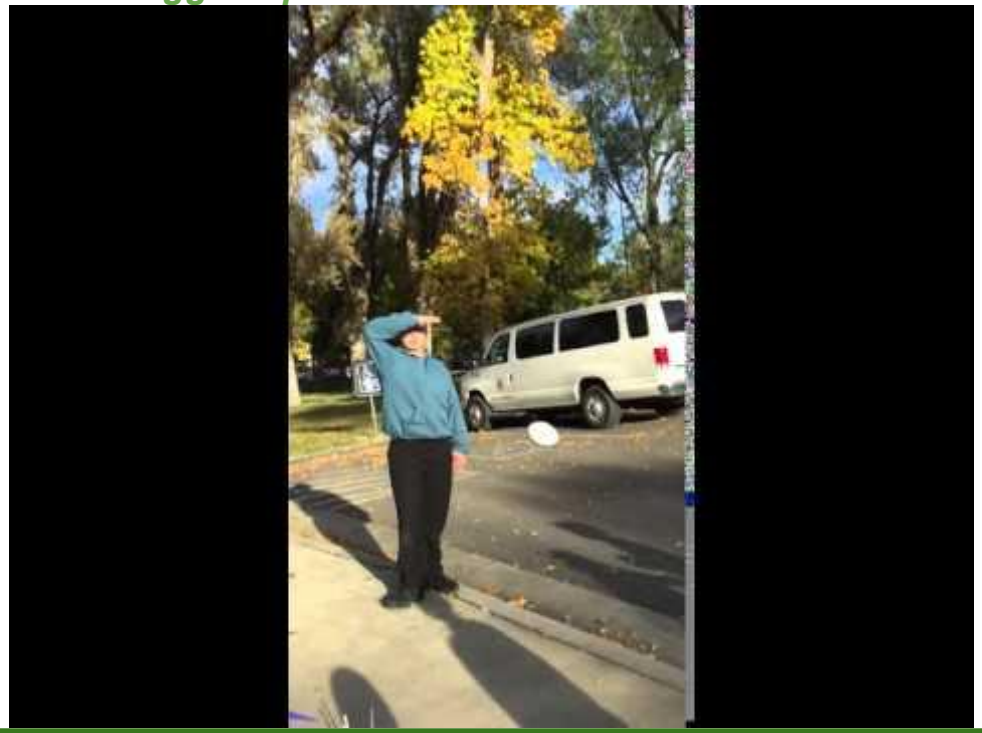
- Bungee Jump Egg Drop (1 Day)
- Discuss physics of egg drops and begin structure (1 Day)

Week #5:

- Bungee Jump Egg Drop Structure
- Issac Newton discussion / Laws of Motion

Week #6: Finish-up all projects / Tri-Folds

Week #1: *Naked Egg Drop*



Objective: build a structure that will catch a “naked” egg dropped from a height of 8 feet

I gave the kids the following instructions:

- *Build a structure that will catch a “naked” egg dropped from a height of 8 feet.*
- *If the egg cracks, your structure failed!*
- *The winner got a candy prize. We did not talk about the physics of the egg drop at this point.*

To complete this quest, they were given:

- *1 small box*
- *1 “naked “egg*
- *20 sheets of paper*
- *10 straws*
- *2 sheets of bubble wrap*
- *tape*

Week #2: *Traditional Egg Drop*

This is not our experiment...I forgot to take pictures this week!

Objective: build a structure around an egg that will protect it from a height of eight feet

I gave the kids the following instructions:

- *Build a structure that will protect an egg dropped from a height of eight feet.*
- *The egg cannot crack or break.*
- *You must work in pairs.*

To complete this quest, they were given:

• *1 egg* • *20 straws* • *10 small popsicle sticks*	

Week #3: *Parachute Egg Drop*

Objective: build a parachute structure that will protect an egg dropped from a ten foot structure

I gave the kids the following instructions:

- *Build a parachute structure that will protect an egg from cracking from a ten foot drop*
- *You are to work in pairs*

To complete this quest, they were given:

- 1 egg
- 1 small cup
- 2 plastic grocery sacks
- 3 feet of yarn

Week #4: *Bungee Egg Drop*

Objective: create a bungee drop for a "naked" egg that, when dropped from a certain height, will reach within two inches of the floor without cracking the egg.

I started this project by teaching them about the physics of the egg drop. We discussed Newton's Laws of Motion and potential and kinetic energy. At first, we used coins instead of eggs while testing our bungee jumps in order to avoid a lot of cracked eggs. This first experiment was a precursor to our Science Summit project. They were to follow up by constructing the structure that would hold the egg during its bungee jump.

They were allowed:

- *1 small box*
- *1 "naked "egg*
- *1 pair (or a few pairs…) of nylons (we used knee-high pairs, but I think that a full leg would have been better)*
- *as much paper as they wanted*
- *as much tape as they needed*

Pro Tips

- It was really good for the kids to work in groups. Sometimes I would let them choose their own, but the times that I chose their groups were good bonding experiences.
- Incorporate the science aspect of the class into the discussion while they are working on their projects. When I did this, their projects turned out better and they were more successful!
- Be patient. Don’t correct them. Their projects will not turn out sometimes...and you will break a lot of eggs.
- Have the materials ready before the class begins. If not, prepare for chaos.

Resources:

I got most of my material from my own childhood experiences! There was a TV show called “Zoom” that was very popular when I was little. I explored the Internet and found their website! It was an excellent resource. You could write into the show with your classes’ experiences!

http://pbskids.org/zoom/activities/build/