NEWTON'S FIRST AND SECOND LAW STATIONS

- 1. Place the card on top of the beaker. Make sure there is enough space to give one edge of the card a good flick without smacking your finger on the glass/cup.
- 2. Place a single coin on top of the card so that it rests over the cup's opening.
- 3. Flick an exposed edge of the note card. Don't flick the card from underneath. Flick directly from the side of the card's edge.
- 4. Observe what happens to the coin.
- 5. Repeat steps 1-4, add pennies to each trial and notice what happens as more pennies are added.

1. To prepare for this experiment, stack 4 pennies one on top of the other so that you form a tower of pennies

2. Place the stack of pennies on top of your textbook or on the floor so that you have a smooth, slick surface.

3. Aim another penny at the bottom of the stack of four pennies and give it a good hard flick with your finger or hand. What happens?

4. Flick a stack of two pennies into a stack of four pennies. What happens?

- 1. Bend your elbow and place your hand at your ear, so that your forearm is perpendicular to your face.
- 2. Place a penny on the flat portion of your elbow.
- 3. Throw your arm forward slowly and try to catch the coins with the same hand.
- 4. Repeat, this time moving your arm quickly enough to catch the coin.
- 5. Compare the results from the slow and fast trial.

 Push the car with a small amount of force with the object on top toward the wood block. Observe what happens.
 Increase the force that you push the car with the object on top. Observe what happens. Repeat several times.
 How does this demonstrate the importance of seat belts?

https://www.youtube.com/watch?v=Avj7Z0CXIFE

Watch the Spinning Egg Video and respond to the reflection questions:

- What is the difference between the two eggs?
- What happens when the scientist spins them? Why is this significant?

- 1) Compare the mass of the piece of paper and the rock.
- 2) Drop the wadded up piece of paper and the rock at the same.
- 3) Observe what happens. Did they land at approximately the same time?
- 4) What acceleration do you think is pulling both of these objects down at the same time?

- 1) Send each car down the ramp at the same time. One car should have more mass than the other car.
- 2) Which car went farther? Why do you think this relates to Newton's Second Law?

- 1) Drop the wadded up piece of paper and the normal paper at the same time.
- 2) Which one hit the ground first? Why do you think this happened?

- 1) Roll the ball towards the dominoes. Observe what happens.
- 2) Roll the wadded up paper toward the dominoes. Observe what happens.
- 3) How does this relate to mass and force in Newton's Second Law?

NEWTON'S SECOND LAW: STATION #5

- Drop the heavy ball through the book and paper set up.
 What do you notice happens?
- 2) Drop the light ball through the book and paper set up. What do you notice happens?
- 3) How does this relate to Newton's Second Law?