**8th Grade Choice Board Options**

**(Choose 3 activities to complete from groups 1 and 2 and choose 1 activity from group 3 for a total of 4 activiites for this week.**

**GROUP 1**

* Explain how seatbelts prevent people from excessive movement in a car during an accident. Include the terms inertia, force, and motion
* Push an object (toy car, ball, etc) the same distance across 3 different surfaces like a carpet, rug, smooth floor, concrete, etc. Determine how many seconds it takes for the object to travel the distance on its own after being pushed. Graph your results (surface vs time). Explain your results including the words force and friction.
* A 6-foot tall man weighing around 200 pounds is running the ball on the football field. Another player about 5 foot 5 inches weighing 150 pounds is trying to tackle him. Will he be successful? Include the words force and mass in your answer.
* Using the people in your house, put half the people on one team and the other half on another team. Using a rope engage in a game of tug-of-war. Before the game starts, create a prediction of which team will win. After the game is over, compare the results to your prediction. Explain why you were right or wrong. Include the terms mass, balanced and unbalanced force in your answer.
* Create a model or activity using any materials you may have to demonstrate Newton’s First Law. Explain what you created and how it relates to Newton’s First Law.
* Sam has 3 balls, a ping pong ball, a softball, and a basketball. If he applies the same force to each ball, predict which one will have the greatest acceleration and which will travel the greatest distance? Use one of Newton’s Laws to explain your choice.
* Newton’s Third Law says that for every action, there is an equal and opposite reaction. Find or create a phenomenon (real life event) that demonstrates Newton’s third law. Explain why you chose that phenomenon.
* Choose a sport. Decide which one of Newton’s Laws is most at work during this sport. You may choose more than one. Describe the action and explain how the law or laws apply.
* Claim: ***A toddler kicks a tennis ball with a certain amount of force. The distance the tennis ball traveled would be greater if the ball had more mass.*** Do you agree or disagree with this claim? What evidence do you have to support (agree with) or refute (disagree with) it?
* Claim: ***If a toddler and a grown man both kick the same ball as hard as they can, the ball will travel a greater distance when the grown man kicks it because he applied greater force.*** Do you agree or disagree with this claim? What evidence do you have to support (agree with) or refute (disagree with) it?

**GROUP 2**

* Write a description of some of your daily activities that include the demonstration of Newton’s First Law.
* Watch a cartoon, video, commercial, etc. Look for Newton’s Second Law in action. Describe what you saw and how it demonstrates Newton’s Second Law.
* Create a short story about what you would like to do when this quarantine is finished. Within the story, show actions that demonstrate all 3 of Newton’s laws.
* You’re in a contest with another student to see who can kick a ball the farthest. You can choose any type of ball in any weather conditions. You also can choose whoever you want to kick the ball. Describe the type of ball you would choose, the weather conditions, and describe the build of the person you choose to kick the ball so that you can win the contest.
* Create a line graph that simply shows the relationship between speed vs distance and velocity vs acceleration. Think about if one increases, what will happen to the other.

**GROUP 3**

This set of assignments will be review from the previous standard and the elements therein:

**S8P4. Obtain, evaluate, and communicate information to support the claim that electromagnetic (light) waves behave differently than mechanical (sound) waves.**

* Create a Venn diagram that compares and contrasts mechanical and electromagnetic waves.
* Write an explanation of how the density of a medium effects wave behavior.
* When a rock is thrown into a body of water, waves are created. The waves closest to the rock are stronger and larger than the waves farther away from the rock. Ask 5 scientific questions related to this phenomenon.
* In a few short sentences, describe the relationship between the electromagnetic spectrum and energy.
* Identify and describe instruments or equipment where light waves are reflected, refracted, and transmitted through various materials