**HMH Unit 1-Lesson 3- Newton's Laws of Motion**

-use this document to take notes from the Pear Deck of HMH or during class

-use these notes as a reference when completing homework, classwork, and lab assignments as well as when preparing for assessments

**HMH Unit 1, Lesson 3, Exploration 2-4-Newton's Laws of Motion**

-read the content, figures/pictures and captions

-complete questions that DO NOT require typing (DO all MC, drag and drop, move tiles)

-use the reading to complete the following notes (content is NOT always in order of the notes)

**Newton's Laws of Motion**

| **Law** | **Statement of Law** | **Impact on motion** |
| --- | --- | --- |
| **First** | **Impact of Friction on First Law:** |  |
| **Inertia** | **Definition:**  **Impact of mass on inertia:** | |
| **Second** | **Impact of Friction on Second Law:** |  |
| **Third** |  |  |

**Math Practice**

Formulas:

v = d/t a = Vfinal – Vinitial/t **F = ma** w = mg

g = 9.8 m/s2  N = 1 kg\*m/s2

**Newton’s Laws of Motion**

1. A speedboat pulls a 55 kg water skier westward across the lake. The force causes the skier to accelerate at 2 m/s2. Calculate the net force that causes this acceleration.

1. What is the net force on a 1000 kg object accelerating at 3 m/s2 North?
2. What net force is needed to accelerate a 25 kg cart at 14 m/s2 west?
3. Find the force it would take to accelerate an 800 kg car at a rate of 5 m/s2.
4. What is the net force acting on a 0.15kg hockey puck accelerating at a rate of 12 m/s2?
5. What is the acceleration of a 7 kg mass if a force of 68.6 N is used to move it toward Earth?
6. What force is necessary to accelerate a 1,250 kg car at a rate of 40 m/s2?
7. Zookeepers carry a stretcher that holds a sleeping lion. The total mass of the lion and the stretcher is 175 kg. The lion’s forward acceleration is 2 m/s2. What is the force necessary to produce this acceleration?
8. What force is necessary to accelerate a 70 kg object at a rate of 4.2 m/s2?
9. If a 4500 kg car is traveling westward with an acceleration of 35.2 m/s2, what is the force acting on it?