**Unit 2 Standards**

**S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.**

a. Analyze and interpret data to identify patterns in the relationships between speed and distance, and velocity and acceleration.

b. Construct an explanation using Newton’s Laws of Motion to describe the effects of balanced and unbalanced forces on the motion of an object.

c. Construct an argument from evidence to support the claim that the amount of force needed to accelerate an object is proportional to its mass (inertia).

**Unit 2 Vocabulary**

|  |  |
| --- | --- |
| Speed | Velocity |
| Acceleration | Rate of Acceleration  (9.8 m/s/s) |
| Reference Point | Motion |
| Newton’s 1st Law of Motion | Newton’s 2nd Law of Motion |
| Newton’s 3rd Law of Motion | Force |
| Friction | Static Friction |
| Sliding Friction | Air Resistance |
| New Force | Gravity |
| Mass vs. Weight | Momentum |
| Balanced Force | Unbalanced Force |
| Terminal Velocity | Inertia |

**Formulas:**

F=ma F=(mv**f**-mv**i**)/t F=mg

Speed = distance/time

Velocity = distance/time and direction

Acceleration = (final velocity – original velocity)/time

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