Vocabulary: Sled Wars

Vocabulary

- Acceleration – a change in speed or direction.
  - Acceleration is measured in meters per second per second, or m/s^2.
  - Acceleration can mean either speeding up or slowing down. An object moving at a constant speed but changing its direction is also accelerating.
- Energy – the ability to cause changes, apply a force, or do work.
  - Energy can exist in many forms. It can be stored or used.
  - Energy can be changed to another form, but it can never be created or destroyed.
  - The SI unit of energy is the joule (J).
- Friction – a force that works against motion as surfaces rub together.
  - Friction causes sliding objects to slow down and stop.
- Kinetic energy – the energy an object has because of its motion.
  - The faster an object moves, the greater its kinetic energy is.
  - The formula for kinetic energy is $KE = \frac{1}{2} m \cdot v^2$, where m is mass and v is velocity (or speed).
- Mass – the amount of matter in an object.
  - Mass is measured in kilograms (kg). A kilogram is about 2.2 pounds.
- Momentum – a measure of how difficult it is to stop a moving object.
  - Momentum is the product of an object's mass and velocity, $p = m \cdot v$.
- Potential energy – the energy an object has because of its position or shape.
  - The higher an object is placed, the greater its *gravitational potential energy*.
  - The formula for gravitational potential energy is $PE = m \cdot g \cdot h$, where m is mass, g is gravitational acceleration, and h is height.
- Speed – how quickly an object is moving.
  - For example, if an object moves 5 meters in 1 second, its speed is 5 meters per second, or 5 m/s.
  - In general, speed is calculated by dividing distance by time: $s = \frac{d}{t}$
  - An object's speed in a particular direction is its *velocity* (v).