**Energy**

**What is Energy?**

**Energy comes in two forms:**

**Energy is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Units of Energy**

Energy is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

How big is it?

* A 1kg mass travelling at 1m/s has \_\_\_\_\_ of kinetic energy.
* A 1kg mass lifted about 10cm off the floor has \_\_\_\_\_\_ of gravitational potential energy.

**How to Calculate Energy**

Kinetic Energy is the energy of moving objects, how could we measure or calculate its energy?

Key Questions:

1. Which will have more energy when moving at the same velocity: a baseball or a bowling ball?
2. Which will have more energy when they have the same mass: an object travelling quickly, or travelling slowly?

Formula for Kinetic Energy

Gravitational Potential Energy is the energy stored in object that are suspended, or held above the ground.

Key Questions:

1. Which will have more potential energy when held the same height above the ground: a baseball or a bowling ball?
2. Which will have more potential energy when they have the same mass: on object held 10 meters above the ground, or an object held 1 meter above the ground?

Formula for gravitational Potential Energy

**Examples**

1. A 350g soccer ball is kicked and rolls at a velocity of 7.5m/s.
   1. What form of energy does the soccer ball have?
   2. Calculate the energy of the ball.
2. A 1400kg car is hoisted 1.8m above the ground for a mechanic.
   1. What form of energy does the car have?
   2. Calculate the energy of the car.
3. A 1.2kg shotput is thrown at 3m/s and flies 1m above the ground.
   1. What form of energy does the shotput have?
   2. Calculate the energy of the shotput.