



Exploring Energy

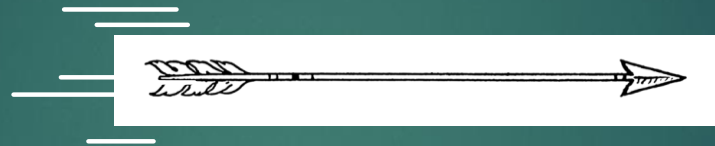
Kinetic and Potential

What did we learn last time ?

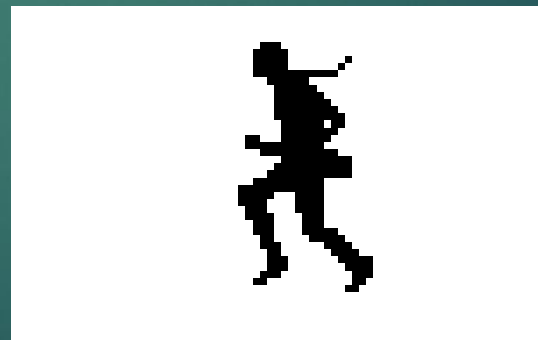
- ▶ energy
- ▶ kinetic energy
- ▶ potential energy
- ▶ energy transfer

Kinetic Energy

- ▶ Kinetic energy is motion energy



- ▶ The kinetic energy of an object depends on both its mass and its speed.



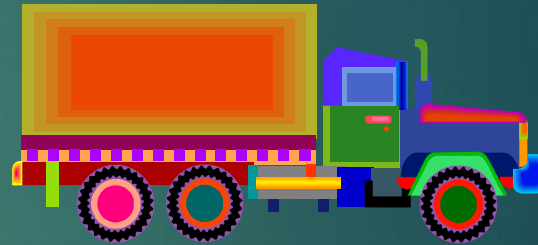
Kinetic Energy

Kinetic energy changes with the mass of an object

Kinetic energy changes with the speed of an object squared



The blue car weighs 1 ton and is traveling 50 mph



The truck weighs 2 tons and is traveling 50 mph

The truck has 2 times kinetic energy as the blue car.

Kinetic Energy

Kinetic energy changes with the mass of an object

Kinetic energy changes with the speed of an object squared



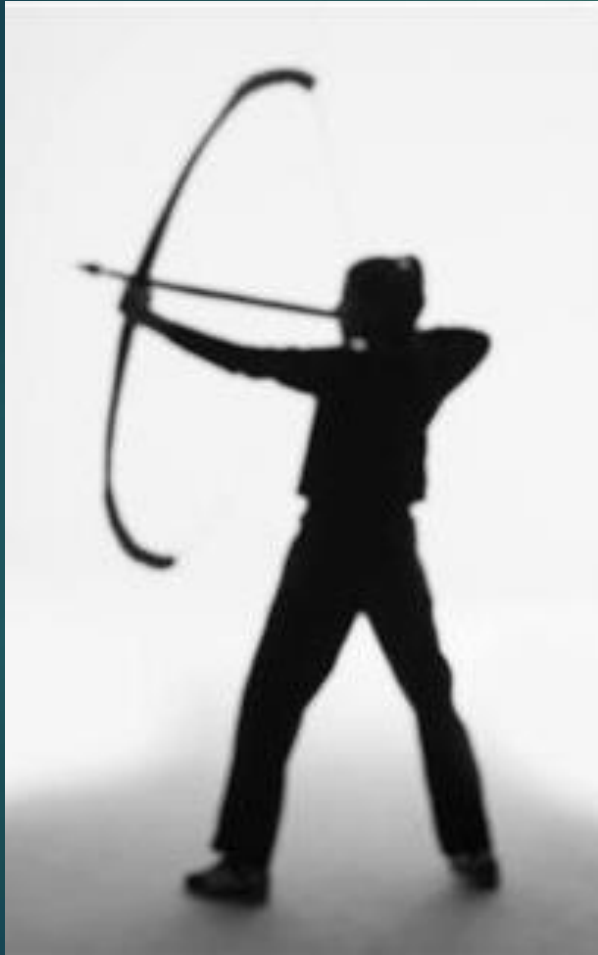
The blue car weighs 1 ton and is traveling 50 mph



The racing car weighs 1 ton and is traveling 100 mph

The racing car has 4 times kinetic energy as the blue car.

Potential Energy



- ▶ Potential energy is stored energy
- ▶ Potential energy can be stored in many ways

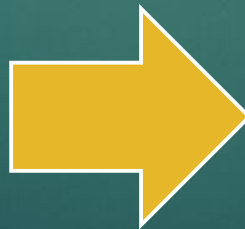
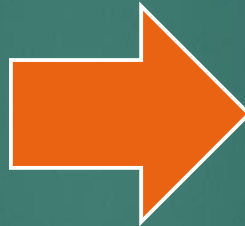
Gravitational Energy

Gravitational energy is potential energy stored in an object's height.



Chemical Energy

Chemical energy is potential energy stored in chemical bonds.



Elastic Energy

Elastic energy is potential energy stored in the stretching or compression of an object.



Thermal Energy

Thermal energy is stored in an object's temperature.



At a large scale it looks like potential energy, but on a small scale it looks more like kinetic energy.

We'll talk more about that later!

It's all energy!

- ▶ kinetic
- ▶ gravitational
- ▶ chemical
- ▶ elastic
- ▶ thermal

Quick Assignment



You are a superhero!

You have three energy superpowers!

Write a paragraph explaining what your superpowers are, how you use them, and what kind of energy they use.

Word bank: kinetic energy, potential energy, energy transfer, gravitational energy, chemical energy, elastic energy, thermal energy