CONCEPT: INTRO TO ENERGY AND KINETIC ENERGY

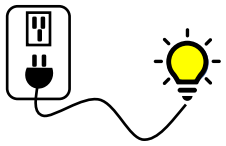
● **Energy** is a physical quantity that objects have**.** We don't know **WHAT** it is, but we know **HOW** it works**.** Unit**: Joule [__]**

- Exists in *many* forms (Heat, light, nuclear, etc.)**;** It can't be *created* or *destroyed*, only _____ between forms**.**

1) Kinetic (Motion)
2) Potential
3) Thermal
4) Light
5) Sound
6) Electrical

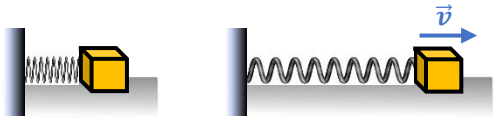
Many more…

Electrical outlet powering a lightbulb



_____ → _____

Spring (elastic potential) launching a toy



_____ → _____

● KINETIC Energy (**KE** or **K**) is the energy due to an object's _____ **(**_____**).**

- All energies are _____, not Vectors**.** So **KE** is *always* _____ and has *NO* direction**.**

KE = _____

EXAMPLE**:** Calculate the kinetic energy of a 5kg box moving across a horizontal surface **a)** to the right with 3m/s; **b)** to the left with 2m/s**.**

PROBLEM**:** About 50,000 years ago, a meteor crashed into the earth near present-day Flagstaff, Arizona**.** Some estimates suggest this meteor had a mass of about 1.4×10^{8} kg and released 1×10^{16} J of energy when it slammed into the Earth**.** Calculate the approximate speed of this meteor before impact**.**

A) 8,450 m/s
B) 12,000 m/s
C) 1.43×10^{8} m/s