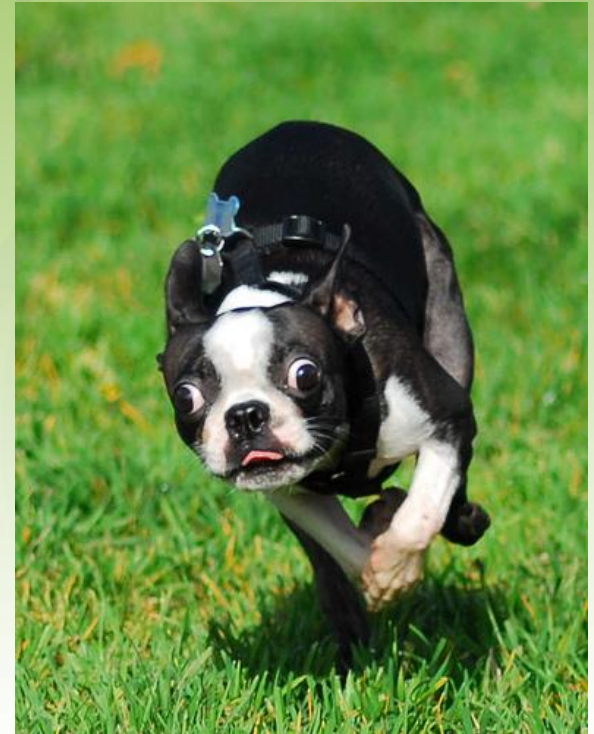




Forms of Energy

What is energy?

- Ability to do work or cause change
- Produces Warmth
- Produces Light
- Produces Sound
- Produces Movement
- Produces Growth
- Powers Technology



Classes of Energy

POTENTIAL

Stored energy
or energy of
position

Gravitational, Stored
Mechanical, Nuclear,
Chemical

KINETIC

Energy of
motion

Motion, Electrical,
Sound, Radiant,
Thermal

Potential Energy

Gravitational Energy

– energy an object or substance has because of its position

Anything “up high”

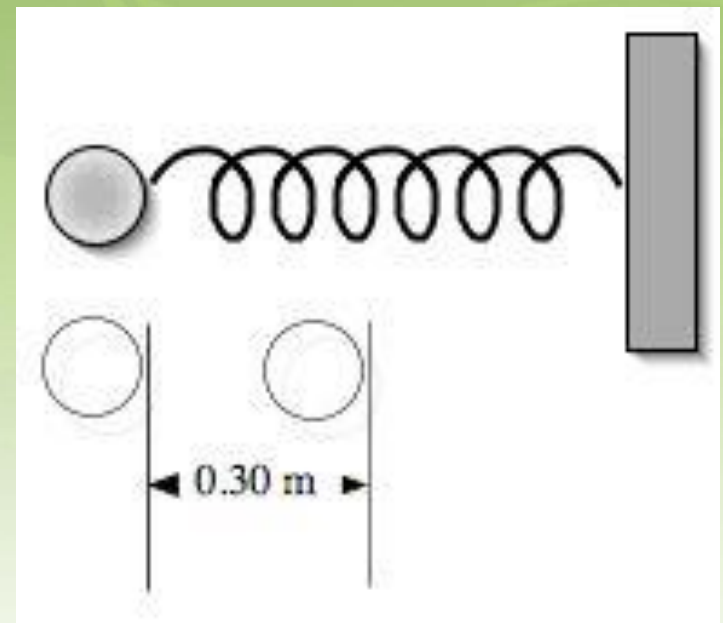


Potential Energy

Stored Mechanical

Energy – stored in an object by the application of force

Must push or pull on an object



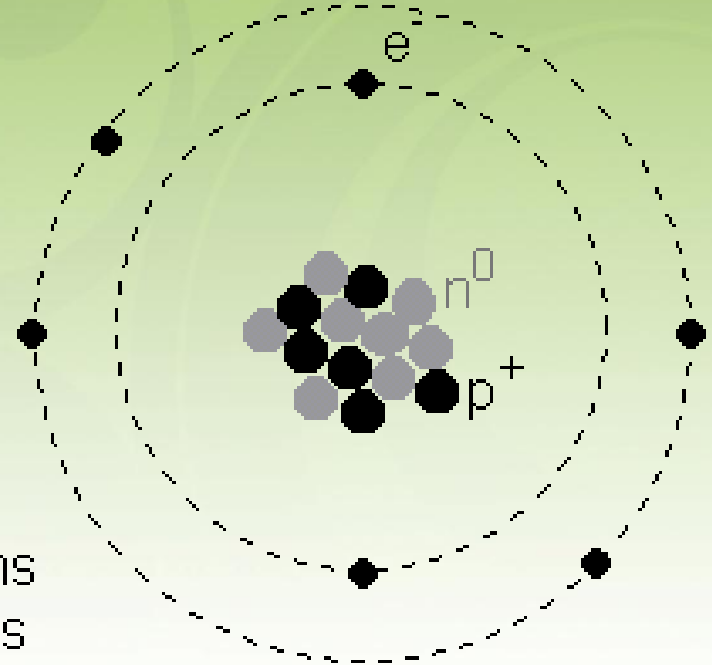
Potential Energy

Nuclear Energy –

energy stored in the nucleus of an atom

Holds the atom together

$^{14}_6\text{Carbon}$



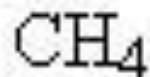
6 protons
6 electrons
8 neutrons

Potential Energy

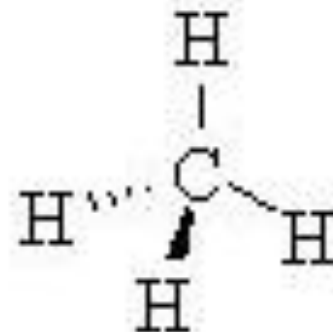
Chemical Energy –

energy stored in the bonds between atoms

Holds molecules together



Molecular
Formula



Perspective
Drawing

Kinetic Energy

**Mechanical
(Motion) Energy** –
movement of objects or
substances from one
place to another

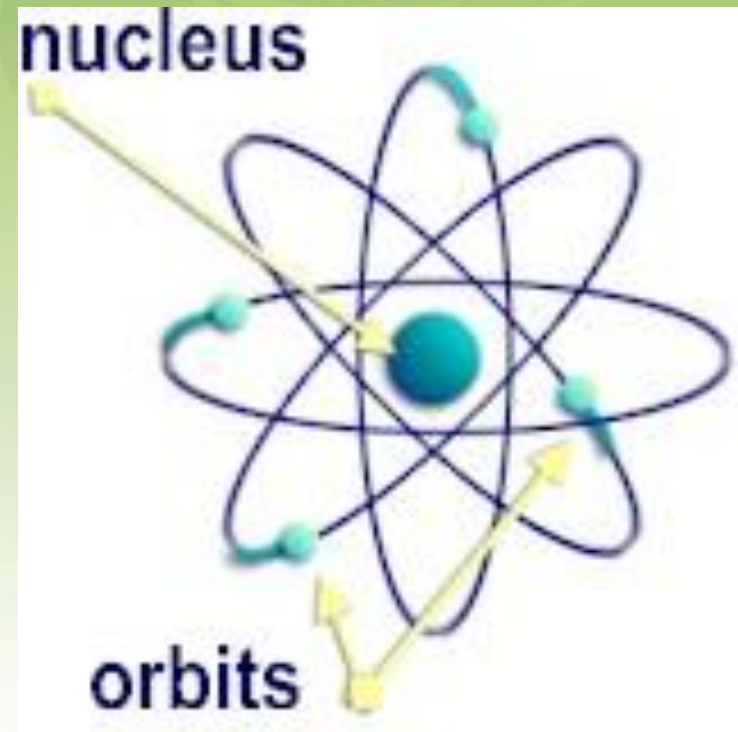


Kinetic Energy

Electrical Energy

– movement of electrons

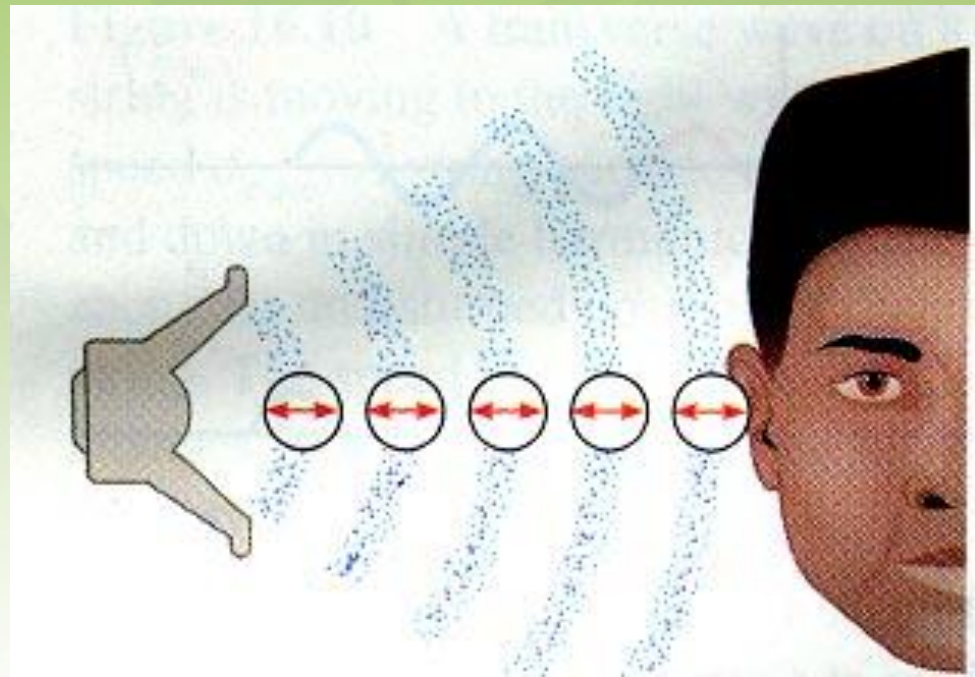
NOT AN ELECTRON PARADE!



Kinetic Energy

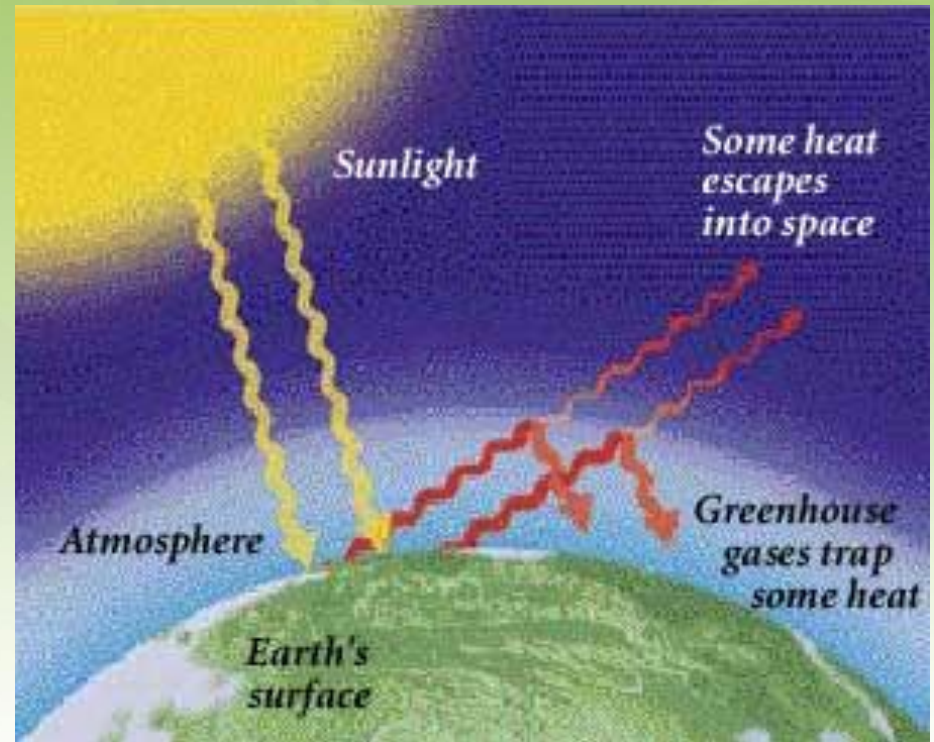
Sound Energy

– movement of energy through substances in the form of longitudinal/compression waves



Kinetic Energy

Radiant Energy –
electromagnetic
energy that travels in
transverse waves



Kinetic Energy

**Thermal (Heat)
Energy** – internal energy of a substance due to the vibration of atoms and molecules making up the substance



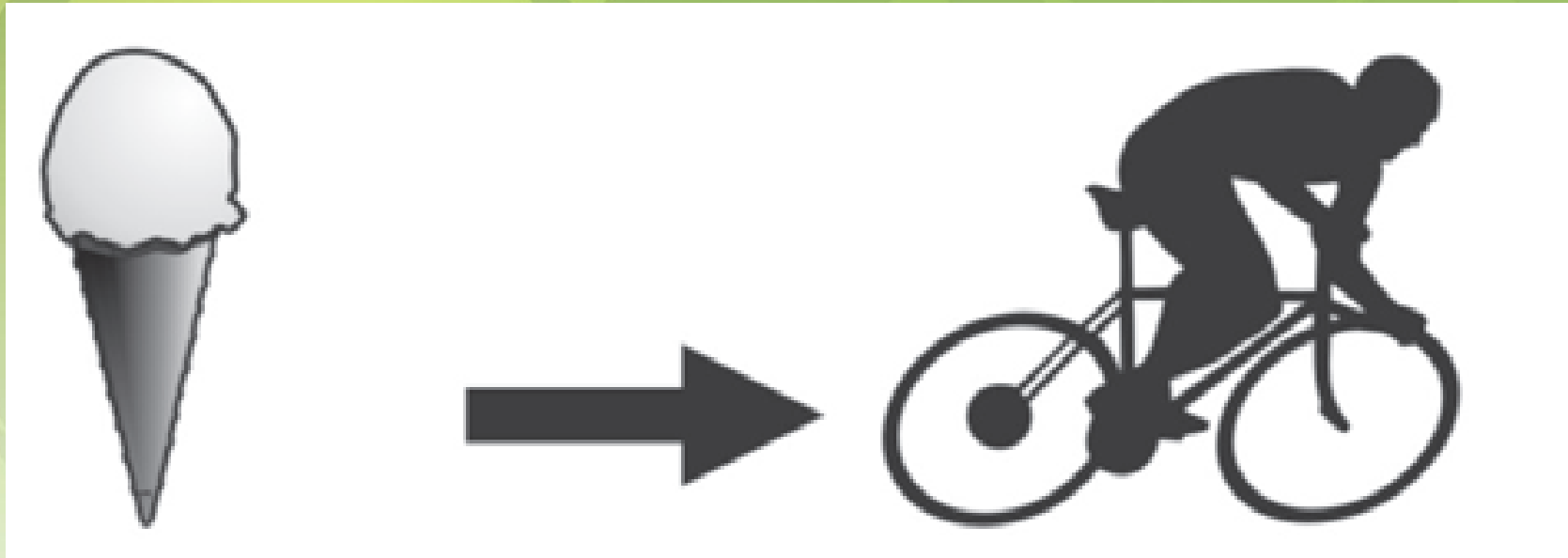
Energy Transfers

1 – Energy can not be created nor destroyed, only changed.

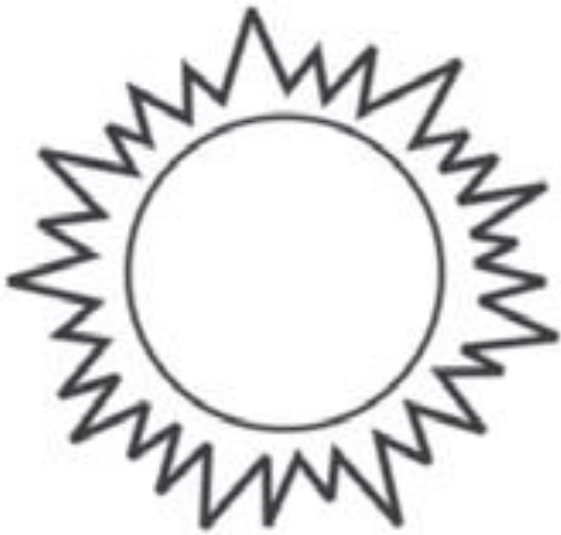
- Law of Conservation of Energy
- First Law of Thermodynamics

2 – Energy will always transfer from high to low.

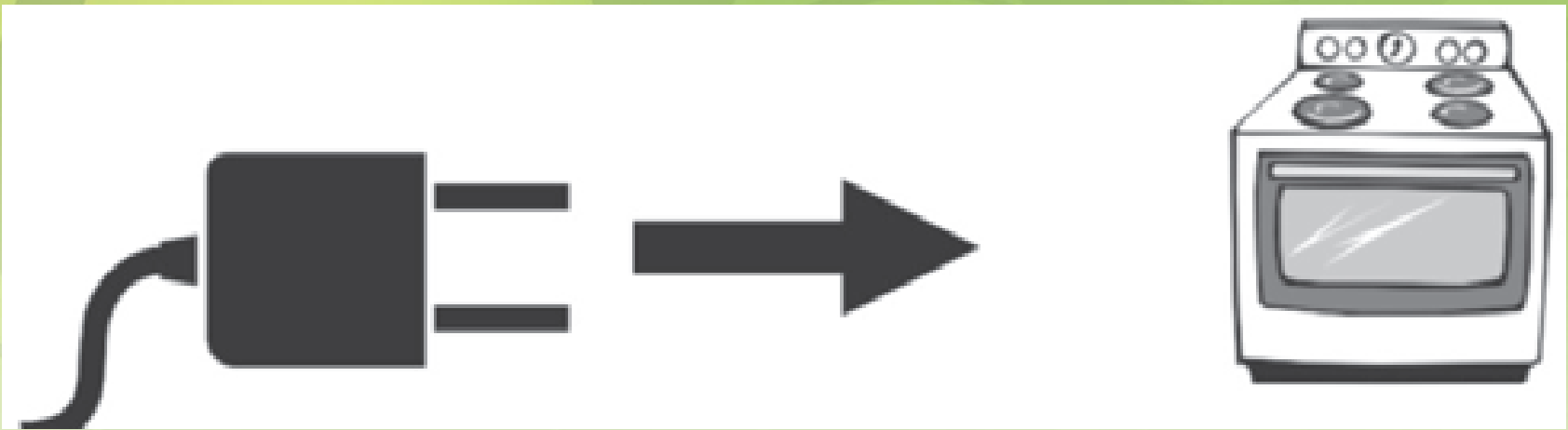
3 – No energy transfer is 100% efficient.



Name the Transfer



Name the Transfer



Name the Transfer



Name the Transfer

In Review

- Energy does work or causes change.
- Two main classes of energy: potential and kinetic.

- Potential Energy – stored energy or energy of position

- Gravitational, Stored Mechanical, Nuclear, Chemical

- Kinetic Energy – energy of motion

- Motion/Mechanical, Electrical, Sound, Radiant, Thermal/Heat

- Energy can not be created nor destroyed, only changed.

- Energy always transfers from high to low.

- Energy transfers are never 100% efficient.