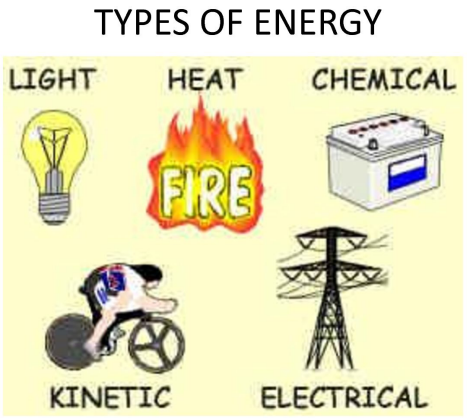
Topic 4

THE ENERGY CONNECTION

Energy



Energy= The ability to do work

Remember “work” from gr.8 is force x distance. So, anything that applies a force and moves a distance.

Types of energy: Energy can change from one form to another.

1. Mechanical energy

Energy from movement

Ex) Generator- moving parts make electricity

2. Chemical energy

Energy released from chemical reactions

Ex) exothermic reactions

3. Electrical energy

Released when charged particles move from place to place

Ex) electricity flowing on power lines

4. Thermal energy

Energy from heat

Ex) particles speed up- have more energy- when heated

5. Light energy

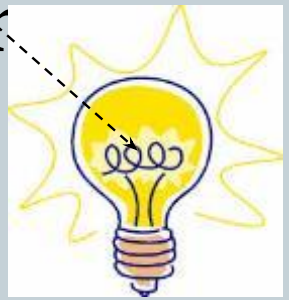
Only energy we can see

Ex) light from lamps

Electrical→ Thermal → Light

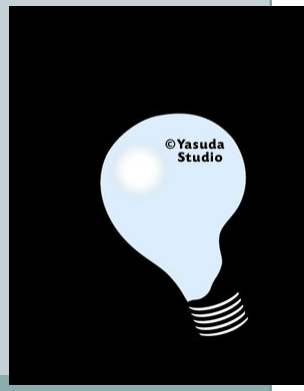
Filament slows e^- due to highly resistant wire

Filament



**** Most energy is lost as heat in conversion.**

So, what's really happening when you turn on a light bulb? What's the energy transformation?

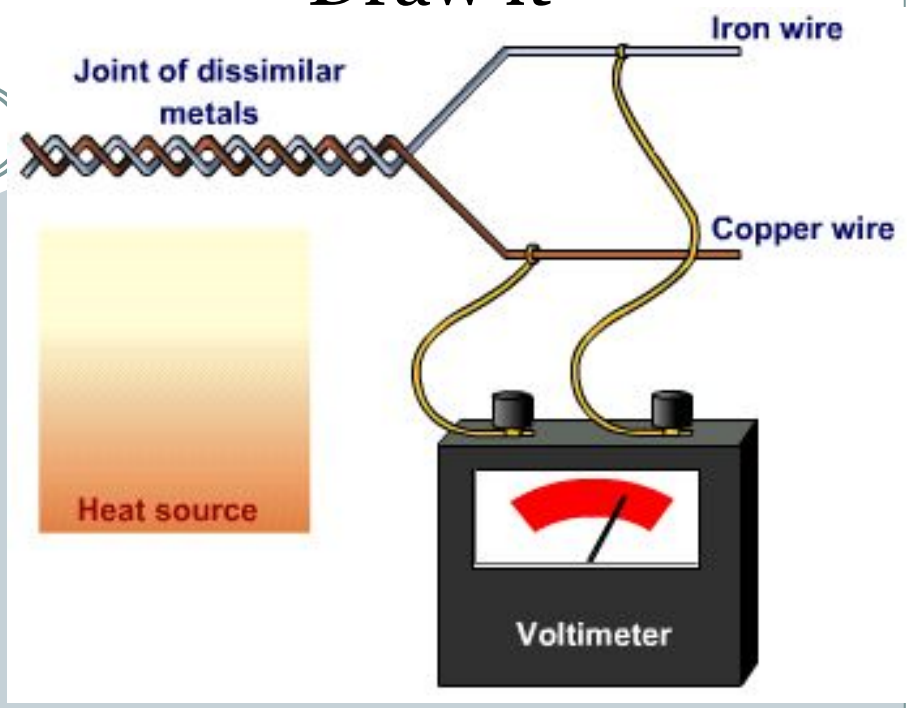


Converting energy from one type to another

Device	Energy Conversion	
	Starting Form	Final Form
Stereo	electrical	Sound waves
Toaster	electrical	thermal
Solar panel	Light (solar)	electrical
Generator	mechanical	electrical

Thermocouples

Draw it



- Heat converted to electric energy
  - Heat → electricity

- Two different metals that conduct energy at slightly different rates

- This causes electrons to flow from one metal to another. Creating a current