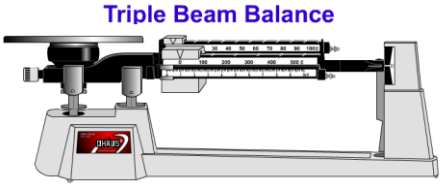
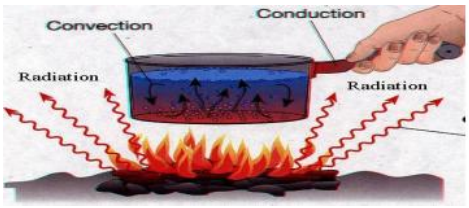
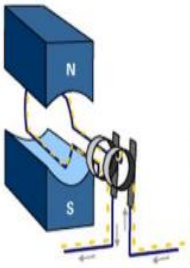
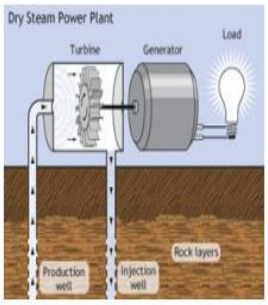
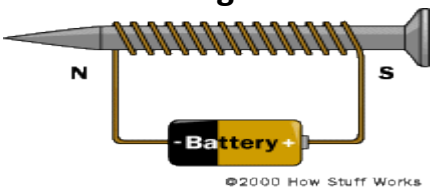
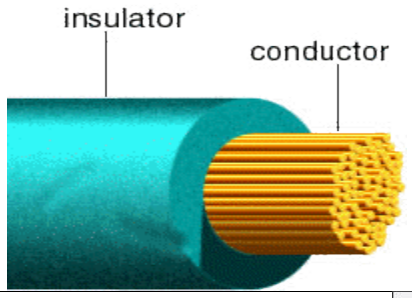
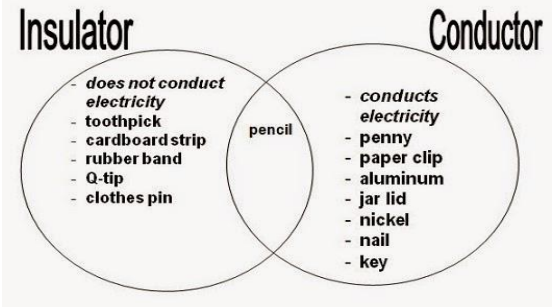
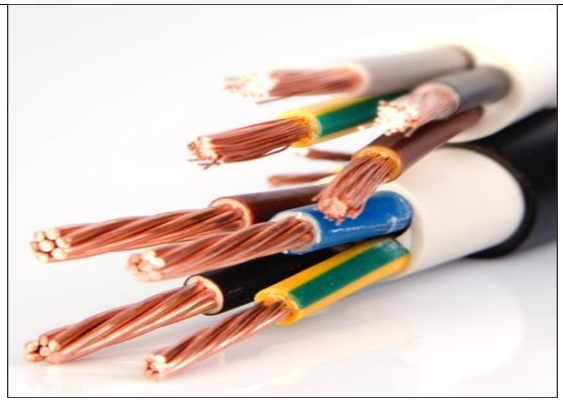
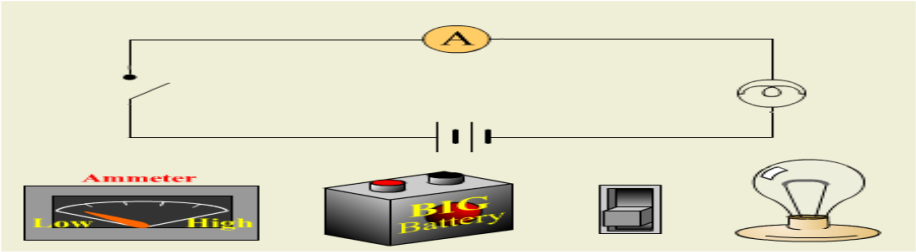
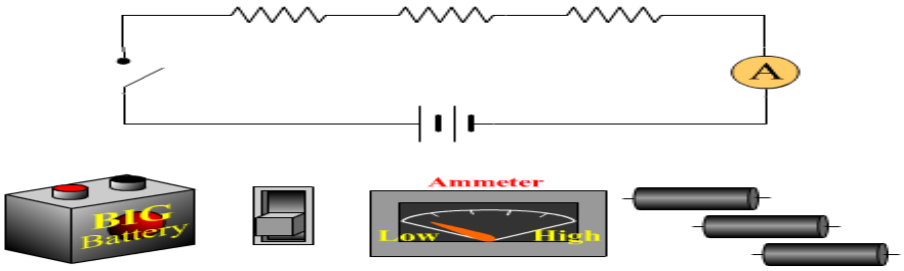
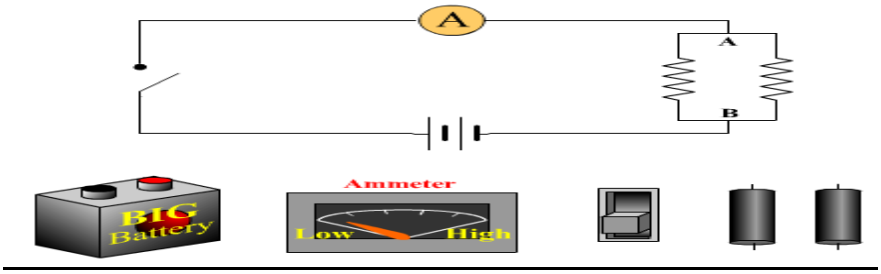
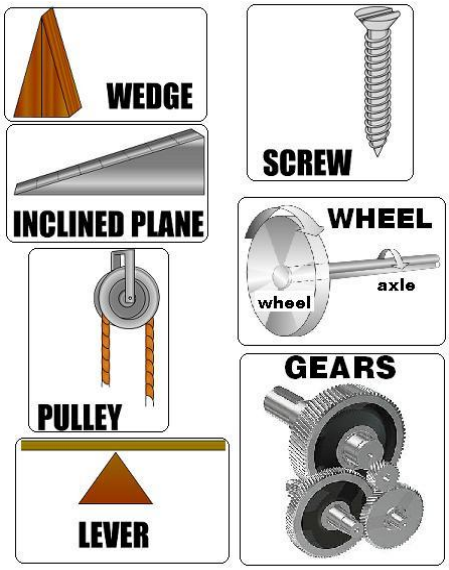
Energy Vocabulary Weeks 1-8 Standards 6-5.1 through 6-5.6	
1. Energy	the ability to do work
2. Mechanical	all energy that is in a moving object (ex: moving car, rolling bicycle, flying airplane, and blowing wind)
3. Mechanical Potential Energy	stored energy or energy of position, this energy has "potential" to move (ex. rock at the top of a hill, water behind a dam, a stretched rubber band)
4. Mechanical Kinetic Energy	energy of motion, something is moving in all forms of energy for instance thermal, electrical, light & sound (ex. a rock *falling* from the top of a hill, water *going* over a dam, *releasing* a stretched rubber band *verbs show motion)
5. Heat Energy	the total energy of the particles that make up an object associated with motion
6. Solar Energy	the energy from the SUN, which provides heat and light
7. Chemical Energy	energy stored in particles of matter (ex. batteries, sugar, food *plants/photosynthesis)
8. Electrical Energy	energy flowing in an electric circuit (ex. sources of electrical energy: a battery and a generator)
9. Light Energy	can be produced in an electric circuit if a light bulb is added to the circuit
10.Sound Energy	can be produced in an electric circuit if a bell, buzzer, radio, or TV is added to the circuit
11.Nuclear Energy	Splitting Uranium atoms in a process called fission involving a nucleus of an atom (ex. the atomic bomb)
12.Law of Conservation of Energy 	Energy can neither be created nor destroyed, it just changes form.
13.Energy Transformation	The process of changing energy form one form to another. (the → means transforms into). <u>Example #1</u>: when you eat food, rest and then go running it is an energy transformation=[chemical → mechanical potential → kinetic energy] <u>Example #2:</u> toaster=[electrical→mechanical→heat→light→sound]
14.Work Formula	W=F x d (Work (J) or Nm = Force (N) x distance (m)
15.Force	A push or a pull that can move an object.
16.Joule (J or 1 Nm)	Unit of energy used to measure work. It is equal to one

	Newton-meter (1 Nm)
17.Newton (N)	Unit used to measure the strength of force using a tool called a spring scale.
18.Spring Scale 	Tool used to measure weight or force in Newtons (N).
19.Triple-Beam Balance 	Tool used to measure mass in grams.
20.Meter Stick	Used to measure meters (m), centimeters (cm) or millimeters (mm) of a distance.
21.Three (3) Forms of Heat Transfer 	1. <u>conduction</u> -the transfer of heat energy between objects that are touching. 2. <u>convection</u> -the transfer of heat throughout a liquid or gas by currents. 3. <u>radiation</u>-the transfer of heat energy through empty space or air.
22.Simple Electric Motors 	· An electric motor changes electrical energy to mechanical energy. · It contains an electromagnet that rotates between the poles of a magnet. · The coil of the electromagnet is connected to a battery or other source of electric current.
23.Generators  	• A generator produces an electric current when a coil of wire wrapped around an iron core is rotated near a magnet. •Generators at power plants produce electric energy for our homes. •A generator contains coils of wire that are stationary, and rotating magnets are rotated by turbines. Turbines are huge wheels that rotate when pushed by water, wind, or steam. •Thus mechanical energy is changed to electrical energy by a generator. Smaller generators may be powered by gasoline.
24.Electromagnets 	•An electromagnet is formed when a wire in an electric circuit is wrapped around an iron core producing a magnetic field. •The magnet that results loses its magnetism if the electric current stops flowing.

25.Voltage Source  	• **a source of electrical energy in an electric circuit. The voltage for any electric circuit can come from many different sources. Some common examples are: batteries, power plants, fuel cells.**
26. switch- device used to open and close an electric circuit.	
27. resistor-any device that converts electrical energy into other forms of energy (Ex. light bulb).	
28. Insulator-any material that DOES NOT allow electrical current to flow through an electric circuit (plastic, glass, paper, cardboard)	 
29. conductor -material that allows electrical current to flow through an electric circuit (ex. Most metals are conductors of electrical current, but Copper wire is the most excellent conductor).	 
30. Four (4) Parts to a Simple Circuit **1. Wire** **2. Voltage source** **3. Switch** **4. resistor**	

31.Series circuit-an electric circuit with one path for an electric current.	
32.Parallel circuit-an electric circuit with multiple paths for an electric current.	
33. Six (6) Simple Machines plus the gear 	**Simple machines *reduce* force, not work.** **<u>WIPPL SWAG</u> –Mneumonic Device to remember it.** **1. <u>W</u>edge-two inclined planes back to back** **2. <u>I</u>nclined plane-ramp** **3. <u>P</u>ulley-groved wheel and a cable/rope that passes over it** **4. <u>L</u>ever-rigid bar that rest on top of a fulcrum/pivot point** **5. <u>S</u>crew-inclined plane wrapped around a cylinder** **6. <u>W</u>heel & <u>A</u>xle-wheel that has a cylinder through it that allows it to rotate** **7. <u>G</u>ear-rotating machine part having teeth or cogs that move one another to accomplish a task** 
34. Complex/Compound Machines	**Two or more simple machines working together (ex. scissors, bike, stapler, wheel barrow, can opener, crane).**