**Vocabulary: Feel the Heat**



**Vocabulary**

* Calorimeter – an insulated device where temperature changes within a reaction can be accurately measured.
	+ Theoretically, no heat is lost to the surroundings in a calorimeter.
* Conductor – a substance that allows energy to pass through.
	+ The best conductors transfer energy the fastest.
	+ Metals tend to be better conductors than nonmetals.
* Controlled experiment – an investigation where only variable at a time is changed.
	+ The purpose of a controlled experiment is to determine whether the variable being changed is producing an effect.
	+ If more than one variable is changed simultaneously, the experimenter will be unable to determine which variable is producing the effect.
* Dissolve – to break down into particles of molecular or ionic size.
* Endothermic – a process in which the system absorbs energy from the surroundings.
	+ The temperature of the surroundings decreases in an endothermic reaction.
	+ In an endothermic reaction, the amount of energy absorbed to break bonds is greater than the amount of energy released if new bonds form.
	+ Both physical and chemical changes can be endothermic.
	+ Melting an ice cube and dissolving ammonium nitrate in water are both examples of endothermic processes.



* Exothermic – a process in which energy is released from the system to the surroundings.
	+ The temperature of the surroundings increases in an exothermic reaction.
	+ In an exothermic reaction, the amount of energy released when new bonds form is greater than the amount of energy absorbed if bonds are broken.
	+ Burning paper, dissolving calcium chloride in water, and the freezing of water are all examples of exothermic processes.
* Insulator – a substance that prevents the transfer of heat through a substance.
	+ A good insulator will keep “hot” things hot and “cold” things cold.
	+ Nonmetals tend to be much better insulators than metals.
	+ A vacuum is the best insulator.
* Solute – a substance that is dissolved by another substance (the solvent).
	+ In salt water, salt is the solute.
	+ When dissolved, the solute will take on the physical properties of the solvent.
	+ Solutes can be liquids, solids, or gases.
* Solution – a homogeneous mixture comprised of a solute dissolved within a solvent.
	+ True solutions are always transparent.
	+ In a solution, the solute will never settle out as long as temperature and concentration remain constant.
	+ When a solution is made both solute-solute and solvent-solvent bonds are broken, and new solute-solvent bonds are formed.
* Solvent – a substance that dissolves another substance (the solute).
	+ In salt water, water is the solvent.
	+ Solvents are typically liquids.
* Surroundings – the part of the universe that does not include the system.
* System – the component of the universe being examined at a particular time.
	+ In an open system, both mass and energy can enter or leave.
	+ In a closed system, only energy can be exchanged.
	+ In an isolated system, neither mass nor energy can escape or enter.