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Thermochemistry	the study of energy changes that occur during chemical reactions and changes in state
Heat	The energy transferred between objects that are at different temperatures (represented by Q)
Exothermic Reaction	Chemical Reaction in which energy is primarily given off in the form of heat
-q	system releases heat
Endothermic Reaction	Chemical Reaction in which energy is primarily absorbed in the form of heat
+q	system gains heat
System	a part of the universe on which you focus your attention (usually the chemical reaction itself)
Surroundings	everything else in the universe outside of the system
universe	the system plus the surroundings
internal energy of a system (U)	is the sum of the potential and kinetic energies of the components in the system
work	force x distance, expressed in joules
-w	work done by the system
+w	work done on the system
Energy	the capacity to do work
Joules	unit of energy
specific heat	The amount of energy required to raise the temperature of 1 gram of a substance by 1 degree celcius
heat capacity	the number of heat units needed to raise the temperature of a body by one degree.
Specific Heat (Equation)	$q = mc\Delta T$

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thermal equilibrium	The state of two or more objects or substances in thermal contact when they have reached a common temperature
molar heat capacity	the energy required to raise the temperature of one mole of a substance by one degree Celsius
heat of vaporization	The amount of energy required for the liquid at its boiling point to become a gas
heat of fusion	Amount of energy required to change a substance from the solid phase to the liquid phase.
Enthalpy	the heat content of a system (total energy)
Enthalpy of Reaction	the quantity of energy transferred as heat during a chemical reaction (usually in moles)
Bond Enthalpies	bonds broken – bonds formed, energy associated for the creation of products by formation of bonds
Enthalpies of Formation	the enthalpy change for the reaction in which a compound is made from its constituent elements in their elemental forms
Enthalpy of formation Equation	$\Delta H_{\text{reaction}} = \sum \Delta H_{\text{f products}} - \sum \Delta H_{\text{f reactants}}$
state function	property of a system, such as temperature and pressure, that depends on the beginning and end not the process of which it undergoes
Hess's Law	if a reaction is carried out in a series of steps, ΔH for the overall reaction equals the sum of the enthalpy changes for the individual steps
first law of thermodynamics	The energy of the universe is constant. Energy can be transferred and transformed, but not created or destroyed. (AKA principle of conservation of energy, 143)
second law of thermodynamics	Every energy transfer or transformation increases the entropy of the universe. For a process to occur spontaneously, it must increase the entropy of the universe
Entropy	The quantification of a measure of disorder or randomness