**Chemical Reactions:
Reaction Energy, Water & Macromolecules**

* Chemical reactions need \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = Energy



**Activation Energy**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount of energy needed for reactants to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a chemical reaction



**Exothermic**

* Energy is released (Gives off \_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* Product energy is ­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than reactant energy.



**Endothermic**

* Energy is absorbed (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ effect)
* Product energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than reactant energy.



**Enzymes/Catalysts**

* Catalyst – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that lowers activation energy
* Enzyme – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that lowers activation energy



**Water**

* H2O
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds
* Electrons spend more time around \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule – charges are uneven throughout the molecule

**Mixtures with water**

* **Homogenous** – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ throughout (solution)
* **Heterogeneous** – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ throughout (suspension)

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**Acids vs. Bases**

* **Acids** – release \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions (H+) when dissolved in water
* **Bases** – release ­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions (OH -) when dissolved in water
* pH = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_\_\_**

**Buffers**

* Mixture that can react with acids or bases to keep the \_\_\_\_\_\_\_\_\_\_\_\_ in a certain range
* Blood = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Macromolecules**

* **Macromolecules** - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ smaller molecules together
* **Polymers** – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ units of identical compounds called monomers

 