**Physical Science Study Guide**

**Chapter 5: Chemical Reactions**

* **Objectives**
  + Recognize some signs that a chemical reaction is taking place.
  + Identify changes as being physical or chemical.
  + Explain chemical changes in terms of the structure and motion of atoms and molecules.
  + Describe the differences between endothermic and exothermic reactions.
  + Classify reactions as endothermic or exothermic
  + Identify types of chemical energy.
  + Distinguish among five general types of chemical reactions.
  + Predict the products of some reactions based on the reaction type.
  + Write and balance chemical equations.
  + Relate balancing equations to the law of conservation of matter.
  + Calculate the relative masses of reactants and products from a chemical equation.
  + Describe the factors affecting reaction rates.
  + Explain the effect a catalyst has on a chemical equation.
  + Provide examples of biological catalysts.
* **Vocabulary**
  + Reactant
  + Product
  + Chemical energy
  + Exothermic reaction
  + Endothermic reaction
  + Synthesis reaction
  + Decomposition reaction
  + Combustion reaction
  + Single-displacement reaction
  + Double-displacement reaction
  + Chemical equation
  + Law of conservation of matter
  + Catalyst
  + Enzyme
* **Formulas (Given on Exam)**
  + - Synthesis reaction: A+B🡪AB
    - Decomposition reaction: AB🡪A+B
    - Single-displacement reaction: AX+B🡪BA+X
    - Double-displacement reaction: AX+BY🡪AY+BX