Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd: \_\_\_\_\_ Ast: \_\_\_\_\_

**Physical Science Honors: CHEMICAL REACTIONS NOTES**

1. **CHEMICAL REACTIONS**
   1. Chemical Reaction:
      1. How are chemical bonds involved in chemical reactions?
      2. What observations provide evidence that a chemical reaction has occurred?
   2. Reactants:
   3. Products:
   4. Chemical Equations:
      1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (shown as chemical formulas)
2. **CONSERVATION OF MASS**
   1. CaCO3 🡪 CaO +CO2
      1. What elements are present in the reactants?
      2. What elements are present in the products?
   2. Law of Conservation of Mass:
      1. What is another way to say the law of conservation of mass?
3. **BALANCING CHEMICAL EQUATIONS**
   1. How are subscripts interpreted in a chemical equation?
   2. How are coefficients interpreted in a chemical equation?
   3. Compare the following two equations:

N2O5 + H2O 🡪 HNO3

N2O5 + H2O 🡪 2HNO3

1. **TYPES OF REACTIONS**
   1. Synthesis reactions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      * + \_\_\_ + \_\_\_ 🡪 \_\_\_
   2. Decomposition reactions: \_\_\_\_\_\_\_\_\_\_ \_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_
      * + \_\_\_ 🡪 \_\_\_ + \_\_\_
   3. Replacement reactions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      * + \_\_\_\_\_ + \_\_\_\_\_ 🡪 \_\_\_\_\_ + \_\_\_\_\_
2. **ENERGY**
   1. Activation Energy:
   2. Exothermic Reactions:
   3. Endothermic Reactions:
3. **CONTROLLING REACTIONS**
   1. How can chemists use temperature to control the rate of a chemical reaction?
   2. Describe three other variables chemists can use to control the rate of chemical reactions: