Name:_____ Period: _____

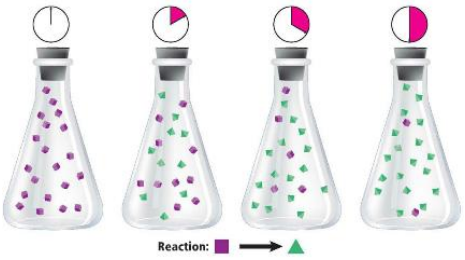
Guided Notes: Reaction Kinetics and Collision Theory

Expressing Reaction Rates

- Some chemical reactions are _____ and others are _____, but chemists need to be more _____.
- What is a rate?
- How do we use rates in everyday life?

- How would we measure the rate of a reaction?

- Equation for rate



- What happens to the amount of reactants over time? _____
- What happens to the amount of products over time? _____
- Do you think you would observe the same changes in reactants and products for every reaction? Explain.

Reaction Rate

- Reaction rate for chemistry is defined as: _____
  _____
- Concentration: _____
  - solute: _____
  - solvent: _____
  - ex: salt in water, salt is the _____, water is the _____
  - unit typically used for concentration in chemistry: _____,which means: _____
- Reaction rates are determined _____ by measuring the _____ of the reactants and/or products in a _____ _____.
- Reaction rates CANNOT by calculated from a _____.
- Reaction rates must always be _____.

Collision Theory

- In order for a reaction to occur:
  - reactants must _____
  - collisions must be in the _____
  - collisions must have a _____ for bonds to break

- Activated Complex: a temporary, unstable arrangement of atoms in which _____ and _____.
- _____ is another name for activated complex.
- Collisions with the correct orientation must also have a sufficient amount of _____.
- This amount of energy is called the _____.
- Symbol: _____
- How would a high vs. a low activation energy affect the speed of a reaction?

Activation Energy

- Reaction #1:

- Reaction #2:

- Which graph is exothermic? _____ How do you know?
- Which graph is endothermic? _____ How do you know?
- Which graph has a higher activation energy? _____
- Which reaction in the graphs will be faster? Explain.

Factor Affecting Reaction Rate:

- _____
- _____
- _____
- _____
- _____
    - substance that _____ the rate of reaction _____.
    - creates a lower _____
    - _____
    - Sketch: