**Unit 8 Notes**

**Reaction Rates**

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ measures the amount of change over a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interval

Example: A sprinter covers 100 meters in 11.5 seconds. The speed, or rate of this sprinter is 100m/11.5 s or 8.70 m/s

The rate of a chemical reaction is essentially how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a reaction occurs.

**Collision Theory** - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ must collide in order to react with one another

Not every \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ results in a reaction. Two requirements must be met

1. The molecules must be moving with enough \_\_\_\_\_\_\_\_\_ and therefore enough energy

2. The molecules must have the correct \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Speed of Particles –** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ moving particles have higher energy

The faster particles are moving the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the chance of collisions with one another.

The more collisions that occur, the higher the chance of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with proper orientation.

**Catalyst -** a substance that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a reaction without being consumed

A catalyst lowers the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without directly participating in the reaction

Catalysts help molecules to have proper \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during collision

Catalysts are not written as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a balanced chemical equation.

**Factors Affecting the Rate of Reactions:**

Temperature: Increasing the temperature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the rate of reaction

Concentration – Increasing concentrations of reactants increases the rate of reaction

Particle Size – a larger \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_increases the rate of reaction

Catalyst– adding a catalyst \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the rate of reaction