Which way did it go?

- So far, you've only looked at reactions that went **DIRECTLY** from reactants to products. This is not usually the case in nature.

- In nature, there are many instances when as the products of a reaction are formed, they may **BREAK APART** (or join together) to form the original reactants again.

- This is called a **REVERSIBLE** reaction. It can be represented with the following symbolism:
- **A+B<==> AB**
- The reaction is really **TWO** reactions. The reaction written from left to right is called the **FORWARD** reaction.

- The reaction written from right to left is the **REVERSE** reaction. In a reversible reaction, **BOTH** the forward and the reverse reactions occur at the same time.

- When the forward and reverse reactions are taking place at the **SAME** rate, there is no net **CHANGE** in the actual amounts of the components of the system.

- The reaction has reached a chemical **EQUILIBRIUM** when the forward and reverse reactions are taking place at the same **RATE**.

- The fact that the rates of forward and reverse reactions are the **SAME** in a chemical equilibrium DOES NOT mean that the **AMOUNTS** of the components on both sides of the chemical equation are the same.

- The **equilibrium position** of a reaction is given by the relative **CONCENTRATION** of the components of the system at equilibrium.

- A chemical equilibrium position can be changed by applying a **STRESS** to either side of the chemical equation.
- Once a stress is relieved, a **NEW** equilibrium position is reached where the forward and reverse reaction rates are once again equal to each other.

- The French Chemist Henri Le Chatelier studied the **CHANGES** in a system that result from changing the conditions of that system.

- He proposed Le Chatelier's principle: If a **STRESS** is applied to a system in a dynamic equilibrium, the system **CHANGES** to relieve the stress.

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