

During **Inhalation** or **Inspiration**, air enters the body when the **Diaphragm Muscle** contracts, causing a **Force** that **Pulls** air in to the body. This is **Breathing**.

Air moves down the **Trachea**, through the **Bronchi**, into **Bronchial Tubes**, and finally through the **Bronchioles**, where it ends up in the

Alveoli or **Air Sacs**

Oxygen Atoms Diffuse through the membranes of the alveoli, through the membranes of the blood vessels, and into the blood. This called **Gas Exchange**.

The blood carries the oxygen to every part of the body.

The **Oxygen Atoms Diffuse** through the blood vessels into body **Cells**.

Glucose is a product of **Photosynthesis**. It enters the body when we eat carbohydrates. During **Digestion**, it **Diffuses** into the blood from the small intestine. **Oxygen** is also a product of **Photosynthesis**. It enters the body during **Breathing**.

Plants use **Carbon Dioxide**, **Water**, and energy from the sun to create **Glucose** and **Oxygen**.

$$6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll-a}]{\text{Light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$$

This chemical reaction is called Photosynthesis.

During **Exhalation** or **Expiration**, **Carbon Dioxide** moves through the **Bronchioles**, the **Bronchial tubes**, the **Trachea**, a finally out of the body. This is **Breathing**.

Carbon dioxide is carried by the blood, back to the **Alveoli** in the lung, where **Gas Exchange** occurs.

Water is carried by the blood to the **Kidneys** to be removed from the body.

The **Energy** is used for life functions. The **Water** and **Carbon Dioxide** are **Diffused** back into the blood.

Oxygen atoms and the atoms in glucose react to form carbon dioxide and water.

$$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{energy}$$

This chemical reaction is called Cellular Respiration

Respiration occurs in the **Mitochondria**.