

## **Vocabulary chapter 7**

### **Chloroplast**

- The organelle found only in plants where photosynthesis occurs.

### **Stroma**

- The part of the chloroplast where the Calvin cycle (or light independent reactions) occurs.

### **Thylakoid**

- The part of the chloroplast where the light reactions occur.

### **Photosynthesis**

- This process, which only occurs in plants, is the process by which carbon dioxide and water combine to form glucose and oxygen.

### **Oxidation reactions**

- A reaction in which there is a loss of electrons. An example would be when glucose is converted into carbon dioxide.

### **Reduction reactions**

- A reaction in which there is a gain of electrons. An example would be when carbon dioxide is converted into glucose.

### **Endergonic**

- A reaction in which an input of energy is needed. Photosynthesis is an example of an endergonic reaction.

### **Exergonic**

- A reaction in which energy is released. Cellular respiration is an example of an exergonic reaction.

### **Light (dependent) reactions**

- The first set of reactions in photosynthesis in which light energy is converted into chemical energy. Water is a starting reactant and oxygen is released. Both NADPH and ATP are formed. These reactions take place in the thylakoid.

### **Calvin cycle (light independent reactions)**

- In these reactions in photosynthesis, ATP and NADPH is used to convert carbon dioxide into sugars. These reactions take place in the stroma.

### **Light energy**

- Light is used to excite electrons from water and help form ATP and NADPH in the light reactions of photosynthesis.

**NADP<sup>+</sup>**

- When this molecule combines with electrons and hydrogen, NADPH is formed.

**NADPH**

- This molecule is formed in the light reactions of photosynthesis

**ADP**

- When ADP combines with a phosphate group, ATP is formed

**ATP**

- This molecule is a stored form of energy that is formed in the light reactions of photosynthesis.

**Water**

- This is a reactant in the light reactions of photosynthesis.

**Oxygen**

- This molecule is released in the light reactions of photosynthesis.

**Carbon dioxide**

- This molecule is a reactant in the Calvin cycle.

**Sugar (Glucose)**

- With the help of NADPH and ATP, carbon dioxide is converted into sugars in the Calvin cycle.

**Electron transport chain**

- This process occurs as part of cellular respiration in the mitochondria. As a result of this process, water and ATP are formed. This process also occurs as part of photosynthesis in the thylakoids in the chloroplast. As a result, NADPH and ATP are formed.

**Photosystem I and photosystem II**

- These are the different protein systems where the electron transport chain occurs as part of photosynthesis.

**ATP synthase**

- This is a protein embedded in the inner mitochondrial membrane and the thylakoid membrane. The energy released when hydrogen flows through allows the formation of ATP.