**Notes & Practice: Introduction to Photosynthesis**

**Biology 11 Name:**

**Directions:** Watch the tutorial video provided and fill out the information below as you watch the video. Remember you can pause, rewind and revisit sections of the video as many times as you need to complete the sheet.

**Energy**

Energy is……

Diagram

Description automatically generated

The original energy that fuels all organisms comes from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the form of photons and is converted into usable energy (glucose) during the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This process converts molecules of \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ into a larger molecule called glucose.

Diagram

Description automatically generated

Organisms that make their own food are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These organisms are what carry out the process of photosynthesis. Other organisms that rely on others to gain their energy are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Consumer**

**Producer**

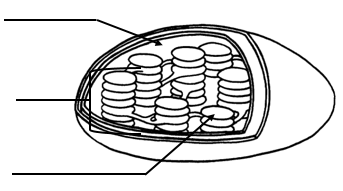
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a form of energy that is found within living or previously living organisms. The greatest amount of energy within a food chain is found at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ level. As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ move energy up the food chain from primary to tertiary energy is lost.

**Chloroplast**

The disk-like structures within the chloroplast are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_. They contain a pigment called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and are the location for the 1st process in photosynthesis. Stacks of these structures are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The area surrounding the disk-like structures is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is where the 2nd process in photosynthesis takes place.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an organelle within the \_\_\_\_\_\_\_ of plants, algae and photosynthetic bacteria. It is the location where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes place.



Chlorophyll is a pigment that absorbs packets of energy from the sun called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to kick-start the process of photosynthesis where \_\_\_\_\_\_\_\_\_\_\_\_\_ energy is converted into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

**ATP (Adenosine Triphosphate)**

During photosynthesis \_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy is converted into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy in the form of glucose (sugars). Glucose is then broken down into usable energy called \_\_\_\_\_\_\_\_\_\_\_\_\_ through the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the mitochondria. This process occurs in most organisms.

In animals, glucose is the large molecule of energy consumed in the form of carbohydrates that that is delivered through your blood to reach your cells. Once there it is converted into ATP by the mitochondria.

**ATP (Adenosine Triphosphate)**

Diagram

Description automatically generated

**ADP (Adenosine Diphosphate)**

**Practice Questions:**

1. The equation for photosynthesis is:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_

1. Where does the carbon dioxide and water come from?
2. What is the overall purpose of photosynthesis?
3. Compare the energy storage between molecules of glucose and molecules of ATP.