

PHOTOSYNTHESIS

Have you ever wondered how a plant eats? How do you think it gets its food?

READ: *Photosynthesis* is a biochemical process in which plants, algae, some types of bacteria and protists utilize the sun's energy to produce sugar/glucose. Sugar, or glucose, is the food energy every plant and animal needs to survive. During a process of *cellular respiration*, which occurs in the MITOCHONDRIA, the glucose converts into *ATP (adenosine triphosphate)*, which is the fundamental fuel of all living things. *Chlorophyll*, the green pigment of the plant, makes the conversion of energy from the sun to chemical energy possible. During this process, the plant will consume water, uptake nutrients, absorb carbon dioxide, and release oxygen, which many organisms, like people, need to survive.

Vocabulary/Definitions

adenosine triphosphate A high-energy phosphate molecule required to provide energy for cellular function. Abbreviated as ATP.

byproduct A secondary product of a given process.

cellular respiration: The process in which the chemical bonds of energy-rich molecules such as glucose are converted into energy usable for life processes.

photosynthesis The process by which cells containing chlorophyll, such as green plants and algae, convert incident light to chemical energy; they create organic compounds from inorganic compounds, namely carbohydrates from carbon dioxide and water, accompanied by the simultaneous release of oxygen.

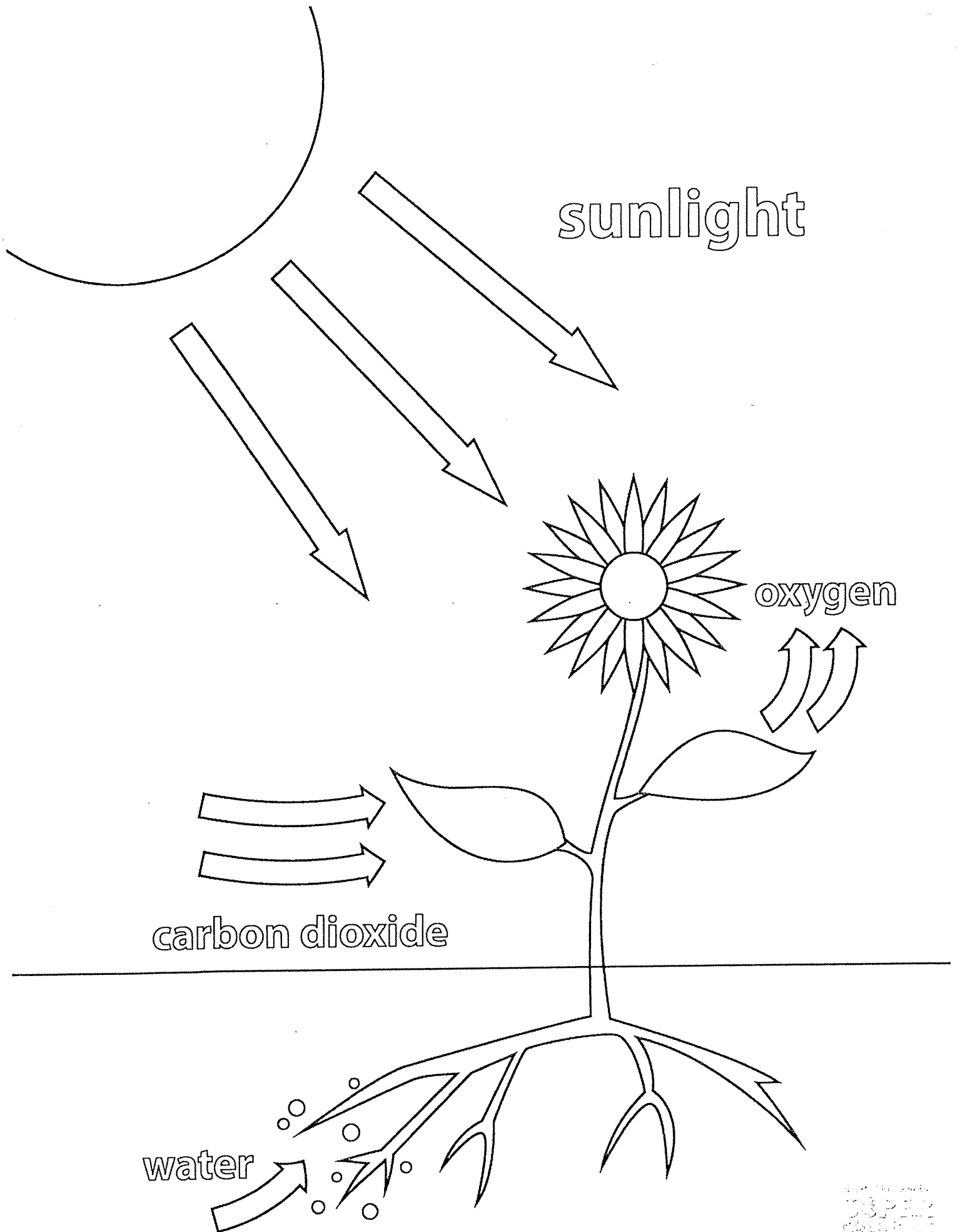
transpiration The process by which plants give off water vapor into the atmosphere.

- What are the byproducts/outputs of photosynthesis? (Answer: oxygen and water)
- What is it about these byproducts that are different from the byproducts of say an automobile? (Answer: The byproducts of photosynthesis are food/nutrients for other organisms, while the byproducts of an automobile are mostly toxic to the environment.)
- What are the inputs for photosynthesis? (Answer: carbon dioxide, water and soil nutrients)

Your Tasks

Diagramming:

1. Diagram the process of photosynthesis indicating inputs and outputs. Color the example provided.
2. Include this diagram in a food web, illustrating the sun's input and several levels of consumers that utilize the plant, not only as a producer of oxygen, but also as a direct food source: for example rabbits or mice and then foxes, etc. You will have to remember what we learned about producers, primary consumers, secondary consumers and apex consumers. Use your phone to look up this information.



Biome Poster

READ:

A **biome** is a large region of Earth that has a certain climate and certain types of living things. Major **biomes** include tundra, forests, grasslands, and deserts. The plants and animals of each **biome** have traits that help them to survive in their particular **biome**. ... Each **biome** has many ecosystems.

Your Tasks

Biome Poster:

1. Choose a biome from the ones listed above, or even choose your neighborhood creek to study. If possible, use the internet and research books to study your biome or the creek and create a poster with the following details included:

_____ The name of your biome and your name.

_____ Characteristics chart (climate, average temperatures, average precipitation)

_____ Five plants that are found in your biome. (Draw and label.)

_____ Five animals or insects that are found in your biome. (Draw and label.)

_____ Threats to your biome. (What is affecting the health of your biome?)

These are each worth 20 points. Your poster may be completed on regular printer paper.

Be prepared to present to the class!

