

4-H Virtual Forest Student Activity Sheet

Photosynthesis

1. Please explain the difference between a “chloroplast” and “chlorophyll”.
2. Fill in the blanks in the following sentence. _____ absorb energy from the sun, _____ enters leaves through the stomata, and _____ enters the leaves through veins.
3. Write the chemical equation for photosynthesis.
4. Explain what happens to the sugars that are not used by trees and plants for energy.
5. Why do leaves change color in the fall?
6. What is decomposition?

4-H Virtual Forest Teacher Answer Sheet

Photosynthesis

1. Please explain the difference between a “chloroplast” and “chlorophyll”.

Answer: Chloroplasts contain green pigments called chlorophyll. Chlorophyll give leaves their green color, and absorb light energy from the sun, but the photosynthetic reaction occurs within chloroplasts.

2. Fill in the blanks in the following sentence. **Chlorophyll** absorbs energy from the sun, **air or carbon dioxide** enters leaves through the stomata, and **water** enters the leaves through veins.

3. Write the chemical equation for photosynthesis.

Answer: Carbon dioxide + water + light energy = sugars + oxygen

(Although we did not mention this in the module to avoid confusion, water is both used AND created during photosynthesis).

4. Explain what happens to the sugars that are not used by trees and plants for energy.

Answer: Trees and plants often produce more food than they need. The excess sugars are stored in the stems, seeds, fruit and roots. We can obtain this energy by eating products such as bananas, oranges, nuts, and other items.

5. Why do leaves change color in the fall?

Answer: As summer turns into fall, the days become shorter and the temperature gets colder. Trees respond to this decrease in sunlight by producing less chlorophyll. Other pigments begin to show through, and the leaves change color from green to yellow, orange, red, or brown. Eventually, trees stop producing chlorophyll entirely. Without chlorophyll, photosynthesis stops, and the leaves fall to the ground.

6. What is decomposition?

Answer: When trees die, they fall to the ground and begin to rot. This process is called decomposition. Decomposition is the opposite of photosynthesis. When trees die and decompose, they take in oxygen and give off carbon dioxide.