

Science Chapter 2 Study Guide

Lesson 1: Vascular Plants

1. Name the three main parts of a vascular plant and their job.
 - a. **Roots: anchor the plant, take in water and minerals from the soil**
 - b. **Stems: support the plant and transport water & nutrients**
 - c. **Leaves: make the food (through photosynthesis) for the plant**
2. What are a *seed* and a *spore* and what are the differences between them? Do they grow in seed or seedless plants?
 - a. **A seed is contains an undeveloped plant and stored food inside a protective coat and it grows in a plant that has seeds**
 - b. **A spore is a single cell that can develop into an identical new plant and it grows in seedless plants**
3. What are an *angiosperm* and a *gymnosperm* and what is the difference between them? Do they grow in seed or seedless plants?
 - a. **An angiosperm is a seed plant that produces flowers.**
 - b. **A gymnosperm is a seed plant that does not produce flowers. It produces seeds inside a cone.**
 - c. **The difference is that an angiosperm produces flowers and a gymnosperm does not.**
4. Name the male and female parts of the flower. Where are the new seeds made?
 - a. **Male= Stamen**
 - b. **Female= Pistil**
 - c. **New seeds are made in the ovary**
5. How does a new seed form (what are the three steps)?
 - a. **Pollination (movement of pollen grains *by bees, animals, and wind*from a stamen to a pistil)**
 - b. **Making a seed (pollen grain reaches the pistil and travels down to the ovary where a pollen and egg cell join and form a seed)**
 - c. **Scattering seeds (seeds are spread by animals or the wind)**

Lesson 2: Plant Transport System

1. How do water and materials move through plants (consider the *roots, stem/trunks, and leaves*)?
 - a. **The roots take in the water and minerals from the soil.**
 - b. **The tubes within the stems or trunk move the water and minerals from roots to the leaves.**
 - c. **The leaf creates the food or sugar for the plant via photosynthesis.**
 - d. **The tubes within the stem or trunk move the sugar from the leaves to the all parts of the plant (roots and stems).**
2. What are the *xylem* and *phloem* and what is the difference between them? Where are they made?
 - a. **The xylem are tiny tubes made of vascular tissue that moves water and minerals up from the ground through the root to the stem.**

- b. The phloem are tiny tubes made of vascular tissue that carry sugar from the leaves down the stem and into the roots.
- c. The xylem carries materials to the leaves and the phloem carries sugars to the rest of the plant.
- d. They are both made in the cambium.

Lesson 3: Photosynthesis and Respiration

1. What is *photosynthesis*?
 - a. Photosynthesis is the process of food being made in the plant leaves.
2. What must be present for photosynthesis to occur?
 - a. Carbon dioxide, water, and energy from sunlight
3. What do the *stomata* do?
 - a. The stomata are tiny holes in the bottom of a leaf or stem. They are surrounded by tiny guard cells that open to allow carbon dioxide into the plant.
4. In what part of the plant does photosynthesis take place? In what part of the cell does it take place?
 - a. Photosynthesis takes place in the leaves.
 - b. Photosynthesis takes place in the chloroplast.
5. What does chlorophyll do?
 - a.
6. What is the sugar that plants produce during photosynthesis?
 - a. Plants produce carbohydrates.
7. Why do animals depend on plants (two reasons)?
 - a. They depend on plants to create oxygen and carbohydrates (food energy).
8. What is *cellular respiration*?
 - a. The release of energy from food.
9. What is the difference between *photosynthesis* and *respiration*?
 - a. They are opposites. During photosynthesis, carbon dioxide, water, and the sun's energy go in and oxygen and sugar come out. During respiration, oxygen and sugar go in and carbon dioxide, water, and energy come out.