

Chapter 22 Plant Diversity

Section 22-1 Introduction to Plants (pages 551-555)

Key Concepts

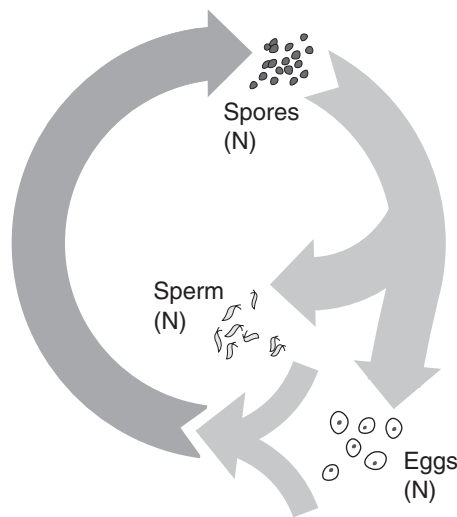
- What is a plant?
- What do plants need to survive?
- How did the first plants evolve?

What Is a Plant? (page 551)

1. Circle the letter of each sentence that is true about plants.
 - a. Plants are multicellular prokaryotes.
 - b. Plants carry out photosynthesis.
 - c. Plants have cell walls made of cellulose.
 - d. Plants develop from multicellular embryos.
2. What pigments do plants use to carry out photosynthesis? _____
3. Is the following sentence true or false? All plants are autotrophs. _____

The Plant Life Cycle (page 552)

4. All plants have a life cycle that is characterized by _____
5. Complete the diagram of the plant life cycle by writing the name of the plant generation in the correct place. For each generation, indicate whether it is haploid or diploid by writing either N or $2N$.



6. Complete the table about plant generations.

PLANT GENERATIONS

Generation	Description	Haploid or Diploid?
	Gamete-producing plant	
	Spore-producing plant	

7. Seed plants have evolved reproductive cycles that can be carried out without _____.

What Plants Need to Survive (page 552)

8. What are the four basic needs of plants?

- a. _____
- b. _____
- c. _____
- d. _____

9. Why are plant leaves typically broad and flat? _____

10. Circle the letter of each sentence that is true about the basic needs of plants.

- a. Plants require oxygen to support cellular respiration.
- b. Plants must get rid of water as quickly as possible.
- c. Water is one of the raw materials of photosynthesis.
- d. Plants have specialized tissues to carry nutrients upward.

Early Plants (pages 553–554)

11. The history of plants can be understood in terms of the evolution of what kind of structures? _____

12. What did the first plants evolve from? _____

13. Circle the letter of each sentence that is true about multicellular green algae.

- a. They have the same photosynthetic pigments as plants.
- b. They have the size, color, and appearance of plants.
- c. They are classified as early plants.
- d. They have reproductive cycles that are similar to those of early plants.

14. How were early plants similar to today's mosses? _____

15. From the first plants, at least two major groups of plants evolved. What did those groups develop into? _____

Overview of the Plant Kingdom (page 555)

16. Circle the letter of each of the important features that botanists use to divide the plant kingdom into four groups.
- a. seeds
 - b. water-conducting tissue
 - c. stems
 - d. flowers
17. What are the four main groups of living plants?
- a. _____
 - b. _____
 - c. _____
 - d. _____
18. The great majority of plants alive today are _____.

Reading Skill Practice

Finding the main ideas of a section can help you organize the important points you need to remember. Skim Section 22-1 to find the main ideas. Write them on the left-hand side of a separate sheet of paper. Then, make a list of supporting details for each main idea on the right-hand side of the sheet.