

CHAPTER

24

DIRECTED READING

Introduction to Plants

► Section 24-1: Adaptations of Plants

Plants Became Established on Land

Complete each statement by writing the correct term or phrase in the space provided.

1. A watertight covering, called a(n) _____, made it possible for plants to live in drier habitats.
2. Pores called _____ enable plants to exchange oxygen and carbon dioxide.
3. A pair of specialized cells called _____ borders each stoma.

Read each question, and write your answer in the space provided.

4. How did early plants obtain nutrients from Earth's rocky surface?

5. Without water, how do the sperm of plants survive and fertilize eggs?

Vascular Tissue, Seeds, and Flowers Made Plants Successful

Read each question, and write your answer in the space provided.

6. How do nonvascular plants differ from vascular plants?

7. What are four advantages of seeds?

8. How do flowers make plant reproduction more efficient?

A Change Occurred in Plant Life Cycles

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|---------------------|---|
| _____ 9. phloem | a. zones of actively dividing plant cells |
| _____ 10. xylem | b. the part of a plant that grows downward |
| _____ 11. shoot | c. tissue that contains soft-walled conducting cells that transport organic nutrients |
| _____ 12. root | d. the part of a plant that grows upward |
| _____ 13. meristems | e. tissue that contains hard-walled conducting cells that transport water and mineral nutrients |

► Section 24-2: Kinds of Plants

Nonvascular Plants Lack a Vascular System

Mark each statement below T if it is true or F if it is false.

- _____ 1. All nonvascular plants are small and relatively simple.
- _____ 2. The sporophytes of nonvascular plants are larger than the gametophytes.
- _____ 3. Nonvascular plants do not have true roots; rhizoids anchor the gametophytes to the surfaces on which they grow.
- _____ 4. Eggs and sperm of nonvascular plants form in separate structures, which are often on separate plants.
- _____ 5. Sporophytes of nonvascular plants grow on the gametophytes and depend on them for nutrients.

Seedless Vascular Plants Do Not Make Seeds

Complete each statement by underlining the correct term or phrase in the brackets.

6. Seedless vascular plants have horizontal underground stems called [roots / rhizomes].
7. Seedless vascular plants have a vascular system with [xylem and phloem / xylem].
8. The much smaller [gametophyte / sporophyte] of seedless vascular plants develops on or below the surface of the soil.
9. Seedless vascular plants without roots and leaves are called [whisk ferns / horsetails].
10. The sporophytes of [ferns / club mosses] have a rhizome that is anchored by roots and leaves called fronds.
11. In some species of [club mosses / ferns], clusters of nongreen spore-bearing leaves form a structure called a cone.

Gymnosperms Are Seed Plants That Produce Cones

In the space provided, write which of the following gymnosperms—conifers, cycads, ginkgo, or gnetophytes—is being described.

- _____ 12. only one living species; has fan-shaped leaves
- _____ 13. has short stems and palmlike leaves; produces male and female cones on separate plants
- _____ 14. trees and shrubs with needlelike or tiny leaves
- _____ 15. diverse group of trees, shrubs, and vines

Angiosperms Are Seed Plants That Produce Flowers

Mark each statement below T if it is true or F if it is false.

- _____ 16. The flowers of some angiosperms are adapted for wind pollination.
- _____ 17. The primary function of a fruit is to nourish a plant embryo.
- _____ 18. The seeds of an angiosperm have a supply of stored food, called endosperm, at some time during their development.
- _____ 19. The purpose of flowers is to prevent self-pollination.
- _____ 20. Wheat, corn, rice, and lawn grasses are dicots.
- _____ 21. Plants that produce leaves with parallel veins are monocots.

► Section 24-3: Plants in Our Lives

Plants Provide Food for Animals

In the space provided, explain how the terms in each pair differ in meaning.

1. vegetative part, fruit

2. potatoes, root crop

3. legumes, root crops

Cereals Are the Most Important Source of Food

Read each question, and write your answer in the space provided.

4. What are cereals?

5. What is a grain?

6. What are the three most important cereal grasses?

Plants Have Many Nonfood Uses

Complete each statement by writing the correct term or phrase in the space provided.

7. After food, _____ is the single most valuable resource obtained from plants.

8. Most of the lumber cut in the United States is used in _____
_____.

9. _____ is a drug used to stabilize irregular heart beats, and it is derived from the leaves of *Digitalis purpurea*.

10. Paper is made from strands of _____.