

Plant Life

UNIT

5

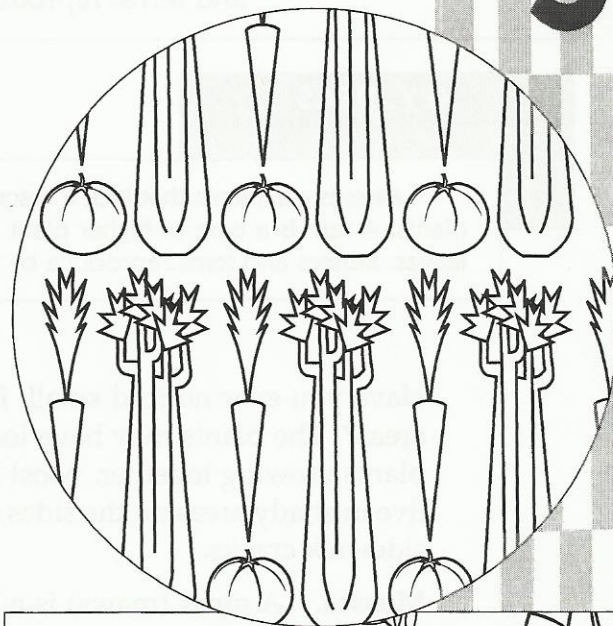
Have you ever wondered what plant part you are eating when you eat a salad? The main ingredient in most salads is lettuce. The part of the lettuce plant you eat is the leaf. Other foods you eat for their leaves include cabbage and spinach. The leaves make food by the process of photosynthesis.

Sometimes a salad might contain carrots, tomatoes, and celery. Carrots are roots. Roots anchor a plant in the soil and take water and other nutrients needed by the plant from the soil. Beets and radishes are other foods that are roots.

What about the tomato? You might think of a tomato as a vegetable, but it is really a fruit. A fruit is a special plant structure that protects one or more seeds. Seeds contain tiny plants and their food inside a protective outer coat. Can you think of other fruits most people consider to be vegetables? You might have guessed cucumbers, zucchini, pumpkins, and other kinds of squash.

The celery in your salad is a plant stem. The stem carries water and other nutrients to and from the roots and leaves of a plant. Another kind of stem you eat is an underground stem—the potato.

The leaves, roots, stems, seeds, and fruits of a plant are all eaten as food. They also help the plant grow and survive in its environment.



Ferns and Mosses

Key Words

- moss:** type of plant that reproduces by spores and does not have a vascular system or true roots
- vascular system:** system of tubes that carries water and other materials throughout a plant
- fern:** type of plant that reproduces by spores and has a vascular system, true roots, and true leaves
- spores:** special cells with which some living things, such as mosses and ferns, reproduce

KEY IDEAS

Mosses are plants that lack a vascular system and other structures found in higher plants. A fern is a type of higher plant that has a vascular system, true roots, and true leaves. Mosses and ferns reproduce by spores.

Have you ever noticed small, fuzzy green plants growing in damp, shady areas? The plants may have looked more like a green mat than a clump of plants growing together. Most likely, the plants were mosses. Mosses often live in shady areas on the sides of trees, on rocks and fallen logs, or between sidewalk cracks.

Mosses. A **moss** (maws) is a type of plant that does not have a vascular system. A **vascular system** (VAS-kyuh-luhr SIHS-tuhm) is a system of tissue, or tubes, that transports water and other materials throughout a plant. In mosses, water flows directly and slowly from cell to cell by diffusion. Water cannot travel very far or very fast in this way. Because water moves directly from cell to cell, most mosses grow only a few inches tall.

Mosses lack many structures found in other plants. For example, mosses do not have roots that reach down into the soil and bring water up to the plant. Because they lack roots, most mosses live in moist areas. Mosses also need a constant supply of water to reproduce.



1. Why do mosses live in moist, damp areas?

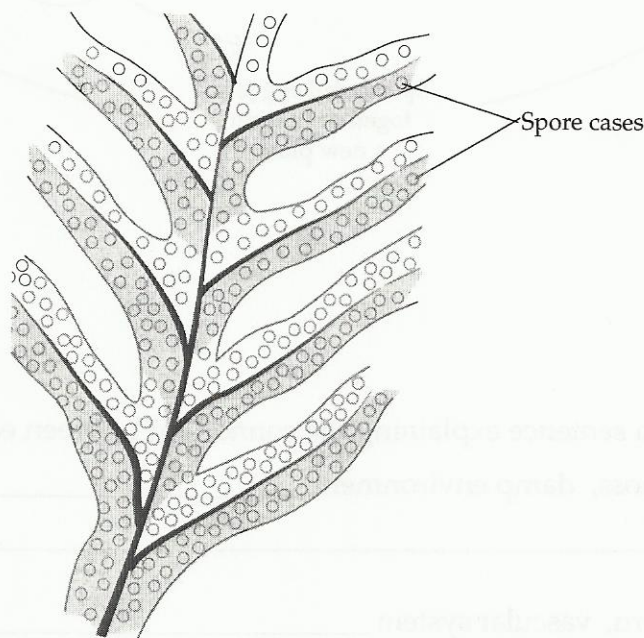
Ferns. A fern (fern) is a type of plant that reproduces by spores and has a vascular system, true roots, and true leaves. Because it has a vascular system, a fern is considered to be a higher plant. Ferns can grow taller than mosses because a fern's vascular system carries nutrients and water quickly from the soil to the leaves. In fact, during the time of the dinosaurs when the earth's climate was warm and wet, ferns grew as tall as trees. Fern forests covered the earth. In warm, tropical jungles where there is plenty of rain, ferns still grow to be very large.



2. How do ferns differ from mosses? _____

Reproduction. Ferns and mosses both reproduce, or make young, with spores. **Spores** (spohrz) are special cells from which new plants can grow. If you look on the underside of a fern leaf, you may see rows of black or brown dots. These dots are spore cases. Hundreds of spores may be contained in a single spore case. See Fig. 22-1. When the spores are ready, the cases split open. The tiny spores spill out and the wind carries them away. When a spore lands in a suitable place, it can grow into a new plant.

Fig. 22-1

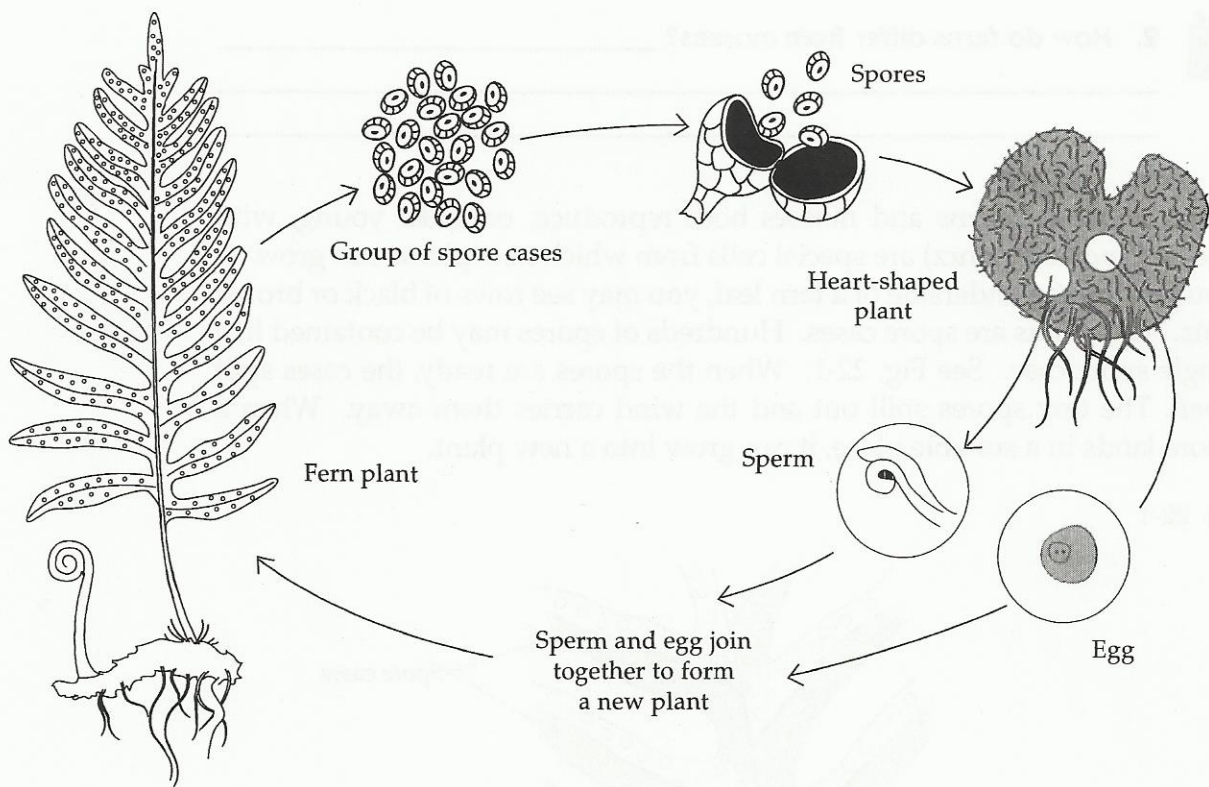


The new fern plant does not look like the plant that released the spores. Instead it looks like a tiny, heart-shaped leaf. This tiny plant releases male sex cells, or sperm, that join with female sex cells, or eggs, to form a new fern plant. The new fern looks just like the one that released the spores. When the new plant has grown, it releases spores that start the cycle again.

TAKE ANOTHER LOOK

Fig. 22-2 shows the structure of a fern and the stages of fern reproduction.

Fig. 22-2



Check Your Understanding

Write a sentence explaining the connection between each pair of words.

3. moss, damp environment _____

4. fern, vascular system _____

5. vascular system, water _____

6. spores, reproduce _____

7. Write the letters of the steps of fern reproduction in the correct order. _____
- a. sperm and egg join together b. spores form
c. large fern plant grows d. heart-shaped plant grows
8. In the margin, make a simple drawing of a fern plant. Show where the spores are found.

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9. What trait do mosses and ferns have in common?

10. Why do moss plants usually grow to be only a few inches tall?

11. How does not having roots affect a moss plant?

12. What is a major difference between mosses and ferns?

13. In your own words, describe what spores do.

14. What do you think are some possible reasons that the earth is no longer covered with giant fern forests?

