

# Plant Structures



**Pollen** (pól' ən) a powdery substance produced by the stamens of a flower that fertilizes cells in the flower's ovary

**Stamen** (stā' mən) the male organ of a flower that produces pollen

**Pistil** (pis' təl) the central female organ of a flower that catches the pollen; at the bottom of the pistil is the ovary, where seeds develop

## Using SCIENCE Words

Which vocabulary word best completes the statement below?

1. Cells in the flower's ovary are fertilized by \_\_\_\_\_.  
A. pollen  
B. the stamen  
C. the pistil

- 1 Just as cells in your body join together to form tissues and organs, plant cells build tissues and organs too. These structures perform functions that keep the plant alive.
- 2 Plants can have organs that are made of two or more tissues. These tissues work together to perform a particular function. The organs that many plants have are roots, stems, and leaves. Each organ does a distinct job that allows the plant to survive. These organs are each made of three kinds of tissue.
- 3 Roots grow underground and anchor the plant in the soil. Roots absorb water and minerals that a plant needs to grow. Some plants' roots also store food for the plant. When you eat carrots, radishes, or beets, you are eating food stored in the roots of those plants.
- 4 Stems support the leaves of a plant. They help move sugars made in the leaves to other parts of the plant that need food. Stems also carry water, minerals, and sugars throughout the plant.
- 5 Leaves are the organs that perform most of the process of photosynthesis in plants. The shape and structure of leaves can help a plant trap light and reduce water loss. Leaves also exchange gases for a plant. Oxygen and carbon dioxide enter and leave a plant through tiny openings in the leaves.
- 6 The flower is another organ present in many plants. The flower is the part of a plant where seeds are formed. Before seeds can form, pollination must take place.
- 7 Here's how pollination happens. A powdery material called **pollen** is produced by the male organ of the flower, called a **stamen**. Some of the pollen lands on the pistil. The **pistil** is the central female organ of the flower. The pistil has a sticky end that catches some of the pollen. Then a tube grows from each pollen grain downward into the plant's ovary. When cells in the ovary are fertilized by special cells in the pollen, they can develop into embryos and form seeds.
- 8 Both pollination and fertilization must take place to produce seeds that will grow into new plants. Being carried by wind and by insects are two ways that pollen can be moved from a stamen onto a pistil.
- 9 As you know, a plant's survival as a species depends on its ability to grow and reproduce. The flower is an organ that allows many species of plants to create seeds and make new plants. Flowers are adapted to produce seeds.
- 10 Not all plants that produce seeds have flowers. Pine, fir, and spruce trees make seeds inside their cones. Still other plants do not produce seeds at all. These plants reproduce by forming tiny cells called spores. When spores fall onto moist ground, they grow into new plants. Mosses and ferns are examples of plants that produce spores.

## COMPREHENSION

Write *T* if the statement is true. Write *F* if it is false.

- In plants, tissues are made of organs.
- Flowers are organs.
- Most photosynthesis takes place in the roots of a plant.
- Fertilization must take place in a plant before pollination can occur.
- All plants reproduce by developing and spreading seeds.

## LEARN ABOUT WORDS

A. You can often tell the meaning of a word by reading the words around it. Look at each number in parentheses. Find the paragraph in the reading with the same number. Then find the word that fits the given meaning. Write the word.

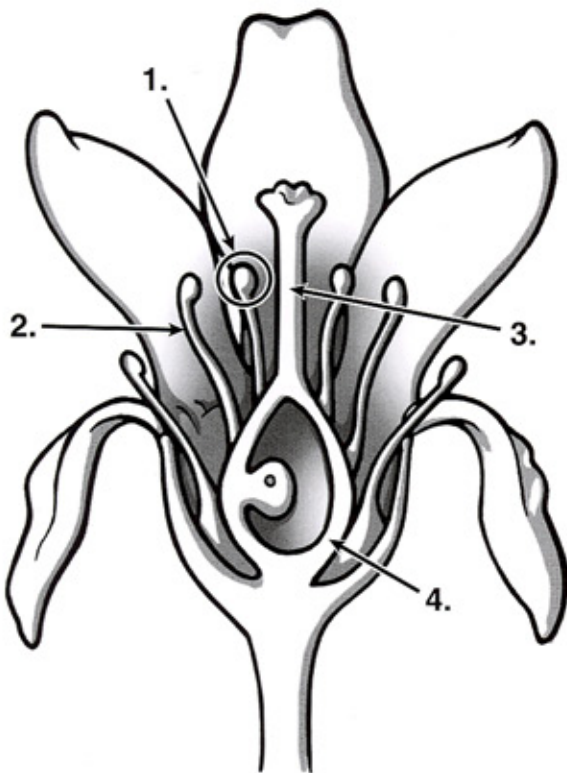
- a powdery material necessary for both pollination and fertilization (7)
- male organ of a flower that produces pollen (7)
- female organ of a flower that catches pollen (7)
- part of the flower where cells are fertilized by cells in pollen (7)

B. To make sensible sentences, words must be put together in a meaningful order. Read each group of words below. If the words make sense in their present order, write *S*. If they make no sense because the order is jumbled, write *J*.

- A carrot is food stored in the root of the plant.
- Only can green food make their own plants.
- Most plants roots have.
- Some flowers produce only one seed.
- Sunlight leaves trap for the plant.
- Water can enter a plant through its roots.

## THINK ABOUT IT

Look at the diagram. It shows some of the parts of a flower. Use the diagram to answer the question below.



17. Which arrow on the diagram represents the part of the flower where seeds are produced?
- A. 1
  - B. 2
  - C. 3
  - D. 4

## Using SCIENCE Words

1. A

## Comprehension

2. F
3. T
4. F
5. F
6. F

## Learn About Words

- A. 7. pollen
8. stamen
9. pistil
10. ovary
- B. 11. S
12. J
13. J
14. S
15. J
16. S

## Think About It

17. D

## Writing About Science

Explain the differences between how a fern reproduces and how a pine tree reproduces.