

Chapter 24 Reproduction of Seed Plants**Section 24–1 Reproduction With Cones and Flowers (pages 609–616)**

This section describes the reproductive structures of gymnosperms and angiosperms. It also explains how pollination and fertilization differ between angiosperms and gymnosperms.

Alternation of Generations (page 609)

1. Circle the letter of each sentence that is true about alternation of generations in plants.
 - a. In all plants, the sporophyte generation is diploid.
 - b. The gametophyte in seed plants is hidden within the sporophyte plant.
 - c. The recognizable part of a seed-bearing plant is the gametophyte.
 - d. In all plants, the gametophyte generation is haploid.
2. An important trend in plant evolution is the reduction in the size of the _____.
3. Where are the gametophytes found in gymnosperms and angiosperms?

Life Cycle of Gymnosperms (pages 610–611)

4. Reproduction in gymnosperms takes place in _____.
5. Circle the letter of what produces cones in gymnosperms.
 - a. mature sporophyte
 - b. mature gametophyte
 - c. pine trees
 - d. pollen seeds
6. What kind of cone produces male gametophytes? _____
7. The male gametophytes of gymnosperms are called _____.
8. Circle the letter of each sentence that is true about seed cones.
 - a. They produce pollen grains.
 - b. They produce female gametophytes.
 - c. They have two ovules at the base of each scale.
 - d. They are generally much larger than pollen cones.
9. Is the following sentence true or false? Each mature female gametophyte contains hundreds of egg cells ready for fertilization. _____
10. How long does the gymnosperm life cycle typically take to complete?

11. In the gymnosperm life cycle, how do the pollen grains reach the female cones?

12. What ensures that pollen grains stay on the scales of a female cone? _____

13. A structure grown by a pollen grain that contains two sperm nuclei is called a(an) _____.

14. What happens to the two sperm cells once the pollen tube reaches the female gametophyte? _____

15. Circle the letter of what a gymnosperm embryo can be called.

- a. mature gametophyte
- b. new sporophyte
- c. mature sporophyte
- d. new gametophyte

16. What are the three generations of the gymnosperm life cycle that are contained in a gymnosperm seed? _____

Structure of Flowers (pages 612–613)

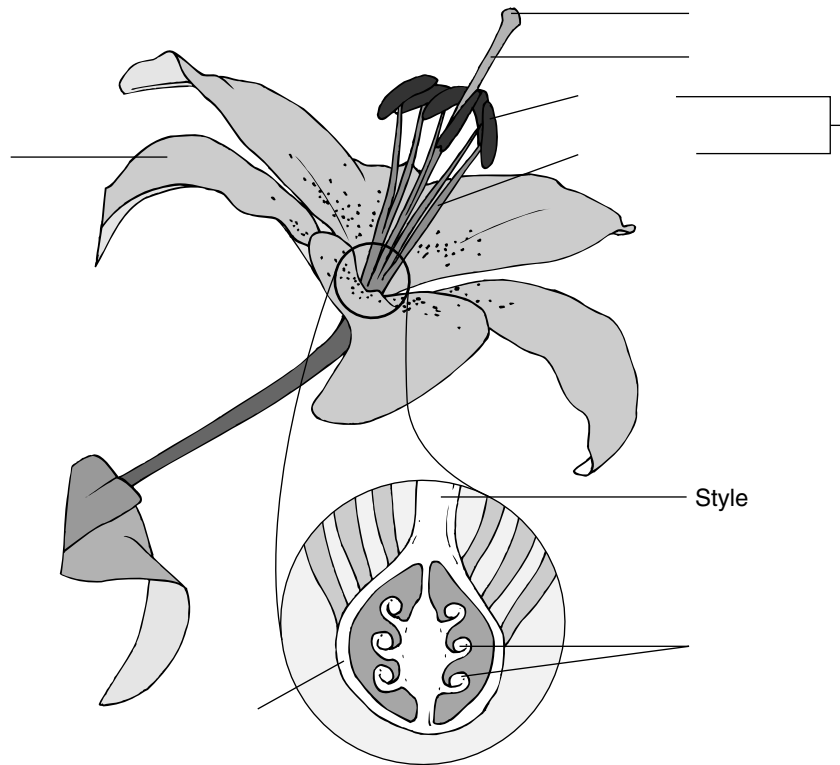
17. What are the four kinds of specialized leaves that compose a flower?

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

Match the floral part with its description.

Floral Part	Description
_____ 18. Sepals	a. Stalk with the stigma at the top
_____ 19. Petals	b. Structures where male gametophytes are produced
_____ 20. Stamen	c. Flower part that contains one or more ovules
_____ 21. Filament	d. Outermost, green floral parts
_____ 22. Anthers	e. Long, thin structure that supports an anther
_____ 23. Carpels	f. Innermost floral parts that produce female gametophytes
_____ 24. Ovary	g. Sticky, top portion of style
_____ 25. Style	h. Male structure made up of an anther and a filament
_____ 26. Stigma	i. Brightly colored parts just inside the sepals

27. Label the parts of the flower on the illustration.



28. What is a pistil? _____

29. What are the separate male and female flowers on a corn plant? _____

Life Cycle of Angiosperms (pages 614–615)

30. Where does reproduction in angiosperms take place? _____

31. Inside the anthers, each cell undergoes meiosis and produces haploid cells called _____.
32. In angiosperms, the pollen grain is the entire _____.
33. The female gametophyte of an angiosperm, contained within the ovary, is called the _____.
34. Circle the letter of each sentence that is true about the life cycle of angiosperms.
- a. The cycle begins when the mature sporophyte produces flowers.
 - b. A pollen grain stops growing when it is released from the stigma.
 - c. The female gametophyte develops in the ovule.
 - d. The egg nucleus is one of the eight nuclei in the embryo sac.

Pollination (page 615)

35. How are most gymnosperms pollinated? _____
36. How are most angiosperms pollinated? _____
37. What are three kinds of animals that pollinate angiosperms? _____

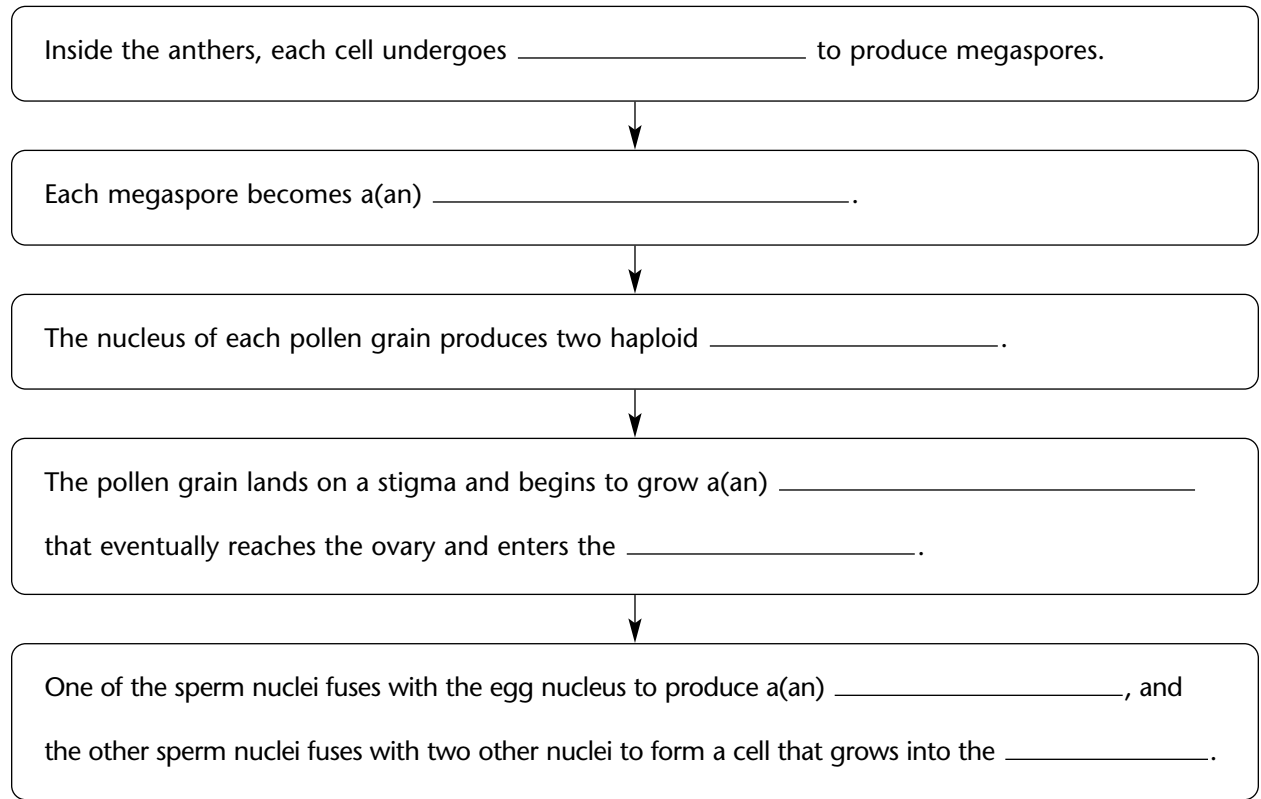
Fertilization in Angiosperms (page 616)

38. What are the two distinct fertilizations that take place in angiosperms?
- a. _____

 - b. _____

39. The food-rich tissue that nourishes a seedling as it grows is known as _____.
40. Why is fertilization in angiosperms known as double fertilization? _____

41. Complete the flowchart about the life cycle of angiosperms.



Reading Skill Practice

Outlining is a way you can help yourself understand better and remember what you have read. Write an outline for Section 24–1, *Reproduction With Cones and Flowers*. In your outline, use the blue headings for the first level and the green subheadings for the second level. Then, list the details that support, or back up, the main ideas.