

# Chapter 24

## Reproduction in Plants

### Reinforcement and Study Guide

#### Section 24.1 Life Cycles of Mosses, Ferns, and Conifers

*In your textbook, read about alternation of generations and the life cycles of mosses and ferns.*

Use each of the terms below just once to complete the following statements.

diploid	meiosis	sporophyte
dominant	mitosis	vegetative reproduction
egg	protonema	
gametophyte	sperm	

- The two phases of the plant life are the \_\_\_\_\_ stage and the \_\_\_\_\_ stage.
- The cells of the sporophyte are all \_\_\_\_\_.
- The female gamete is the \_\_\_\_\_, and the male gamete is the \_\_\_\_\_.
- Some plants reproduce asexually by a process called \_\_\_\_\_, in which a new plant is produced from an existing vegetative structure.
- Mosses belong to one of the few plant divisions in which the gametophyte plant is the \_\_\_\_\_ generation.
- A small, green filament of moss cells that develops into either a male or female moss gametophyte is known as a(n) \_\_\_\_\_.
- The moss diploid zygote divides by \_\_\_\_\_ to form a new sporophyte in the form of a stalk and capsule.
- Spores are produced by \_\_\_\_\_ in the capsule of the moss sporophyte.

**Number each description to order the stages from spore release of the life cycle of a fern, from 1 to 7.**

- \_\_\_\_\_ 9. A spore germinates and grows into a heart-shaped gametophyte called a prothallus.
- \_\_\_\_\_ 10. After fertilization, the diploid zygote grows into a sporophyte.
- \_\_\_\_\_ 11. As the sporophyte grows, roots and fronds grow out from the rhizome.
- \_\_\_\_\_ 12. Sperm swim through a film of water on the prothallus to reach and fertilize an egg in the archegonium.
- \_\_\_\_\_ 13. In each sporangium, spores are produced by meiosis, and the cycle begins again as the spores are dispersed by the wind.
- \_\_\_\_\_ 14. Sori, or clusters of sporangia, grow on the pinnae.
- \_\_\_\_\_ 15. A sporangium bursts, releasing haploid spores.

**Chapter  
24****Reproduction in Plants, *continued*****Reinforcement and Study Guide****Section 24.1 Life Cycles of Mosses,  
Ferns, and Conifers, *continued***

*In your textbook, read about the life cycle of conifers.*

**Answer the following questions.**

**1.** What is the dominant stage in conifers?

\_\_\_\_\_

**2.** What does the adult conifer produce on its branches?

\_\_\_\_\_  
\_\_\_\_\_

**3.** What is a megaspore?

\_\_\_\_\_  
\_\_\_\_\_

**4.** What are microspores and how are they produced?

\_\_\_\_\_  
\_\_\_\_\_

**5.** What do the microspores develop into?

\_\_\_\_\_

**6.** What is a micropyle?

\_\_\_\_\_

**7.** How does fertilization take place?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**8.** After fertilization, a zygote develops inside the ovule into an embryo with several cotyledons. What happens to the ovule?

\_\_\_\_\_  
\_\_\_\_\_

**9.** What happens to the seeds when the female cone opens and falls to the ground?

\_\_\_\_\_  
\_\_\_\_\_

**10.** What will the seedling become?

\_\_\_\_\_