

Chapter
22**The Diversity of Plants, *continued*****Reinforcement and Study Guide****Section 22.2 Non-Seed Vascular Plants, *continued***

In your textbook, read about sphenophyta and pterophyta.

Complete each statement.

- 16.** The hollow-stemmed horsetail appears to be jointed with scalelike _____ surrounding each joint.
- 17.** The most recognized generation of ferns is the _____ generation.
- 18.** The _____ in most ferns is a thin, flat structure.
- 19.** In most ferns, the main stem, called a _____, is underground. It contains many starch-filled cells for _____.
- 20.** The leaves of a fern are called _____ and grow upward from the rhizome.
- 21.** Fronds are often divided into leaflets called _____, which are attached to a central stipe.
- 22.** Ferns were the first vascular plants to evolve leaves with branching _____ of vascular tissue.
- 23.** The common names for the seedless vascular plants, Lycophyta, Sphenophyta, and Pterophyta are _____, _____, and _____.

Answer the following questions on the lines provided.

- 24.** Why are sphenophytes, or horsetails, sometimes referred to as scouring rushes?

- 25.** Why might you be more familiar with ferns than with club mosses and horsetails?

Chapter
22**The Diversity of Plants, continued****Reinforcement and Study Guide****Section 22.3 Seed Plants**

In your textbook, read about the seed plants—cycadophyta, ginkgophyta, gnetophyta, coniferophyta, and anthophyta.

Complete each statement.

1. An _____, or young diploid sporophyte, has food-storage organs called _____, which develop into leaves.
2. Vascular plants that produce _____ in cones are sometimes called _____.
3. Seed plants do not require _____ for _____.
4. The male gametophyte develops inside a structure called a(n) _____ that includes sperm cells, nutrients, and a protective outer covering.
5. The female gametophyte, which produces the egg cell, is contained within a sporophyte structure called a(n) _____.
6. Biennials develop large storage roots and live for _____.
7. Perennials produce flowers and seeds periodically for _____.
8. Annual plants live for _____.
9. _____ have one seed leaf; _____ have two seed leaves.

For each statement below, write **true** or **false**.

- _____ 10. Cycads are related to palm trees but their leaves unfurl like fern fronds.
- _____ 11. There is only one species of ginkgo tree alive today.
- _____ 12. Most gnetophytes today are found in the deserts or mountains of Africa, Asia, North America, and Central or South America.
- _____ 13. Most conifers are evergreen plants that lose their needlelike leaves all at once and only grow in nutrient-rich soil.
- _____ 14. Dropping leaves is an adaptation in deciduous plants to reduce water loss when it is less available during winter.
- _____ 15. Anthophytes are unique in that they are the only division of plants that produce fruits.