Lesson 24

Gymnosperms and Angiosperms

Key Words

gymnosperms: seed plants whose seeds are usually found inside a cone

conifers: cone-bearing plants with needle-shaped leaves

angiosperms: seed plants whose seeds form inside flowers and are protected by fruits

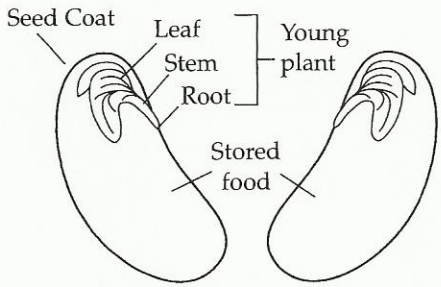
KEY IDEAS

Gymnosperms and angiosperms are seed plants. Seed plants are the most common type of plant because seeds enable them to reproduce successfully.

Almost everywhere you look, you see plants. From the grass on a baseball field to vegetables in a garden, our world is filled with plants. But what do these plants have in common? They reproduce by seeds. Seed plants are found in so many places because seeds are the best adaptation for plant reproduction.

Seeds. Recall from Lesson 23 that a seed is a special reproductive structure of a plant. Because a seed is quite small, you may think it is very simple. But even the smallest seed holds a young plant and its food. Seeds are wrapped in a hard coat that protects the young plant inside from damage or drying out before the plant starts to grow. Almost everything the young plant needs to start life is inside the seed, as shown in Fig. 24-1.

Fig. 24-1



1. **What is inside a seed?** _____

2. **Why are seeds the best adaptation for plant reproduction?**

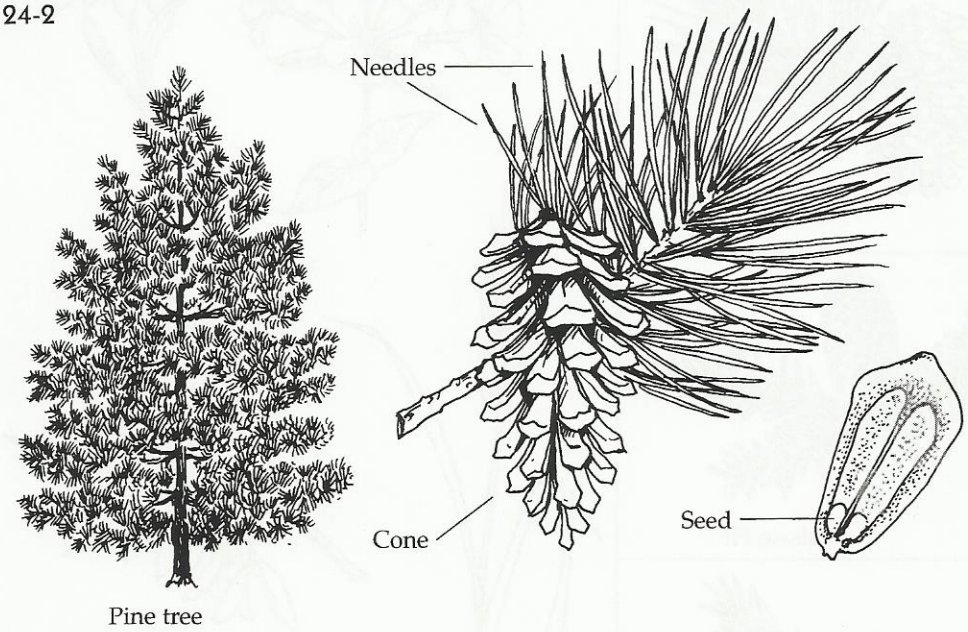
_____

Gymnosperms. There are two main types of seed plants. The seed plants that evolved first are called gymnosperms. **Gymnosperms** (JIHM-noh-spermz) are seed plants whose seeds are usually found inside a cone, instead of a flower. The word "gymnosperm" means "naked seed," because the seeds inside a cone are not protected by a fruit.

Most gymnosperms are conifers. **Conifers** (KAHN-uh-fuhrz) are cone-bearing plants with needle-shaped leaves. See Fig. 24-2. Conifers include pine, fir, and spruce trees, and are commonly called evergreens. Some conifers, such as giant redwood trees, are the oldest and largest living things on the earth.

Conifers are well-adapted to live in cold or dry areas. Their leaves are needle-shaped, rather than flat and broad. The special needle shape keeps conifer leaves from drying out. Conifer leaves are also protected by a hard, waxy coating.

Fig. 24-2



Angiosperms. The most common type of seed plants are the flowering plants, or **angiosperms** (AN-jee-oh-spermz). Their seeds form inside a special reproductive structure called a flower. You may recognize flowering plants, such as roses and daisies, by their large, pretty flowers. But did you know that grasses, oak trees, and clover are also flowering plants? These plants and many others have flowers that are very small. Recall from Lesson 23 that the flower develops into a fruit, which protects one or more seeds. The fruit's protection of the seed is one reason why angiosperms are better adapted to reproduce than gymnosperms. Fruits include apples, pears, tomatoes, and cucumbers. They all contain seeds.

3. **Why are angiosperms better adapted to reproduce than gymnosperms?** _____

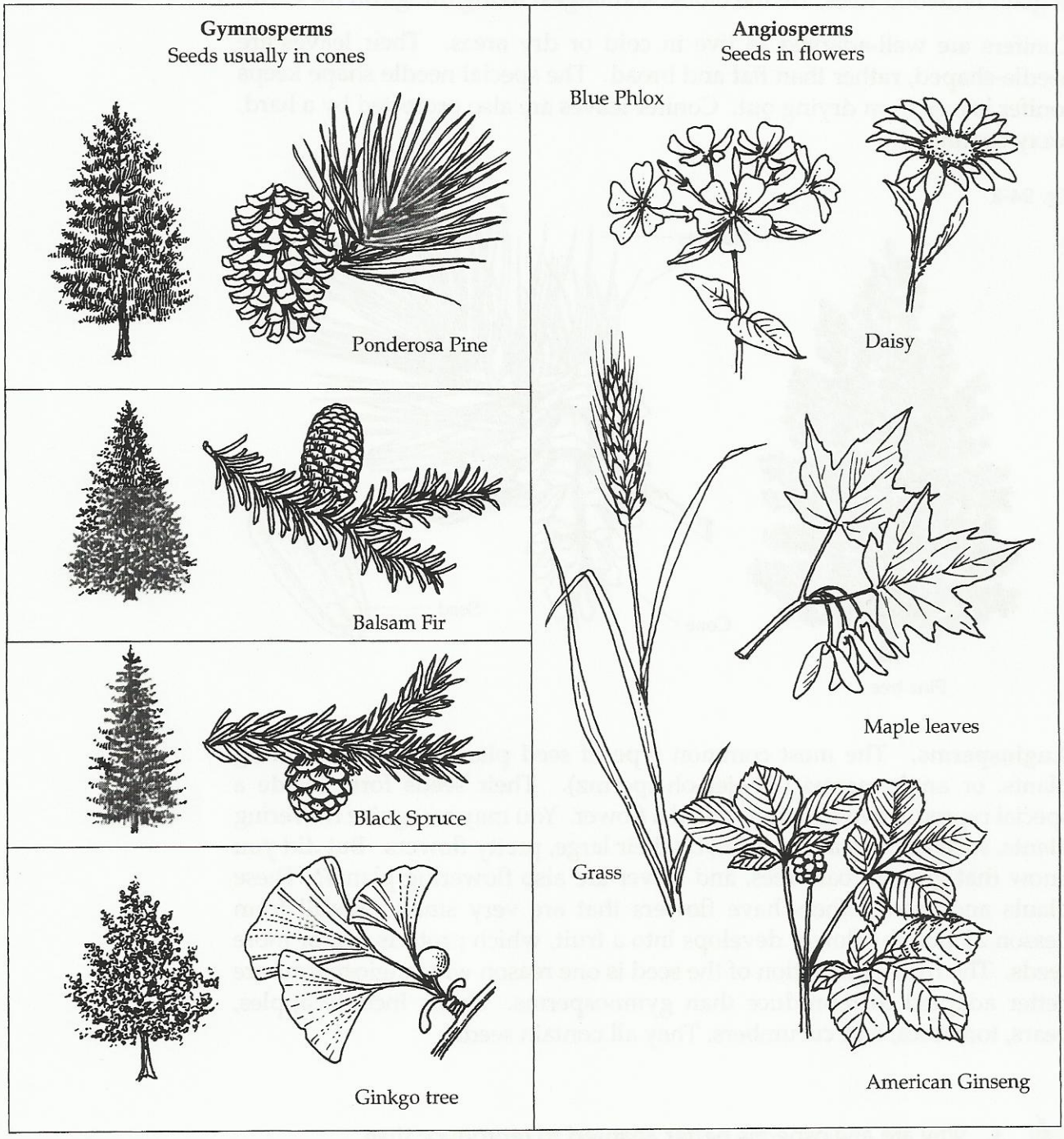
_____

TAKE ANOTHER LOOK

Fig. 24-3 shows a variety of the two main types of seed plants: gymnosperms and angiosperms.

Fig. 24-3

Seed Plants



Check Your Understanding

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

4. gymnosperm, angiosperm _____

5. conifer, cone _____

6. cone, flower _____

7. How do seeds help seed plants reproduce successfully?

8. Why is the term "naked seed" a good name for a gymnosperm?

9. Why are conifers well-adapted to live in cold or dry areas?

10. Why are there more angiosperms than gymnosperms?