CHAPTER 5

SEED PLANTS

SECTION 5-1

The Characteristics of Seed Plants
(pages 140-149)

This section tells about the characteristics of seed plants. It also describes the parts of a seed and the functions of leaves, stems, and roots.

What Is a Seed Plant? (pages 140-141)

1. Circle the letter of each sentence that is true about seed plants.
   a. Seedless plants outnumber seed plants.
   b. Seed plants do not have vascular tissue.
   c. Seed plants use seeds to reproduce.
   d. All seed plants have roots, leaves, and stems.

2. In seed plants, the plants that you see are in the ________________ stage of the life cycle. The ________________ stage is microscopic.

Vascular Tissue (page 141)

3. In what two ways does vascular tissue help seed plants to live on land?
   a. ______________________________________________________________________
   b. ______________________________________________________________________

4. Circle the letter of the vascular tissue through which food moves.
   a. xylem  b. phloem  c. roots  d. stems

5. Circle the letter of the vascular tissue through which water moves.
   a. xylem  b. phloem  c. roots  d. stems

6. Food made in the plant’s ________________ travels to the roots and stems.
7. Water and nutrients absorbed by the plant’s ___________ travel to the stems and leaves.

**Seeds (page 142)**

8. What is a seed? ________________________________

9. Is the following sentence true or false? Seed plants must have water for fertilization to occur. ________________

Match the part of the seed with its function.

<table>
<thead>
<tr>
<th>Seed Part</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>______ 10. embryo</td>
<td>a. Keeps the seed from drying out</td>
</tr>
<tr>
<td>______ 11. cotyledon</td>
<td>b. Young plant that develops from the fertilized egg</td>
</tr>
<tr>
<td>______ 12. seed coat</td>
<td>c. A seed leaf that stores food</td>
</tr>
</tbody>
</table>

**Seed Dispersal (page 143)**

13. What do seeds need to develop into a new plant? ________________________________

14. Is the following sentence true or false? Seeds can begin to grow in any place they land. ________________

15. Complete the concept map to show ways that seeds are scattered.

Seeds scatter

by

[Diagram of seed dispersal with missing text]
Germination (page 144)

16. What is germination?

17. Circle the letter before each sentence that is true about germination.
   a. All seeds germinate immediately after they are dispersed.
   b. The embryo uses its stored food to begin to grow.
   c. First, the embryo’s leaves and stem grow upward.
   d. Seeds that are dispersed far away from the parent have a better chance of survival.

Leaves (pages 144–146)

18. What role do leaves play in a plant?

Look at the structure of a leaf in Exploring a Leaf on page 145. Match the leaf part with its function.

<table>
<thead>
<tr>
<th>Leaf Part</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. cuticle</td>
<td>a. Spaces between these cells temporarily store carbon dioxide and oxygen</td>
</tr>
<tr>
<td>20. xylem</td>
<td>b. Carries water from the roots to the leaves</td>
</tr>
<tr>
<td>21. phloem</td>
<td>c. Waxy, waterproof coating that covers the leaf’s upper surface</td>
</tr>
<tr>
<td>22. stomata</td>
<td>d. Contain chloroplasts</td>
</tr>
<tr>
<td>23. lower leaf cells</td>
<td>e. Carries food made in the leaves to the rest of the plant</td>
</tr>
<tr>
<td>24. upper leaf cells</td>
<td>f. Tiny pores that open and close to let carbon dioxide in and water vapor and oxygen out</td>
</tr>
</tbody>
</table>

25. Is the following sentence true or false? The cells that contain the most chloroplasts are near the leaf’s upper surface.  

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CHAPTER 5, Seed Plants (continued)

26. The process by which water evaporates from a plant’s leaves is called __________.

27. Is the following sentence true or false? On very hot days, the stomata often open to keep the plant from losing water. __________

▲ Stems (pages 146–148)

28. List three functions of stems.
   a. ____________________________________________________________________
   b. ____________________________________________________________________
   c. ____________________________________________________________________

29. Is the following sentence true or false? Herbaceous stems are hard and rigid and have an outer layer called bark. __________

30. Circle the letter before the cell layer that produces new phloem and xylem.
   a. heartwood       b. sapwood       c. bark           d. cambium

31. What is heartwood? ____________________________________________________________________

32. Circle the letter before the tissue that makes up a tree’s annual rings.
   a. xylem       b. phloem       c. cambium       d. bark

33. Is the following sentence true or false? One year’s growth of a tree is represented by one pair of light and dark rings in the tree’s stem. __________

▲ Roots (pages 148–149)

34. List three functions of roots.
   a. ____________________________________________________________________
   b. ____________________________________________________________________
   c. ____________________________________________________________________

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35. Look at the two types of root systems illustrated below. Label the roots as taproot or fibrous roots.

Match the root structure with its function.

<table>
<thead>
<tr>
<th>Root Structure</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. root cap</td>
<td>a. Moves food to the roots</td>
</tr>
<tr>
<td>37. root hairs</td>
<td>b. Protects the root from injury during growth</td>
</tr>
</tbody>
</table>
The Characteristics of Seed Plants

♦ Understanding Main Ideas

Answer the following questions in the space provided.

1. Name four characteristics of seed plants.

2. What are three important parts of a seed?

♦ Building Vocabulary

Fill in the spaces in the table below.

<table>
<thead>
<tr>
<th>Part of Plant</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>leaf</td>
<td>3. _______</td>
</tr>
<tr>
<td>cambium</td>
<td>4. _______</td>
</tr>
<tr>
<td>5. _______</td>
<td>anchors plants and absorbs water and minerals</td>
</tr>
<tr>
<td>seed</td>
<td>6. _______</td>
</tr>
<tr>
<td>7. _______</td>
<td>the vascular tissue through which water and nutrients travel</td>
</tr>
<tr>
<td>8. _______</td>
<td>the vascular tissue through which food moves</td>
</tr>
<tr>
<td>root cap</td>
<td>9. _______</td>
</tr>
<tr>
<td>10. _______</td>
<td>small openings or pores on the underside of leaves</td>
</tr>
<tr>
<td>stem</td>
<td>11. _______</td>
</tr>
<tr>
<td>cotyledon</td>
<td>12. _______</td>
</tr>
</tbody>
</table>