

## Section 25–2 Plant Responses (pages 639–642)



### Key Concepts

- What are plant tropisms?
- What is photoperiodism?
- How do deciduous plants prepare for winter?

### Tropisms (page 639)

1. What are tropisms? \_\_\_\_\_  
\_\_\_\_\_
2. What do tropisms demonstrate about plants? \_\_\_\_\_  
\_\_\_\_\_
3. Complete the table about plant tropisms.

**PLANT TROPISMS**

Tropism	Definition
Gravitropism	
Phototropism	
	The response of a plant to touch

4. Circle the letter of each sentence that is true about the effects of thigmotropism.
  - a. The tendrils of a grapevine wrap tightly around any object they encounter.
  - b. A plant that is touched regularly may be stunted in growth.
  - c. The stems of climbing plants don't grow straight up.
  - d. When the tip of a vine encounters an object, it breaks off.

### Rapid Responses (page 640)

5. The folding together of mimosa leaflets when touched is the result of what changes in cells at the base of each leaflet? \_\_\_\_\_  
\_\_\_\_\_
6. What does a fly trigger in a Venus' flytrap that causes the leaf to snap shut?  
\_\_\_\_\_

### Photoperiodism (page 641)

7. Why are plants such as chrysanthemums and poinsettias called short-day plants?  
\_\_\_\_\_
8. What are long-day plants? \_\_\_\_\_

9. What is photoperiodism? \_\_\_\_\_  
\_\_\_\_\_
10. What is photoperiodism in plants responsible for? \_\_\_\_\_  
\_\_\_\_\_
11. What plant pigment is responsible for photoperiodism? \_\_\_\_\_
12. How does phytochrome control photoperiodism? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Winter Dormancy (pages 641–642)**

13. What is dormancy? \_\_\_\_\_  
\_\_\_\_\_
14. How do shorter days and lower temperatures affect photosynthesis? \_\_\_\_\_  
\_\_\_\_\_
15. As cold weather approaches, what happens to deciduous plants? \_\_\_\_\_  
\_\_\_\_\_
16. When days shorten at summer’s end, what changes start a series of events that gradually shuts down the leaves of a flowering plant? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
17. The layer of cells at the petiole that seals off a leaf from the vascular system is called the \_\_\_\_\_.
18. Why doesn’t a tree’s sap freeze during a cold winter? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Reading Skill Practice**

A flowchart can help you remember the order in which events occur. On a separate sheet of paper, create a flowchart that describes the steps that take place when flowering plants lose their leaves as winter approaches. This process is explained in the subsection Winter Dormancy. For more information about flowcharts, see Organizing Information in Appendix A of your textbook.