As you read Chapter 12, which begins on page 278 of your textbook, answer the following questions.

**Strange but True!** (p. 278)
1. How do wasps act as a natural pesticide for corn plants?

**What Do You Think?** (p. 279)
Answer these questions in your ScienceLog now. Then later, you’ll have a chance to revise your answers based on what you’ve learned.

**Investigate!** (p. 279)
2. What is the purpose of this activity?

**Section 1: The Reproduction of Flowering Plants** (p. 280)
3. Which of the following statements is NOT true of flowering plants?
   a. Fertilization takes place within the flower.
   b. They produce seeds in fruit.
   c. They use flowers to reproduce asexually.
   d. They are the largest group of plants in the world.

**How Does Fertilization Occur?** (p. 280)
4. Flowers can have both male and female reproductive structures.
   True or False? (Circle one.)
5. Number the following steps of flower fertilization in the order of their occurrence by writing the appropriate number in the space provided.

   ___ Pollen lands on the stigma.
   ___ A sperm cell fuses with an egg in the ovule.
   ___ A pollen tube grows down through the style to the ovary.

Use Figure 1 to answer the following questions.

6. Each ovule contains an egg. True or False? (Circle one.)

7. The ovary contains pollen. True or False? (Circle one.)

From Flower to Fruit (p. 281)

8. The ovule becomes a ________________ after fertilization.

Familiar Fruits (p. 282)

9. A fruit, which protects and holds the seeds, develops from the ________________ of a flower.

Seeds Become New Plants (p. 282)

10. The root of the word *dormant* means “to sleep.” Why is this word used to describe many seeds?

   ________________

   ________________

11. Which of the following are minimum requirements needed for seeds to sprout? (Circle all that apply.)

   a. water
   b. sunlight
   c. oxygen
   d. a suitable temperature

Other Methods of Reproduction (p. 283)

12. Can a strawberry plant, like the one shown in Figure 4, reproduce without flowers? Explain.

   ________________

Review (p. 283)

Now that you’ve finished Section 1, review what you learned by answering the Review questions in your ScienceLog.
Section 2: The Ins and Outs of Making Food  (p. 284)

1. Plants use the gas ____________________ to make their own food.

What Happens During Photosynthesis  (p. 284)

2. Chloroplasts are ____________________; chlorophyll is a(n) ____________________. (pigments or organelles, pigment or organelle)

3. Green light is reflected by chlorophyll. True or False? (Circle one.)

4. During photosynthesis, light energy is used to split water into ____________________ and ____________________.

5. Sugar is broken down by plant cells for energy during cellular respiration. True or False? (Circle one.)

Gas Exchange  (p. 286)

6. The openings in the ____________________ and cuticle of a leaf, called stomata, are surrounded by two ____________________, which open and close the gap.

7. Look at Figure 7. Why are stomata usually closed when it is dark?

               __________________________________________________________
               __________________________________________________________

8. Transpiration is the loss of water vapor from leaves.
   True or False? (Circle one.)

9. Which of the following does NOT occur through open stomata?
   a. water entering the leaf
   b. oxygen leaving the leaf
   c. carbon dioxide entering the leaf
   d. transpiration

Review  (p. 286)

Now that you've finished Section 2, review what you learned by answering the Review questions in your ScienceLog.
Section 3: Plant Responses to the Environment  

1. Unlike humans, plants cannot respond to changes in their environment. True or False? (Circle one.)

Plant Tropisms

2. When a tropism is ________, a plant will grow toward the stimulus. (positive or negative)

3. The shoot tips of a plant exhibit positive phototropism. True or False? (Circle one.)

4. Take a look at Figure 9. How does a plant bend?

5. In plants, most ________ tips have positive gravitropism, while most ________ tips have negative gravitropism.

6. Why do the shoots of the plants in Figure 10, on page 288, have such unusual shapes?

Seasonal Responses

7. Plants can detect when the seasons change. True or False? (Circle one.)

8. Look at the Earth Science Connection in the right column of page 289. When the Northern Hemisphere is tilted toward the sun, it is ________ in the Northern Hemisphere. (summer or winter)
Each of the following statements is true of either short-day plants or long-day plants. In the space provided, write $S$ if it is true of short-day plants and $L$ if it is true of long-day plants.

9. _____ Ragweed is an example.

10. _____ They flower in spring or early summer.

11. _____ They flower in late summer or early autumn.

12. _____ They flower when the night length is short.

13. The poinsettias in Figure 11
   a. flower when the nights are long.
   b. are all green when the nights are long.
   c. flower in the early summer.
   d. do not flower in the fall.

14. Even evergreen trees lose their leaves. True or False? (Circle one.)

15. In tropical climates that have wet and dry seasons, deciduous trees
   a. lose their leaves when winter begins.
   b. lose their leaves when the dry season begins.
   c. lose their leaves when the wet season begins.
   d. never lose their leaves.

16. Why do tree leaves change color in the fall?

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

Review (p. 291)
Now that you’ve finished Section 3, review what you learned by answering the Review questions in your ScienceLog.

Section 4: Plant Growth (p. 292)
1. A plant’s __________________________,
   __________________________, and __________________________
   affect its growth.

Heredity (p. 292)
2. A plant’s traits are determined by heredity. True or False? (Circle one.)
Environment (p. 292)
3. The plants in Figure 14 have identical genes. How do they look different, and why?

4. The following are all examples of environmental factors that can affect plant growth EXCEPT
   a. the amount of daylight and darkness.
   b. the water availability.
   c. the plant’s characteristics.
   d. the soil composition.

Plant Hormones (p. 293)
5. Auxin is a growth hormone in plants that
   a. travels to the lighted side of the plant stem.
   b. causes plants to grow toward light.
   c. is produced in fruits.
   d. causes plant cells to shrink.

6. Why do farmers sometimes spray gibberellin on grape stems?

Review (p. 293)
Now that you’ve finished Section 4, review what you learned by answering the Review questions in your ScienceLog.