

## Chapter 2 Review (Alternative Format)

**Goal** • To review the concepts from Chapter 2.

### Reviewing Key Terms

Fill in the blanks using a word from the list below.

|           |       |                 |          |
|-----------|-------|-----------------|----------|
| organs    | shoot | differentiation | gall     |
| epidermis | root  | system          | meristem |

- The \_\_\_\_\_ protects the inner tissues of the leaf.
- Specialized cells form during \_\_\_\_\_, which is a stage of development in an organism's body.
- \_\_\_\_\_ cells can give rise to various specialized cells in an organism's body.
- Roots, stems, and leaves are all plant \_\_\_\_\_.
- A plant \_\_\_\_\_ can be compared to a tumour in an animal.
- An organ \_\_\_\_\_ co-ordinates the functions of organs to do a complex job for an organism.
- Plants have two organ systems: the \_\_\_\_\_ system and the \_\_\_\_\_ system.

### Knowledge and Understanding

Fill in the blanks.

- Multicellular animals can sometimes replace or repair tissues, but they cannot replace or repair \_\_\_\_\_. Plants are different; periodically they can replace or repair new leaves, stems and roots.
- Like multicellular animals, plants are made up of organs, and those organs are divided into \_\_\_\_\_. In plants, the three main organs are made of tissues, including dermal, ground and \_\_\_\_\_ tissue.
- The cells in actively growing areas give off a chemical called \_\_\_\_\_, which is a plant \_\_\_\_\_. If there is an actively growing terminal bud, the chemical will \_\_\_\_\_ lateral growth.
- Match the terms on the left with the most appropriate terms on the right.

|              |
|--------------|
| xylem vessel |
| leaf         |
| fibrous root |
| epidermis    |
| root hair    |

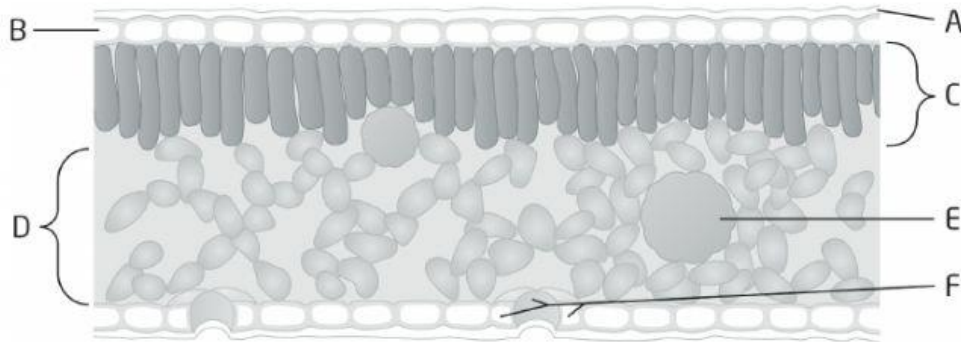
|                |
|----------------|
| cell           |
| part of a cell |
| tissue         |
| organ          |
| system         |



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12. Name the structures in this sketch of a leaf cross section.

- A. \_\_\_\_\_ D. \_\_\_\_\_  
 B. \_\_\_\_\_ E. \_\_\_\_\_  
 C. \_\_\_\_\_ F. \_\_\_\_\_



13. Which of the structures in question 12 is responsible for gas exchange and transpiration?

\_\_\_\_\_

14. a. Fill in the missing components to complete the photosynthesis reaction.

carbon dioxide + \_\_\_\_\_ + light energy  $\longrightarrow$  glucose + \_\_\_\_\_

b. Which plant organelle is responsible for photosynthesis?

\_\_\_\_\_

15. There is something wrong with the following sentence. Re-write it to make it correct.

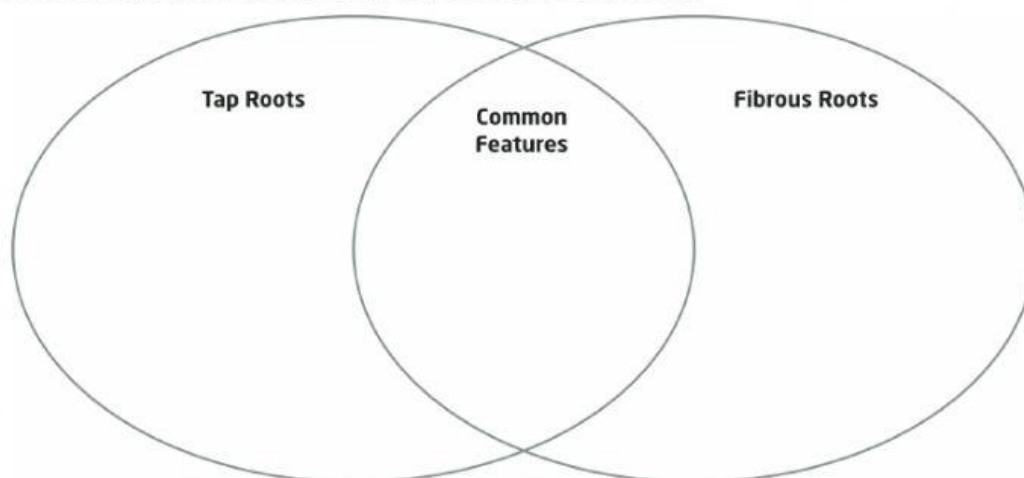
*Root cells transport minerals from the soil to the xylem, which also helps to transport sugar from the soil.*

\_\_\_\_\_  
 \_\_\_\_\_



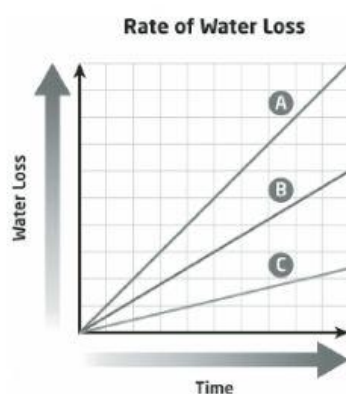
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16. Use the Venn diagram below to compare and contrast tap roots and fibrous roots. Consider their structures and functions, and where you are likely to find them.



## Thinking and Investigation

17. Your friend labelled the following graph incorrectly. What is the correct match of results and environmental conditions?



Friend's graph analysis:

A = control plant

B = plant placed in front of fan

C = plant placed in clear plastic bag

Correct graph analysis:

A = \_\_\_\_\_

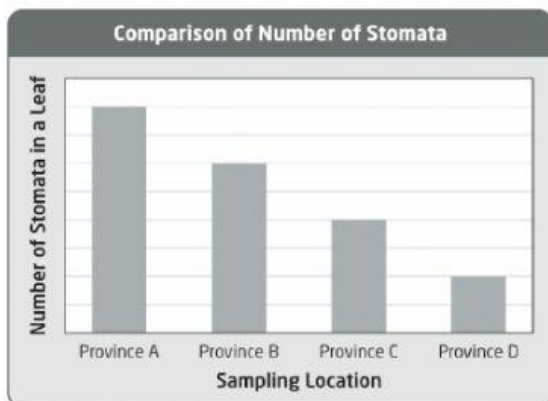
B = \_\_\_\_\_

C = \_\_\_\_\_



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18. This graph shows the number of stomata in the leaves of daisies collected in four different provinces. In which province would you expect the least and the greatest amount of rainfall? Write your answers directly above the correct provinces.



19. Why might a houseplant wilt if it is planted in a pot that is too small?

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20. Using the table, compare and contrast the two specialized places where water passes through a plant.

|                                                                  | Root Hairs | Stomata |
|------------------------------------------------------------------|------------|---------|
| Organs where they are located                                    |            |         |
| Systems that they are associated with                            |            |         |
| Direction that water flows (into the plant/<br>out of the plant) |            |         |
| Other processes associated with structure                        |            |         |



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21. a. Describe the following tissues:

Dermal:

Ground:

Vascular:

b. You place a celery stalk in a beaker filled with water and food colouring. The 'strings' on the outside of the stalk begin to take up the coloured water. What type of tissue do you think the strings are composed of?

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## Communication

22. In this chapter, you learned to explain the links between specialized cells, tissues, organs, and systems in plants. Using your textbook and/or your notes, fill in the following table to help you visualize the organization of a typical flowering plant.

