

CHAPTER REVIEWChapter **9****Soil Formation****I. Vocabulary Review**

Complete the following sentences using these terms: chemical, humus, litter, physical, profile.

- _____ consists of dead leaves, branches, and other plant parts.
- A soil _____ gives a record of the total environment in which the soil was formed.
- _____ weathering involves no chemical change in the rock.
- Weak acids are important in _____ weathering.
- Litter decomposes to form _____.

II. Concept Review

In the blank at the left, write the letter of the choice that best completes the statement.

- _____ 6. Frost wedging is most effective when temperatures _____.
a. are between -15 and 0°C c. are between $+15$ and $+30^{\circ}\text{C}$
b. are between -15 and $+15^{\circ}\text{C}$ d. stay at 0°C
- _____ 7. The most chemical weathering occurs in climates _____.
a. with low average temperatures and low rainfall
b. with high average temperatures and low rainfall
c. with average temperatures above 0°C and moderate to high rainfall
d. that have little seasonal change
- _____ 8. Biological weathering by lichens _____.
a. involves secretion of acids
b. involves expansion and contraction of the lichens when water is absorbed
c. causes rocks to crumble over a long time period
d. all of the above
- _____ 9. At a temperature between 25° and 35°C , you would expect to find _____.
a. the formation of humus from litter c. more frost wedging
b. less weathering of parent material d. soil turning yellow brown to red
- _____ 10. Crop rotation _____.
a. minimizes erosion c. keeps the soil productive
b. minimizes acidity d. decreases runoff

If the underscored word makes the sentence true, write "TRUE" in the space provided. If the underscored word makes the sentence false, write the correct term in the space provided.

- _____ 11. An increase in a rock's surface area increases the rate at which chemical reactions occur.
- _____ 12. Carbonic acid in acid rain weathers stone buildings.

Chapter Review 9 (continued)

- _____ 13. Water that collects in small cracks in rocks contracts when temperatures fall below 0°C, causing rocks to crack even more.
- _____ 14. Hydrogen, potassium, nitrogen, and carbon are some of the nutrients present in air and water that are essential for plant growth.

III. Skills/Process Review

In the Investigate activity, you tested several soil samples. Refer to the table below to answer the questions.

15. Fill in the lettered spaces in the table to show organic matter content and soil acidity for Sample 1 and Sample 2.

	color	texture	organic (high/low)	HCl reaction (+/-)	pH (+/- acid)
1.	dark grey	loam	a.	-	b.
2.	light grey	sandy	c.	+	d.

16. Explain what the HCl test shows. _____
- _____
17. Label the soil profile in Figure 1, using the following terms: *humus, nutrients and clay, weathered parent rock.*

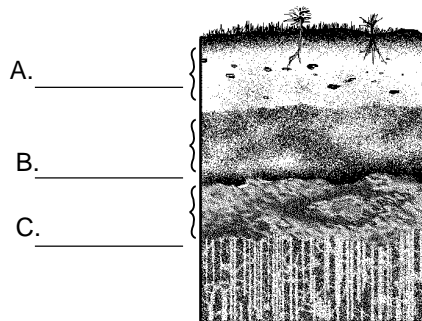


Figure 1

IV. Feature Review

18. **Science and Society: Organic Farming—Is Natural Better?** Why do organic farmers think that artificial fertilizers are inadequate? _____
