

# Weathering and Soil Formation

## Chapter 4 - pages 106-137

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**Read pages 108-115. Answer the following questions complete sentences.**

1. Look at figure 1. How are the **Sierra Mountains** different than the **Appalachian Mountains**?
2. How can you tell that the **Sierra Mountains** are younger than the **Appalachian Mountains**? Explain.
3. \*Explain the difference between **weathering** and **erosion**.
4. Give an example of **weathering**.
5. Give an example of **erosion**.
6. Explain the difference between **mechanical weathering** and **chemical weathering**.
7. Give 5 examples of how **rock can be weathered mechanically**. Do not give one word answer. Give explanations in sentences.
8. Give 5 examples of how **rock can be weathered chemically**. Do not give one word answers....you have to **explain** the processes that occur chemically.
9. Look at figure 4. The gargoyles are weathered. Name two things that contributed to their weathering.
10. \*Describe the 2 things that would cause a rock to **weather quickly**.
11. \*Describe two things that might cause **weathering to occur slowly**.
12. \*Which climate causes rock to weather the fastest?
13. Look at the graph on page 114. Which rock weathered the fastest?
14. Since both rock A and B are both limestone, what do you think caused one rock to weather faster than the other?
15. What is a **permeable rock**?
16. Look at the tombstones in figure 5. Explain why marble would weather much faster than granite.
17. Which tombstone would you prefer (granite, marble, limestone or sandstone)? Why?

**Read pages 118-125.**

18. \*How is soil defined?
19. \*What is bedrock?
20. \*What five things are often found in soil?
21. \*What is humus?
22. \*What is another name for humus?
23. \*What color is humus and why is it this color?
24. \*Why is humus important?
25. \*What does "fertility of soil" mean?
26. \*Describe a soil that is considered to be fertile.
27. \*What kind of soil is considered to be infertile?
28. \*What does soil texture mean?
29. \*What determines the texture of soil?
30. \*Draw a chart (figure 7) that gives the size of the particles of soil. Draw the particles and give their sizes in mm.
31. \*What is loam?
32. \*Draw, color and label figure 6 – the composition of loam. Color each of the 6 pie pieces a different color. Don't forget to label all parts and percentages.
33. \*Is soil mostly made of organic or inorganic matter? Explain your answer.
34. \*Explain why clay and sand are not considered very good for plant growth.
35. \*Explain why loam is considered very good for plant growth.



36. \*What determines how much water soil will hold or drain?
37. \*Explain how soil is formed.
38. \*What is a soil horizon?
39. \*How is topsoil different from subsoil?
40. \*Describe the climate in which soil forms more quickly.
41. \*Describe the climate in which soil forms slowly.
42. \*Would soil form quicker if the bedrock was granite or limestone? Explain.
43. Look at figure 9. How many different soils are there in North America?
44. Describe the soil that North Carolina has.
45. Why do you think Prairie soils are so good for farming?
46. Look at Figure 9's Caption. Name two things that help determine the kind of soil that forms from bedrock.
47. Where do the thickest and most fertile soils form?
48. \*Draw, color and label a soil profile with the following soil horizons: Horizon A (topsoil) / Horizon B - Subsoil / Horizon C - Weathered Rock (Rock Fragments) / Bedrock
49. \*Explain what decomposers are and give two reasons why they are so important.
50. \*What are the two most important decomposing organisms found in soil?
51. Name 3 ways that earthworms help the soil.

**Read pages 126-129.**

52. \*Why is soil considered to be one of the most important **natural resources**?
53. Draw a pie graph that shows the amount of soil on earth that is suitable for farming.
54. On average, about how much soil forms in about one century (100 years)?
55. Why does it take so long for soil to form?
56. \*Some soils are said to be **exhausted**. What does that mean?
57. \*What is the main way that soils become **exhausted**?
58. \*Who was **George Washington Carver** and how did he contribute to Soil Science?
59. \*What is the **Dust Bowl**?
60. \*Name three things that caused the **Dust Bowl**.
61. \*What is **Soil Conservation**?
62. \*Describe what **Contour Plowing** is and how it helps the soil.
63. \*Describe what **Conservation Plowing** is and how it helps the soil.
64. \*Describe what **Crop Rotation** is and how it helps the soil.
65. \*What are some things you can do to be a good **steward** of the soil?

