

Lithosphere Test Review #2

Name: _____

1. Physical weathering changes the _____ of rocks. Chemical weathering changes the _____ of rocks. Which type of weathering increases rock surface area?

2. Match the 7 types of **physical weathering** to their definitions

1) Frost Wedging

2) Abrasion

3) Plant/Animal Activity

4) Gravity/Pressure

5) Wetting/Drying

6) Exfoliation / Joint Sheeting

7) Thermal Stress

A. Scraping of the surface particles during their transport by wind, glacier, waves, gravity, running water or erosion.

B. Heating up and cooling down makes rocks swell and shrink until they break.

C. Freezing and thawing of water in cracks disintegrates rocks.

D. Reduced pressure caused by "unloading" on igneous rock causes it to expand and allows slabs of outer rock to break off in layers.

E. Wetting and drying causes clay minerals to expand and contract, and salts may dissolve and re-precipitate.

F. The activity of organisms, including plants, burrowing animals, and humans, can also cause mechanical weathering.

G. Bedrock is under pressure from overlying rock. When overlying rock layers are removed, the pressure on bedrock is reduced and it expands and cracks.

3. Name the 5 types of **chemical weathering** that match these descriptions.

a. The chemical reaction of oxygen with other substances (rust) = _____

b. Carbonic acids dissolve rocks and can form caves = _____

c. Pollution from factories dissolves in rainwater and eats away rocks and buildings = _____

d. Decaying plant material mixes with water forming acid or lichens use acid to dissolve the rocks they form on = _____

e. Water causes silicates and oxides to undergo chemical decomposition = _____

4. List 3 human activities that cause **acid rain** to form?

a.

b.

c.

5. What is one natural cause of acid rain?

6. The movement of sediment, rocks, and gravel from one location to another is called _____.

7. What are 4 things that can cause erosion?

- a.
- b.
- c.
- d.

8. The process that drops off soil, rocks, and gravel in a new location, such as a river delta or a glacial moraine is called _____.

9. What are the 5 characteristics that define a **mineral**?

- a.
- b.
- c.
- d.
- e.

10. Compare and contrast **extrusive** and **intrusive** igneous rocks.

- How are they alike:
- How are they different:

11. Describe how **sedimentary rocks** form.

12. Describe how **igneous rocks** form.

13. Describe how **metamorphic rocks** form.

14. What type of rock is the Grand Canyon made of? How can you tell?



15. Marble is formed when limestone gets buried and changes under high heat and high pressure. What type of rock is marble?

16. Which rock layer in this picture is the oldest? What type of rock is it? (Hint, it is the only type that fossils can be found in.)



17. How does the sun help drive the rock cycle? List 3 processes from the rock cycle that the sun influences.

- a.
- b.
- c.

18. Why is salt considered a mineral but sugar is not?

19. What are the two main types of mining?

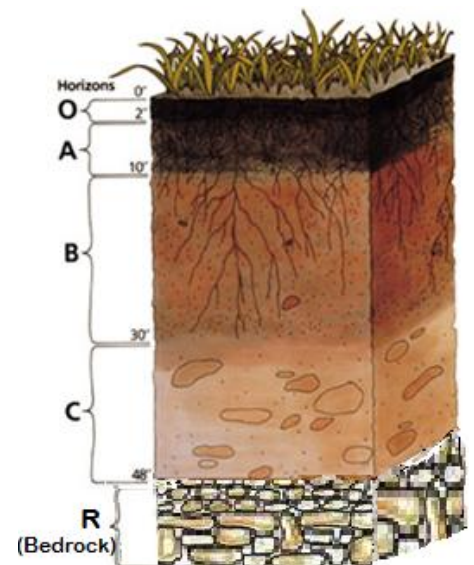
20. Which type of mining is more environmentally damaging? Why?

21. What is reclamation and why is it important?

22. Describe how the movement of tectonic plates is linked directly to the rock cycle. Be sure to use the term subduction in your answer.

23. Describe the characteristics of the parts of the soil profile to the right.

- O:
- A:
- B:
- C:

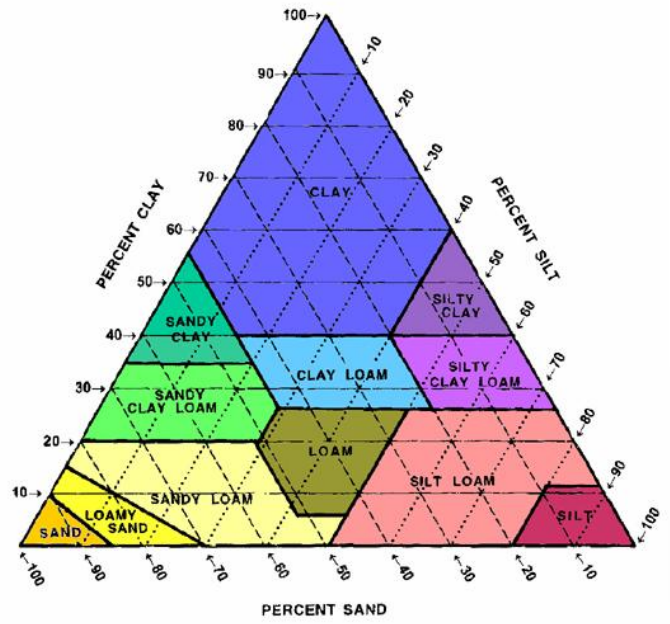


24. How is **soil texture** classified? % _____, % _____, and % _____

25. If a soil has 40% sand particles, 40% silt particles, and 20% clay particles, which soil texture class does it belong to?

26. What is the difference between **residual** and **transported** soil? Which one is there more of in the world, residual or transported soil?

27. Define **humus**. How does it form? What color is a soil that has a lot of humus in it?



28. Rank the 3 soil particles in term of size from smallest to largest.

29. What element is responsible for giving our soil its characteristic red/orange color here in NC?

30. Big pore spaces between soil particles are called _____. Small pore spaces between soil particles are called _____.

31. What is permeability?

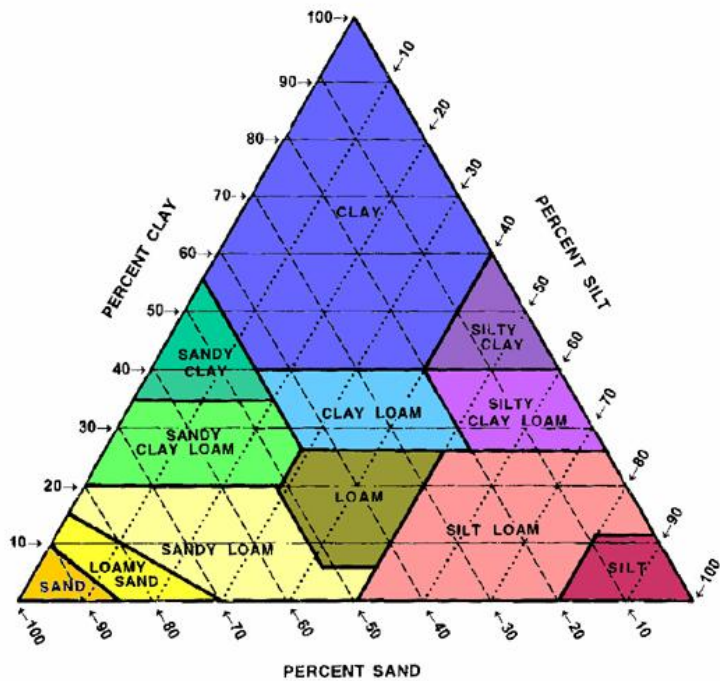
32. The more sand particles in a soil, the _____ its permeability.
The more clay particles in a soil, the _____ its permeability.

33. What is porosity?

34. Sands have more _____ pore spaces, so water and nutrients move through them _____.
Clays have more _____ pore spaces, so water and nutrients move through them _____.

35. Which soils are the best for most agriculture (growing food)? Why?

Soil Texture in the Real World



Soil name	Texture class	Depth (inches)	Shrink-swell potential
Sarpy	sandy loam	0-7 7-60	low low to moderate
Kennebec	silt loam	0-38 38-60	moderate low to moderate
Colo	silty clay loam	0-31 31-60	high high
Blend	silty clay	0-17 17-29 29-60	high moderate to high high
Nevin	clay loam	0-28 28-48 48-60	moderate to high moderate moderate
Kenmoor	loamy sand	0-24 24-60	low high

44. A local government voted against the large-scale development of buildings, bridges, and roads in an area. What could have been the motive behind their decision?

45. Which soil from the above chart would you choose to build roads, bridges, and roads on? Why?

46. What are the 3 soil nutrients that are essential for plant growth?

47. List and describe 3 types of human activities that are impacting the lithosphere negatively **AND** what measures can be taken to improve these problems.

Human Activity	Environmental Problems Caused	Possible Solutions

48. The Dust Bowl in the 1930s was a major example of _____. It was caused by 2 major contributors:

- a.
- b.

49. The NRCS (Natural Resources Conservation Service) was founded after the Dust Bowl, and it helps farmers use methods that protect their soil. What are 3 methods farmers could use to take better care of their topsoil?

- a.
- b.
- c.

50. What is beach rejuvenation? What is your opinion of this practice? Why?

51. What are 2 devices that are used to stabilize the coastal shoreline from beach erosion?

52. What is fracking? Write a list of 3 pros and 3 cons of this practice.

53. Fill in the following table:

Energy Resources:	Extraction Methods:	Description of Energy Production:	Environmental Consequences:
Wood			
Peat			
Coal			
Oil			
Natural Gas			
Uranium			
Plutonium			