

Define and explain the following terms:

1. Archbishop Ussher:

2. James Hutton:

3. Uniformitarianism:

4. Superposition:

5. Unconformity:

6. Original Horizontality:

7. Cross-cutting Relationships:

8. Principle of Faunal Succession:

9. Madame Curie:

10. Two radiometric dating techniques:

Earth Revealed #11: Evolution Through Time

Name

*Answer the following questions:*

1- Fossils form in many ways. Describe how each of the following form:

- a) Molds
- b) Casts
- c) Trace Fossils (Evidence of Critters)

2- The Fossil record is best preserved where? Why?

3- Name 2 reasons why terrestrial fossils are relatively rare.

4- What are stromatolites? Why are they important? What is another name for them?

5- Why could critters finally come out of the ocean onto the land?

6- Why did oxygen increase and carbon dioxide decrease?

7- When did Pangea form? The formation of Pangea coincided with what major event in Earth History?

8- Name 2 pieces of evidence for warm blooded dinosaurs.

9- Name 2 theories on what killed the dinosaurs?

10- What kind of critters are in the La Brea Tar Pits?

11- What the heck is Punctuated Equilibrium?

## EARTH REVEALED #12: MINERALS

Name \_\_\_\_\_

*Answer the following questions:*

1. Different geologists use minerals in different ways. Explain how the following geologists use minerals in their field of study.
  - a. Geochronologist
  - b. Sedimentologist/Stratigrapher
  - c. Igneous and Metamorphic Petrologist
  - d. Structural Geologist
2. How many varieties of minerals exist? Of these minerals, how many common minerals exist?
3. Name the common minerals. What are these minerals known as?
4. Name three different physical properties and how they could be used to identify a mineral. Please include a mineral in the discussion of the property.
5. Explain how a mineral is prepared for an x-ray diffraction study.
6. Explain the physical and chemical differences between Diamonds and Graphite.
7. What kind of conditions exist for the formation of gold, silver and copper (in other words, how do they form)?
8. What the heck is a hydrothermal ore deposit?
9. What is the most common group of minerals?
10. What properties make silicon special?

*Answer the following questions.*

1. Other than Earth where else can you find volcanoes?
2. What is pillow lava?
3. What is the composition of volcanic gas?
4. Composition cone volcanoes often form a “foam” similar to the foam you see in a soda that has been shaken. This “foam” becomes what type of igneous rock?
5. What are cinders?
6. The cinder cone volcano that scientists (Tilling and Hazlett) visited in southeastern California is about how old?
7. How and when do volcanic domes form?
8. What are ground deformation studies?
9. Where is Mount Katmai? What are scientists doing there?
10. What is a fumarole?

EARTH REVEALED # 14: INTRUSIVE IGNEOUS ROCKS

Name\_\_\_\_\_

*Answer the following questions:*

1) WHAT IS AN INTRUSION?

2) WHAT DOES THE TERM MAFIC MEAN?

3) WHAT DOES THE TERM FELSIC MEAN?

4) COMPARE THE COOLING HISTORIES OF GRANITE AND RHYOLITE.

5) WHAT AFFECT DOES WATER HAVE ON THE TEMPERATURE OF MAGMA?

6) ACCORDING TO BOWEN'S REACTION SERIES, WHICH MINERALS CRYSTALLIZE FIRST IN MAGMAS?

7) WHAT IS THE DOMINANT ROCK OF OCEAN RIDGES, OCEAN ISLANDS, ETC?

8) WHAT KIND OF IGNEOUS ROCKS DO YOU EXPECT TO FIND AT SUBDUCTION ZONE?

9) WHAT IS ANORTHOSITE? IT IS NOT VERY COMMON ON EARTH, BUT WHERE IS IT COMMONLY FOUND? WHAT IS THE PRIMARY MINERAL FOUND IN ANORTHOSITE?

10) WHAT KIND OF ROCKS ARE FOUND IN THE FOLLOWING PLACES?

A. CONTINENTAL CRUST

B. OCEANIC CRUST

C. MANTLE

*Answer the following questions:*

1. What is mechanical weathering?
  2. What is ice wedging?
  3. What is the difference between mechanical weathering and chemical weathering?
  4. What is the main agent, or cause, of chemical weathering?
  5. Would a wet climate cause more or less chemical weathering?
  6. Would a cold temperature cause more or less chemical weathering?
  7. What is humus?
  8. What is the term for the layers of soil?
  9. Why are most minerals leached away in the rain forest?
  10. When did the Dust Bowl of the American midwest occur?
  11. What happened to the soil during the Dust Bowl?
  12. What is a windbreak?
- Bonus: What type of soil does bedrock containing feldspar produce?

*Answer the following questions:*

1. Which is NOT used to categorize types of mass wasting?

- |                            |                       |
|----------------------------|-----------------------|
| a. composition of the rock | c. manner of movement |
| b. composition of the air  | d. speed of movement  |

2. Creep is caused by

- |                  |                      |
|------------------|----------------------|
| a. wind and rain | c. gravity and water |
| b. fire and ice  | d. gin and tonic     |

3. True or False. Creep is so slow that it never causes any damage.

4. True or False. A slump area becoming a landslide area is an example of the transitional nature of mass wasting.

5. True or False. Because of their high density and viscosity, some mud and debris flows can move large boulders and even cars.

6. True or False. Mass wasting is never a concern for home owners or land developers.

7. Avalanches can have speeds of over

- |                 |                   |
|-----------------|-------------------|
| a. 100 km/hour  | c. 10000 km/hour  |
| b. 1000 km/hour | d. 100000 km/hour |

8-13. Put these types of mass wasting in order by speed, from slowest to fastest.

Avalanche, Creep, Landslide, Mud and Debris Flows, Rock slide, Slump

SLOWEST

8. \_\_\_\_\_ 11. \_\_\_\_\_

9. \_\_\_\_\_ 12. \_\_\_\_\_

10. \_\_\_\_\_ 13. \_\_\_\_\_

Bonus:

What is the name for the rock-filled cages used to prevent wave erosion?

Earth Revealed #17: Sedimentary Rocks

Name\_\_\_\_\_

*Answer the following questions:*

- 1) What four agents deposit and transport sediments?
  
  
  
  
  
  
  
  
  
  
- 2) Give the range of sizes of particles for clastic sediments.
  
  
  
  
  
  
  
  
  
  
- 3) Define: Lithification
  
  
  
  
  
  
  
  
  
  
- 4) What are evaporites?
  
  
  
  
  
  
  
  
  
  
- 5) How do evaporites form?
  
  
  
  
  
  
  
  
  
  
- 6) How and where does limestone form?
  
  
  
  
  
  
  
  
  
  
- 7) How and where is chert formed?
  
  
  
  
  
  
  
  
  
  
- 8) Name four sedimentary structures.
  
  
  
  
  
  
  
  
  
  
- 9) How do crossbeds form?
  
  
  
  
  
  
  
  
  
  
- 10) Make a pretty diagram showing crossbeds and the direction of current flow.
  
  
  
  
  
  
  
  
  
  
- 11) Name several characteristics of a Lake deposit.



*Please answer the following:*

1. Define: Directed Pressure

2. Define: Snowball Garnets

3. Define: Foliation

4. Define: Migmatite

5. Describe contact metamorphism? What temperature has to do with it?

6. Describe Regional Metamorphism and where it occurs?

7. What is Metamorphic Facies?

8. Put these rocks in order: Gneiss, Slate, Phyllite, Schist

9. What is special about Blueschist Metamorphism?

10. Where do Blueschist rocks occur?