

Structure of the Interior of Earth

1. The Earth's interior consists of rock and metal. It is made up of four main layers. Describe each layer in terms of temperature, composition, and thickness.

Layer of the Earth	Temperature	Composition	Thickness
Inner Core			
Outer Core			
Mantle			
Crust			

Review Assignment #2

2. The crust and the mantle can be divided into the lithosphere and asthenosphere. Describe each of these layers.

Layer	Description	Crust, Mantle, or Both	Physical State
Lithosphere			
Asthenosphere			

Minerals

1. What is a mineral?
2. Use the table below to describe the properties of minerals.

Property	Description	Examples
Color		
Luster		
Streak		
Crystal Structure		

Hardness		
Cleavage or Fracture		
Acidity		
Magnetism		

Scientists classify minerals based on the elements that they are made of. Describe these classes listed below.

3. Minerals can also be classified according to color. Which minerals are silicates that are low in iron and magnesium and light in color?
4. Give an example of the type of mineral described in number 4 and write the chemical formula.
5. Which minerals are silicates that contain higher levels of iron and/or magnesium and are dark-colored?
6. Give an example of the type of mineral described in number 6 and write the chemical formula.

7. According to the table, which mineral is capable of scratching garnet?

Mineral	Color	Hardness
Gold	Metallic gold	2.5- 3
Apatite	Blue, green	5
Pyrite	Metallic pale brass, gold	6-6.5
Garnet	Red, deep red, brown	7.5- 8
Corundum	Red, deep red	9

Rocks

1. What is a rock?
2. The chart below shows the three types of rocks. Complete the chart by describing how each type of rock forms.

Rock	How it Forms
Igneous	
Metamorphic	
Sedimentary	

3. Draw a diagram of the rock cycle below. Use the terms in #3 in your diagram to show the processes that form rocks.

4. How does the cooling rate of an igneous rock affect its' texture? Give an example of a rock with slow cooling rate and fast cooling rate.

5. Describe the texture of a foliated and non-foliated metamorphic rock.

Review Assignment #3

Weathering

Class	Description	Example and Formula

Silicates		
Carbonates		
Oxides		
Sulfides		
Sulfates		
Halides		
Native Elements		

1. What is weathering?
2. Describe the two types of weathering.

Weathering Type	Description	Causes
Physical Weathering		
Chemical Weathering		

3. Which is an example of chemical weathering?
 - a. Ice wedging
 - b. Oxidation
 - c. Plant growth

4. What is metamorphism?
5. What are two types of metamorphism? Describe each.
6. What type of metamorphism is described in this example?

Marble is created from limestone that has been subjected to heat from an igneous intrusion.

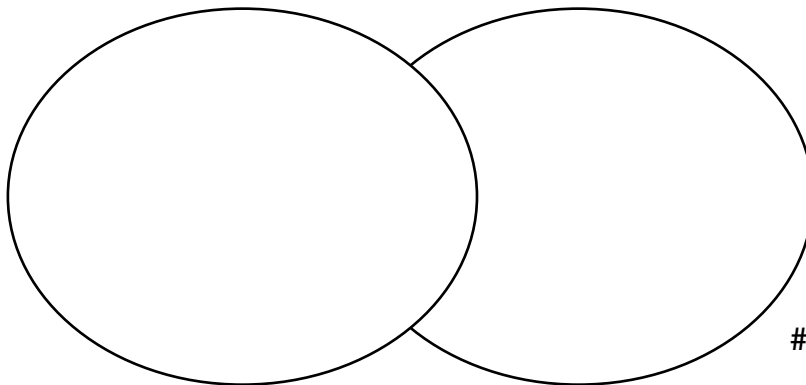
7. What are factors that increase the rate of weathering?
8. Sedimentary rocks form from sediment. Explain how sediments are deposited along the bottom of an ocean floor according to size.

The Earth's Crust

1. What are the two types of Earth's crust?
2. Complete the following Venn diagram to compare these two types of crust. Be sure to describe the elements that make up the crust, the thickness, location, age, and density.

Continental Crust

Oceanic Crust



**Review
Assignment**

#4

The Earth's History

1. What is a fossil?
2. What type of rock are fossils typically found in?
3. What is the name of the tool scientists use to describe the age of the Earth and all of its' life forms?
4. The tool described in number 3 and the fossil record show changes in organisms over time. The mechanism for this change is natural selection. Describe this process.

The Age of Rocks

1. What are the two methods for identifying the age of rocks? Describe each.
2. There are several laws listed below that are used in identifying the age of rocks. Describe each law.
 - a. Law of superposition –
 - b. Law of Horizontality –
 - c. Law of Cross-Cutting Relationships –
 - d. Law of Baked Contact (contact metamorphism) –
 - e. Uniformitarianism –

3. What is an unconformity? Name and describe 3 types of unconformities.

4. Compare the age of continental rocks to those along the mid-ocean ridges.
Refer to the picture below to answer questions 5-8.

5. Which of the following was deposited first?

- a. lower sandstone
- b. limestone
- c. shale
- d. sandstone

6. What principle tells us that the dike is younger than the granite?

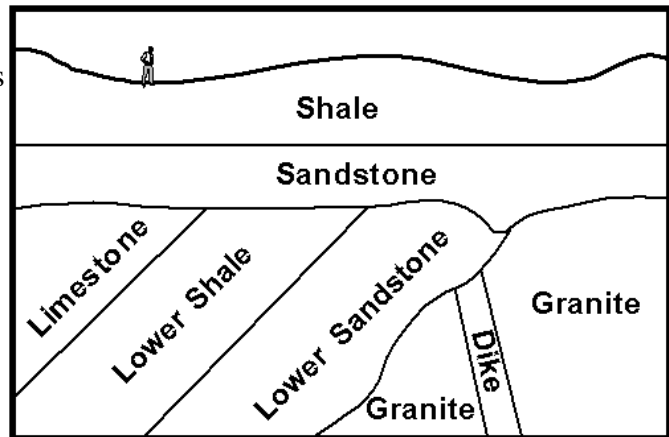
- a. superposition
- b. absolute dating
- c. cross-cutting relationships
- d. radioactive decay

7. Which occurred first?

- a. limestone was deposited
- b. limestone was tilted
- c. limestone was eroded
- d. sandstone was deposited

8. The dike is a kind of

- a. cross-cutting relation
- b. bridge
- c. intrusion
- d. granite

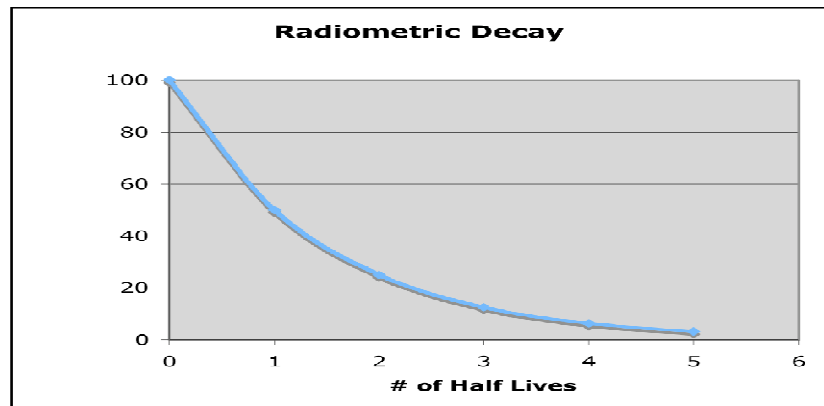


Review Assignment #5

9. Describe the term half-life.

Refer to the image below to answer questions 10-12.

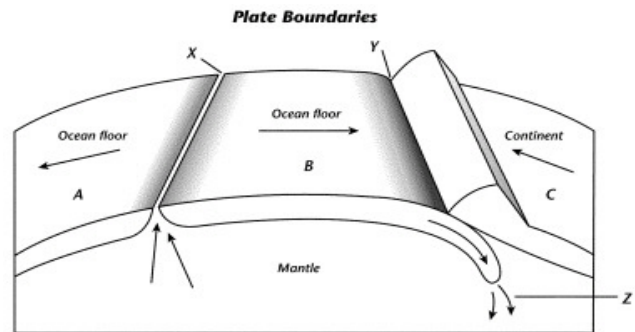
10. At what half life is the rock newly formed?
- 0
 - 1
 - 2
 - 6
11. What percent of the isotopes contain parent rock at point B?
- 100
 - 75
 - 50
 - 25
12. If each half-life on this graph represents 3 million years, how old is a rock that has experienced 3 half-lives?
- 3 million years old
 - 6 million years old
 - 9 million years old
 - 12 million years old



Continental Drift / Plate Tectonics

1. What is continental drift?
2. Which of the following supported the theory of continental drift?
 - a. Matching fossil plant remains on two different continents
 - b. Matching animal remains on two different continents
 - c. Identical sedimentary rocks of the same age at widely separated locations
 - d. All of the above
3. There is also evidence that the continents are moving apart from one another due to magma rising out of the mid-ocean ridges. What do scientists call this form of evidence?
4. Describe the theory of plate tectonics.

5. What are lithospheric plates?
6. Describe the process of subduction of an oceanic plate beneath a continental plate.
7. What are the plate boundaries that form between two lithospheric plates?
8. Use the diagram below to answer questions 8 and 9.



9. Which type of plate boundary occurs at X?
10. What feature occurs at Y and how does it form?

Volcanoes and Earthquakes

Directions: Fill in the blanks below and then draw pictures in the boxes provided.

Volcanoes usually form at _____ plate boundaries. Oceanic plates are forced under continental plates at a _____ zone. There are three major kinds of volcanoes, _____, _____, and _____.

Volcanoes erupt because magma is _____ dense than the solid rocks surrounding it in the mantle of the earth. As this magma nears the surface, the gases expand and boil out of the rock, and this force of explosion propels lava from the vent.



Earthquakes usually occur along cracks in the surface called faults. There are three kinds of faults, _____, _____, and _____. The exact place where the rocks break is called the _____. The point directly above this on the Earth's surface is called the _____. Earthquakes cause three kinds of seismic waves, _____, _____, and surface waves. We measure these waves using a machine called a _____. The first waves detected by this machine are the _____ waves. The last waves detected are the slow _____ waves although they cause the most destruction. _____ waves do not travel through liquids.

