

# Earth Essential Questions/Test Review

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class Hr: \_\_\_\_\_ /40

**Directions:** The following essential question/test review gives you the opportunity to reflect on what you have learned or need to learn. It is made of only key points and questions. Each practice question will ask you to recall something you **should know** or ask you to **demonstrate how to do something**.

**Question 1.** You are given an unknown object. You find its **mass to be 28g**. You find its **volume to be 10 mL**. Using the chart below, determine which layer of the Earth the object would belong to based on its density.

The object would belong to the \_\_\_\_\_ layer.

Sample Earth density chart:

Layer	Approximate Density
Water	1.0 g/mL
Crust	2.7 – 3.0 g/mL
Mantle	3.3 – 5.7 g/mL
Outer Core	9.0-12.0 g/mL
Inner Core	12.7 – 13.0 g/mL

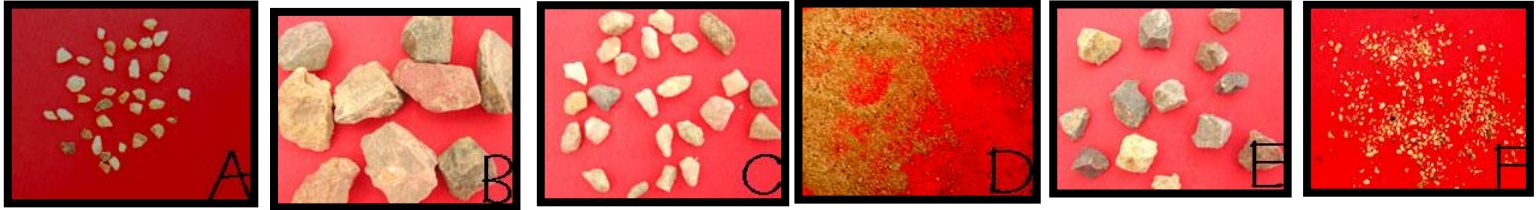
**Question 2.** Calculate the **density** of earth materials on the chart below.

There is nothing "tricky" about this data. In fact, if you wish, you may use a calculator to assist you!



Substance	Mass in grams	Volume in cubic centimeters	Density in grams/cubic centimeters
1. Gold	193.2g	10 cm <sup>3</sup>	
2. Oxygen	1.33g	100 cm <sup>3</sup>	
3. Water	10.0g	10 cm <sup>3</sup>	
4. Helium	1.663g	10,000 cm <sup>3</sup>	
5. Mercury	67.75g	5 cm <sup>3</sup>	
6. Copper	224g	25 cm <sup>3</sup>	

**Question 3.** Below are pictures of six different-sized particles. Imagine that you can put them in a large graduated cylinder filled with water and then shake it vigorously. The particles are labeled A, B, C, D, E and F. Look closely at each and determine the order of how they would settle out ... from bottom to top. **Simply number each with 1 being the bottom and 6 being the top.**



**Question 4.** Describe how evidence of sorting of Earth materials can be observed in a streambed, road cut, and beach. Please be sure to mention how density and particle size are involved.

**1. Stream Bed**



**2. Road Cut**

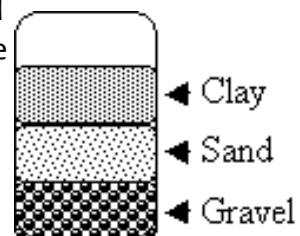


**3. Beach**



**Question 5.**

A group of students designed an experiment to **test the effect of density** on the sorting of Earth materials. They added particles of various sizes: sand, gravel and clay. They were mixed in a jar and water was added. They shook the mixture and then let it settle. The jar looked like this when they were done:



Their conclusion was "Gravel is the most dense because it sank to the bottom first. Sand is less dense than gravel and clay is least dense."

What other variable should the experiment have controlled more in the experiment?

- A. color of particles
- B. size of particles
- C. density of particles
- D. amount of particles

**Question 6.** Which answer shows the following items in order from the highest density to the lowest density?

- a. water, atmosphere, core, crust
- b. atmosphere, crust, core, water
- c. crust, water, atmosphere, core
- d. core, crust, water, atmosphere

**Question 7.** Why is water located above the crust but below the air?

- a. The density of water is higher than air and higher than the crust
- b. The density of water is lower than air and higher than the crust.
- c. The density of water is higher than air and lower than the crust.
- d. The density of water is lower than air and lower than the crust.

**Question 8:** Now that you have learned about the four basic layers of the Earth let's put your knowledge to the test. The table below has each layer labeled. You need to fill in the missing information for each.

Earth's Layers	Temperature Top to Bottom in Celsius	Depth Range Top to Bottom	What is the Layer Made of?	What State of Matter?	Average Density of Layer
Crust					
Mantle					
Outer Core					
Inner Core					
Atmosphere	Not Applicable	Not Applicable	Gasses:		

**Question 9:** Given the model of the Earth shown below, write a short paragraph explaining whether or not this is a good model of the Earth or a poor model of the Earth. List at least 2 reasons that will help to defend your answer.

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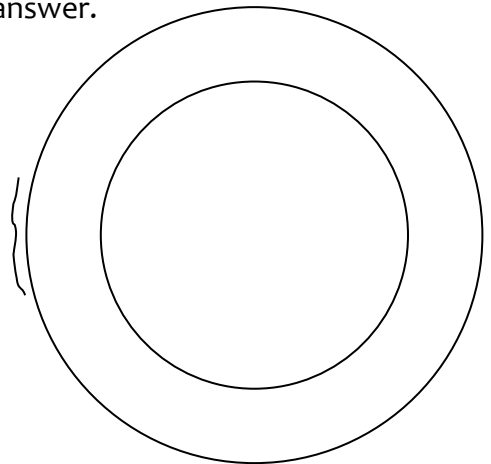
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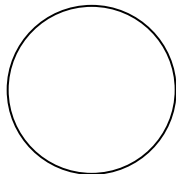


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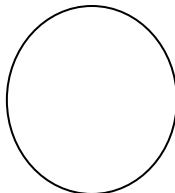


**Question 10:** Circle which of the two models **below** shows the Earth's outside shape more correctly? Explain your answer.

**MODEL A**



**MODEL B**

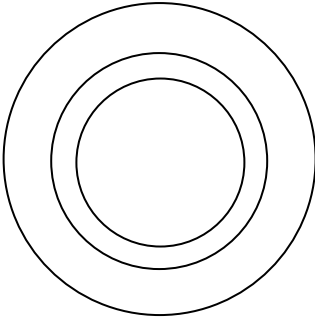


**Question 11:** In the past, many people thought that Earth was hollow. Why is this model of Earth accepted now?

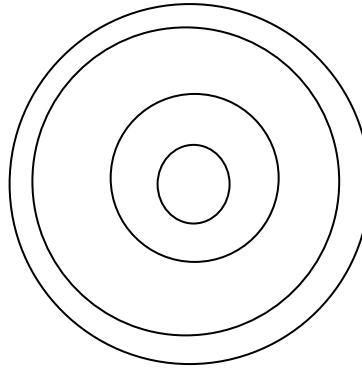
- A. Today scientists have collected data that support a layered model of Earth.
- B. The current layered model of Earth's structure has now been proven.
- C. Models of Earth's structure only last a certain amount of time and then they are replaced.
- D. Scientists have now taken samples of Earth's core and know the old model was wrong.

**Question 12:** Circle which model **below** is most correct in describing the main layers of the Earth. Explain your answer.

**MODEL A**



**MODEL B**



**Question 13:** What was your favorite part of this unit?