

**Which statement BEST describes the relationship between Earth's mantle and core?**

- A. The mantle lies just below the core.**
- B. The mantle and core are made up of hard, solid rock.**
- C. The core is denser than the mantle.**
- D. Material in the core and mantle combines to form tectonic plates.**

Which of these layers is home to life on Earth?

**A. asthenosphere**

**B. outer core**

**C. mantle**

**D. crust**

Quartz and feldspar are two common minerals.  
When they are found mixed together in nature they  
form

**A. rocks.**

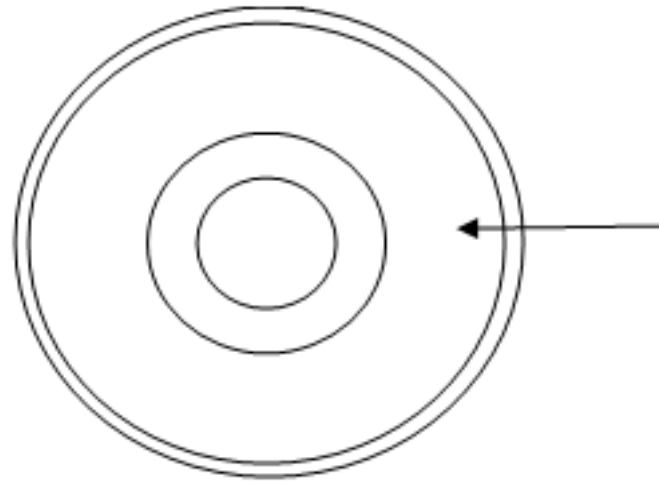
**B. magma.**

**C. soil deposits.**

**D. organic material.**

The arrow in the diagram below points to the layer that takes up the most space in Earth's interior. Which layer is the arrow pointing to?

- A. crust**
- B. inner core**
- C. mantle**
- D. outer core**



**Earth's Interior**

Which of the following is true regarding the Earth's mantle?

- A. It is made of mostly liquid metal that allows it to flow.**
- B. Its material moves due to convection currents.**
- C. It is the densest of all of Earth's layers.**
- D. It is the hottest of all of Earth's layers.**

Which of the following BEST represents the composition of the outer core?

- A. flowing rock
- B. solid iron
- C. magma
- D. liquid metal

Marcie wanted to compare the lengths and masses of some different objects. She made a table to record her results.

Object	Properties of Objects	
	Length(?)	Mass(?)

Marcie's measurements should be recorded in which units?

- A. centimeters and grams
- B. centimeters and milliliters
- C. degrees Celsius and grams
- D. milliliters and degrees Celsius

During science class, a teacher explains that the samples the students are studying are made of two or more minerals. What are the students studying?

**A. gases**

**B. rocks**

**C. elements**

**D. molecules**



Students are comparing different rocks. What do all rocks have in common?

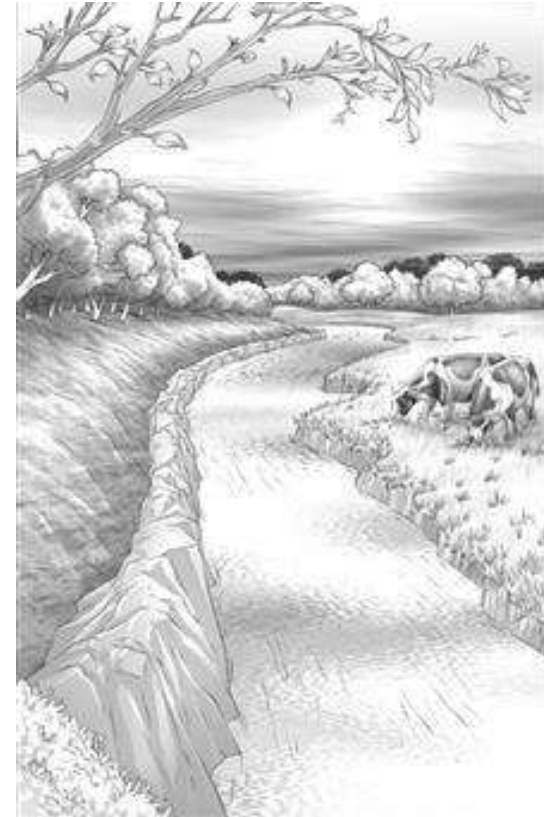
- A. Rocks are made of one or more minerals.**
- B. Rocks are made of two or more elements.**
- C. Rocks are made of magma and sediments.**
- D. Rocks are made of sand changed by pressure.**

# What must happen in order for scientific data to be verified through repetition?

- A. Accurate records must be kept.**
- B. Modern technology must be used.**
- C. Investigations must be conducted by trained scientists.**
- D. Observations must be made by more than one scientist.**

The left side of the river has been reinforced by a rock wall to prevent erosion. Which would BEST help in preventing the right side of the river from being eroded?

- A. loose soil**
- B. thick grass**
- C. heavy rainfall**
- D. increased grazing by animals**



Powerful winds often move sediments to lower areas where they eventually come to rest. The movement of sediment by the wind is an example of which step in the rock cycle?

- A. weathering**
- B. transportation**
- C. deposition**
- D. lithification**

In order for boulders to become sediments,  
the boulders must first be

**A. heated and melted.**

**B. weathered and eroded.**

**C. recrystallized.**

**D. buried.**

When forest trees are cleared from the land, and trees are not replanted, which of the following will MOST likely occur?

- A. soil erosion**
- B. sedimentation**
- C. lightning fires**
- D. increase in habitat**

What is MOST likely the first step for students to do for a recycling project?

- A. burn the materials in a bonfire**
- B. take the materials to a landfill**
- C. dump the materials in a trash bin**
- D. sort the materials by plastics, papers, and cans**

Compaction occurs when deeply buried rock pieces are forced together by pressure. Compaction is involved in which of the following geological processes?

- A. igneous rock uplift**
- B. sedimentary rock formation**
- C. igneous rock erosion**
- D. metamorphic rock weathering**

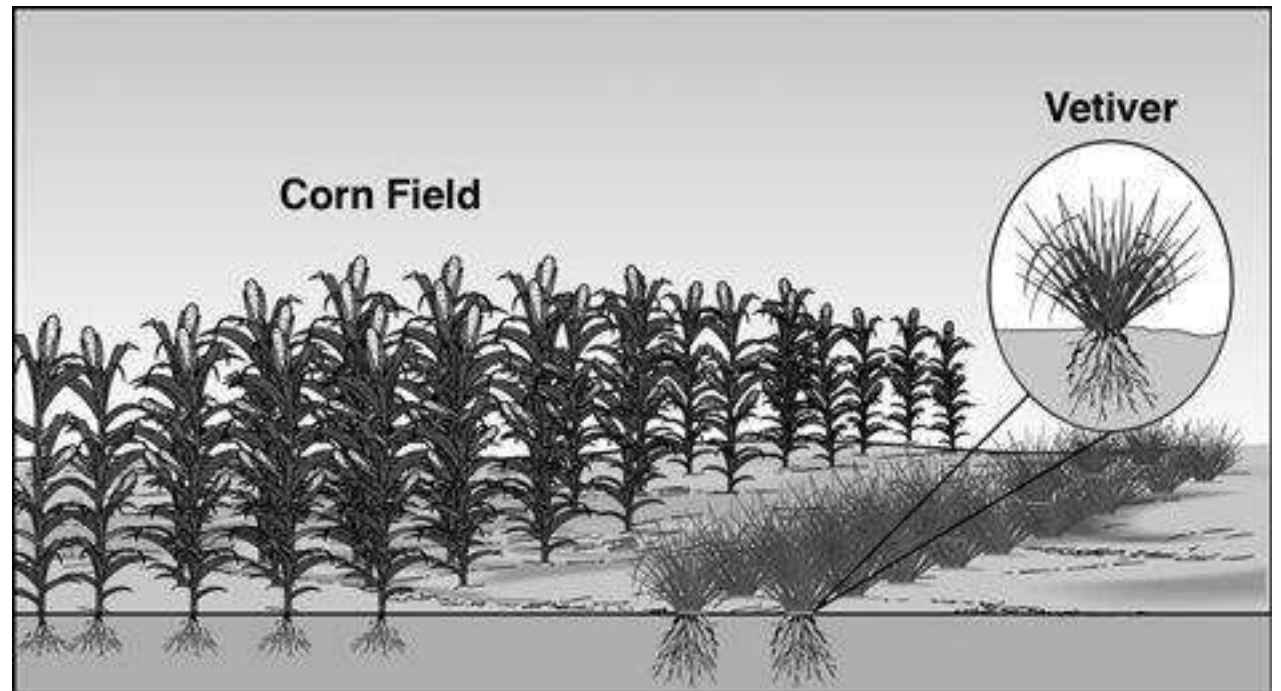


A scientist was examining a large boulder that was covered with lichens (a combination of fungi and algae). He chipped a piece of the rock and placed it under a microscope. He observed that the surface of the rock was breaking down underneath the lichen. Which was the scientist MOST likely observing?

- A. the interaction between abiotic factors**
- B. the effects of chemical weathering**
- C. the process of deposition**
- D. the effects of abrasion**

Vetiver grass is planted by farmers along the borders of corn fields. Which process does the vetiver grass MOST likely help farmers reduce?

- A. chemical weathering**
- B. insect infestation**
- C. freezing of crops**
- D. water erosion**



What process makes it possible for the nutrients from organic material to be added to soil?

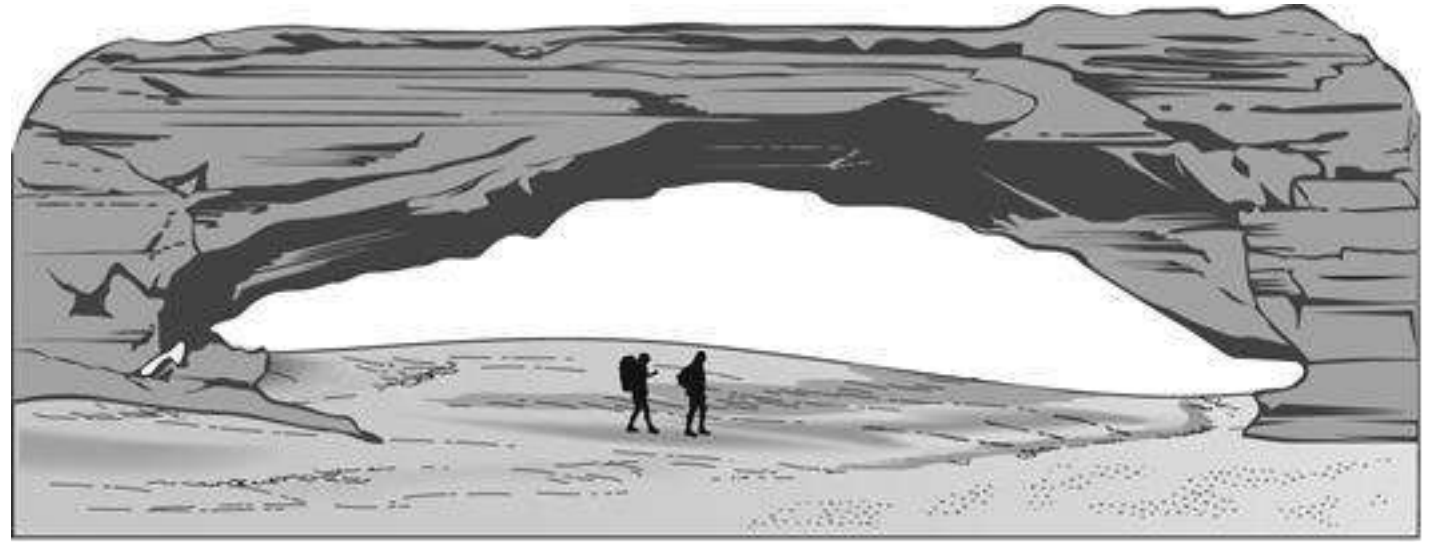
**A. weathering**

**B. erosion**

**C. decomposition**

**D. succession**

There are many natural rock formations such as the one shown. Which two processes MOST likely removed the center portion of the rock and transported it to another location?



- A. earthquakes and wind**
- B. tectonic activity and magma**
- C. chemical weathering and glaciers**
- D. mechanical weathering and water**

Tree roots can grow into rock and break it apart. Water can freeze in the cracks of rock, causing it to break apart. How are these two processes alike?

- A. Both are forces.**
- B. Both affect weather.**
- C. Both form new kinds of rock.**
- D. Both are forms of weathering.**

Students notice after a rain that a construction site showed more pebbles and small rocks exposed on a sloped surface than on a level area which was covered with sand and mud. The BEST explanation for this is that the

**A. rocks had not weathered into sand and mud on the level area.**

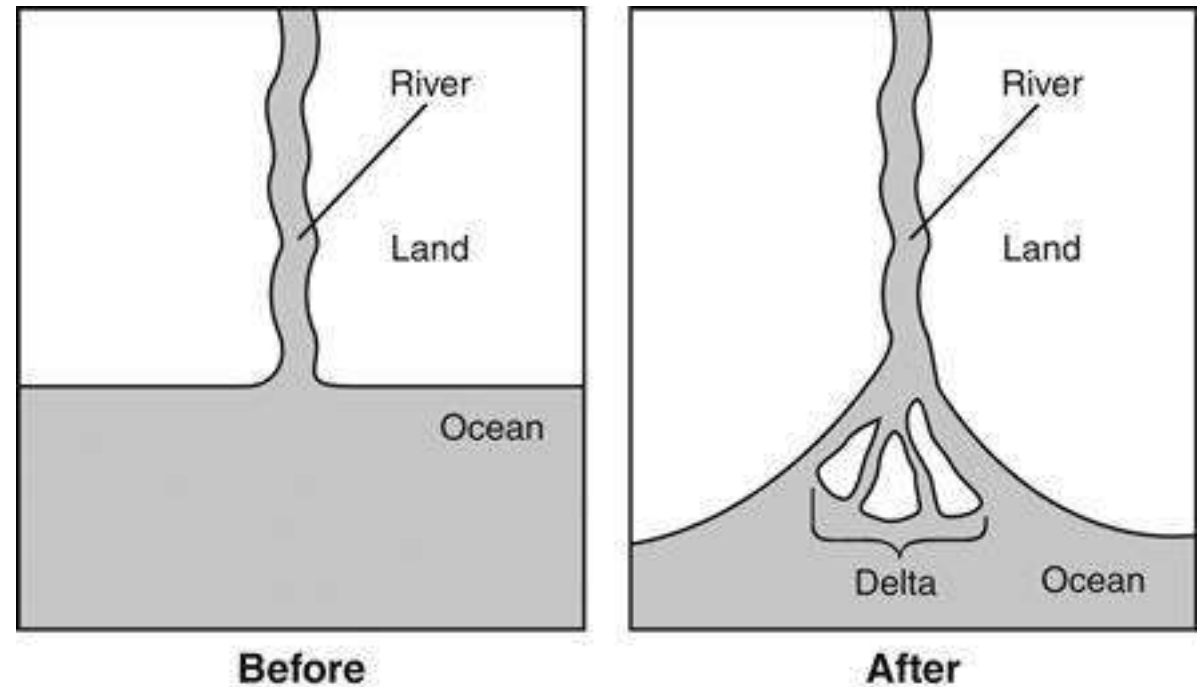
**B. rain moved sand and mud away from the rocks on the sloped surface.**

**C. sand and mud are generally found in low places on level areas.**

**D. rocks prevent soil from eroding from the slope.**

What process formed this delta?

- A. erosion and deposition**
- B. condensation and precipitation**
- C. shifting tectonic plates**
- D. rock layer deformation**



Dawn suspects she has allergies to animals. She decides to test her allergic reactions to a wide range of animals. The chart below illustrates the results. Looking at the chart, what conclusion would BEST describe her results?

- A. Dawn is allergic to all pets that have hair.**
- B. Dawn is allergic to cats and dogs.**
- C. Dawn is only allergic to indoor pets.**
- D. More testing is needed to be able to come to a conclusion.**

<u>Animal</u>	<u>Allergic Reaction</u>
Indoor cat	Strong reaction
Outdoor cat	Strong reaction
Indoor dog	Mild reaction
Outdoor dog	Strong reaction
Lizard	No reaction
Guinea Pig	No reaction
Hamster	No reaction



A scientist finds a metamorphic rock formation next to a magma chamber and determines that it was originally a sedimentary rock formation. He concludes that the temperature of the magma chamber caused the rock formation to become metamorphic. Which is another reliable explanation of how the rock formation was changed?

- A. Weight of heavy machinery moving over the rocks**
- B. pressure on the rock formation inside Earth**
- C. a sandstorm that caused the rocks to be eroded**
- D. a quick burial of the rocks by tons of volcanic ash**

A class learns about weather. The students in the class measure the outside air temperature at the same time each day. Which way of measuring the temperature would provide the MOST accurate data?

- A. taking the measurement in the shade**
- B. taking measurements with one thermometer**
- C. taking a measurement using a different tool each day**
- D. recording the measurements from three thermometers**

Fisheries harvest a sustainable yield of fish, which is the number of fish that can be harvested from a stock of fish so that the population remains healthy enough to continue reproducing. Fish harvested from a fishery for a restaurant would be classified as a \_\_\_\_\_ resource.

- A. nonrenewable**
- B. renewable**
- C. scientific**
- D. depleting**

Geologists are conducting a study on many layers of different types of rock in the Grand Canyon. These geologists will likely find ancient fossils that reveal the history of life near the Grand Canyon in

- A. igneous rock layers.**
- B. layers of sedimentary rock.**
- C. layers of volcanic rock.**
- D. metamorphic rock layers.**

Coal is considered to be what type of resource?

**A. synthetic**

**B. nonrenewable**

**C. gas**

**D. renewable**

Students studied the effects of fertilizers on tomato plant growth. Each of their plants started at the same height. The table shows some differences between the plants after a month.

**Tomato Plant Study**

	<b>No Fertilizer</b>	<b>Fertilizer 1</b>	<b>Fertilizer 2</b>	<b>Fertilizer 3</b>
<b>Plant Height</b>	68cm	91cm	70 cm	85 cm

The students concluded Fertilizer 1 makes tomato plants grow the tallest. Which activity will support their conclusion?

- A. repeating the experiment**
- B. tasting each fruit produced**
- C. adding more fertilizer to all the plants**
- D. using the same fertilizer on all the plants**

A house is built in a desert, where there is no electricity and very little wind. Which action could lead to operating the electrical appliances in the house that would cause the LEAST amount of environmental pollution?

- A. constructing a small hydroelectric plant**
- B. placing solar panels on the roof of the house**
- C. using gasoline generators**
- D. burning coal or wood**

Which renewable energy resource possesses the greatest potential for providing renewable energy to meet the future needs of the southern United States?

**A. tidal**

**B. water**

**C. solar**

**D. coal**



It is important to use recycled paper because it

- A. comes in colors.**
- B. has a smoother appearance.**
- C. creates less pollution.**
- D. reduces the number of trees cut down.**

Which would be the BEST method to use to dispose of cardboard boxes not utilized by a local grocery store?

- A. burn them once a month**
- B. send them to be dumped in a remote area**
- C. have them recycled for future paper products**
- D. put them into a dumpster with the rest of the trash**

All of the following are reasons to conserve fresh water resources except

- A. there is an unlimited supply of fresh water.**
- B. most fresh water is frozen and may be hard to reach.**
- C. more than 6 billion people throughout the world need fresh water.**
- D. less than three percent of the water on Earth is fresh water.**

A person looking for sources of freshwater can find them in all of the following, except

**A. wetlands.**

**B. underground.**

**C. glaciers.**

**D. the Pacific Ocean.**

Which of these BEST describes how the surface of a beach is formed?

**A. mechanical weathering**

**B. chemical weathering**

**C. mass movement**

**D. volcanic eruption**

Which of the following is **not** a way to conserve home water use?

- A. turning off the water while brushing your teeth**
- B. using a washing machine when it is fully loaded**
- C. fixing leaks in a toilet**
- D. watering the lawn each day**

One year a farmer decided not to plant crops in one of his fields. During that year his farm received a greater amount of precipitation than normal. Which will MOST likely occur in that unplanted field as a result of the greater precipitation?

- A. more carbon dioxide will be trapped in the field**
- B. erosion of topsoil will increase in the field**
- C. invasive species will inhabit the field**
- D. animals will dig burrows in the field**

A class planted trees and shrubs in an empty dirt lot beside the school. The roots of the plants can help protect the soil. The soil is MOST likely being protected from what?

- A. a drought**
- B. wind erosion**
- C. an earthquake**
- D. water pollution**



A student identifies a soil sample as “very gritty.” What characteristic of the soil did the student describe?

**A. texture**

**B. hardness**

**C. organic content**

**D. water retention**

If soil is permeable

- A. water cannot flow through it.**
- B. water easily flows through it.**
- C. it contains many minerals.**
- D. it contains few minerals.**

Topsoil is rich in which substance?

**A. salt**

**B. humus**

**C. sulfur**

**D. chlorophyll**

A large quantity of heavy rain falling in a short time period will MOST likely

- A. reduce the amount of nutrients in the soil.**
- B. increase the number of minerals in the soil.**
- C. reduce oxygen levels in the soil.**
- D. increase the temperature of the soil.**

Which of the following is a way that sediment reaches deltas and beaches?

**A. continental drift**

**B. delta fans**

**C. rivers**

**D. ocean jetties**