Form	BA - 2, Science, Grade 4, SY 24-25 v2
Identifier	F-7ZWBC5_C18505

Item	Sharktooth Hill Bone Bed, Southern California
Identifier	I-SCI-F-S000052_C37708
Standards	SCI.4.4-ESS1-1
Metadata	

Sharktooth Hill Bone Bed, Southern California

At Sharktooth Hill Bone Bed near Bakersfield, California, (which is about 100 miles from the nearest ocean) scientists found huge shark teeth as big as a hand and bones from extinct seals and whales. At first, people thought these remains showed a big event where many animals died all at once, about 15 million years ago. But new research from scientists at the University of California, Berkeley, the University of British Columbia, and the University of Utah tells a different story. They say the bones were deposited over 700,000 years through the natural processes of life and death.

Below are pictures of fossils found at Sharktooth Hill.

Which types of fossils found here **BEST** explains why scientists believe that this area was once covered by an ocean?

A Fossils of land plants were very common.

B Bird fossils were found there.

C Fossils of fish and fish like animals were found there.

D Human fossils and fishing nets were found there.

Item	canyon in the Western United States
Identifier	I-SCI-F-S000052_C90327
Standards	SCI.4.4-ESS1-1
Metadata	

A student visited a canyon in the Western United States and notices rock layers in the walls of the canyon as show in the picture below:

What caused formation of the canyon and rock layers pictured above?

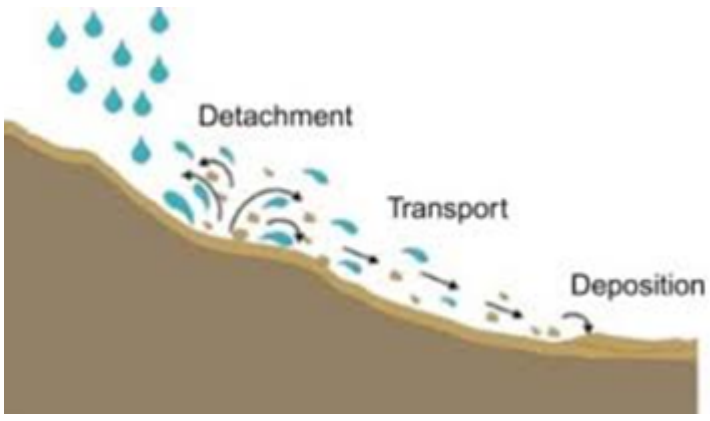
- A The sides of the canyon and plateau rose quickly over a few years.
- B The canyon used to be an ocean but then drained slowly over millions of years.
- C The river deposited different kinds of rocks on the canyon sides over a long period of time.
- D The river carved a path through the rocks over a long period of time to form the canyon.

Item	Water and wind
Identifier	I-SCI-F-S000052_C17216
Standards	SCI.4.4-ESS2-1
Metadata	

Water and wind can cause the breakdown of surface materials. This is called weathering. Which picture shows the effects of weathering?

A

B



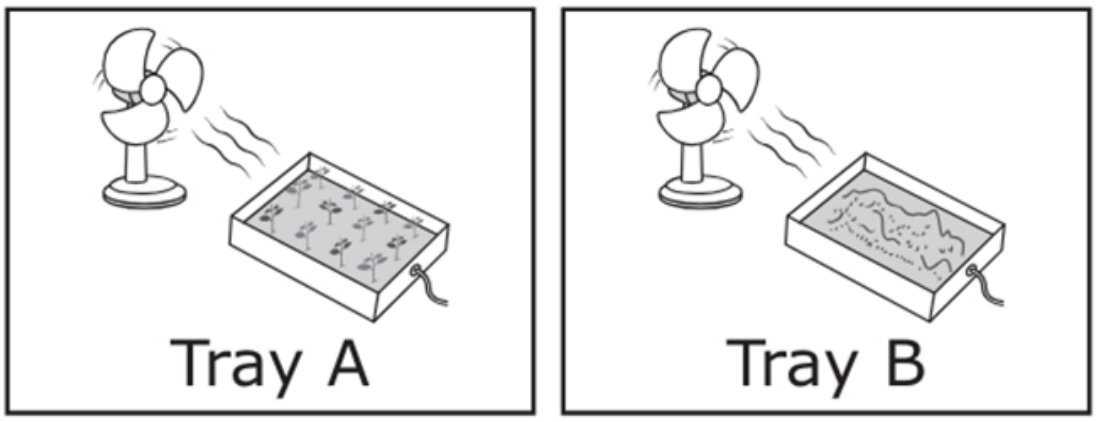
C

D

Item	Plants can have different effects on rocks, soils, and landforms.
Identifier	I-SCI-F-S000052_C74181
Standards	SCI.4.4-ESS2-1
Metadata	

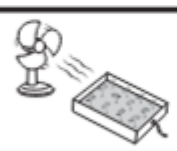
Plants can have different effects on rocks, soils, and landforms. Students measured the effect of erosion in a classroom experiment. They used a fan to measure the effect of wind on two different trays of soil.

Tray A has plants. Tray B has no plants.



The results of their experiment are shown in the data table:

Soil Erosion Results

Tray		Amount of Soil Moved by the Wind (g)
A		50
B		200

What do the results show about the effect of plants on the erosion of Earth's surface?

- A Having plants does **NOT** affect soil erosion.
- B Having plants results in **MORE** soil erosion.
- C Having plants results in **LESS** soil erosion.
- D Having plants will only affect drier soils.

Item	ice contribute to the weathering of rocks
Identifier	I-SCI-F-S000052_C40303
Standards	SCI.4.4-ESS2-1
Metadata	

How does ice contribute to the weathering of rocks?

A Ice melts and adds water to rivers.

B Ice freezes and expands, causing cracks in rocks.

C Ice blows rocks around in the wind.

D Ice blocks sunlight from reaching the rocks.

Item	discovery of a dinosaur fossil in a certain rock layer
Identifier	I-SCI-F-S000052_C03706
Standards	SCI.4.4-ESS1-1
Metadata	

How can the discovery of a dinosaur fossil in a certain rock layer help scientists?

A It tells them the exact age of the rock layer.

B It provides evidence of the types of dinosaurs that lived during that period.

C It shows that dinosaurs lived in the ocean.

D It indicates that the area was always a dry land.

Item	Ring of Fire based on the map and data
Identifier	I-SCI-F-S000052_C22026
Standards	SCI.4.4-ESS2-2
Metadata	

Volcanoes are not randomly distributed around the world but tend to cluster in certain regions. One of the most well-known volcanic regions is the Ring of Fire, a horseshoe-shaped area in the Pacific Ocean where many earthquakes and active volcanoes occur. This area includes countries like Japan, Indonesia, the Philippines, and the west coasts of North and South America. Below is a map showing the distribution of volcanoes in the Ring of Fire region:

Country	Number of Volcanoes
Japan	110
Indonesia	127
Philippines	53
USA (Alaska)	52
Russia	45

Which statement is true about the Ring of Fire based on the map and data provided?

A The Ring of Fire only includes volcanoes in South America.

B The Ring of Fire has fewer volcanoes than any other region in the world.

C The Ring of Fire includes countries with a high number of active volcanoes,
such as Japan and Indonesia.

D The Ring of Fire is a region in the Atlantic Ocean known for its calm seas.

Item	Ring of Fire based on the map and data_C39672
Identifier	I-SCI-F-S000052_C39672
Standards	SCI.4.4-ESS2-2
Metadata	

Volcanoes are not randomly distributed around the world but tend to cluster in certain regions. One of the most well-known volcanic regions is the Ring of Fire, a horseshoe-shaped area in the Pacific Ocean where many earthquakes and active volcanoes occur. This area includes countries like Japan, Indonesia, the Philippines, and the west coasts of North and South America. Below is a map showing the distribution of volcanoes in the Ring of Fire region:

Country	Number of Volcanoes
Japan	110
Indonesia	127
Philippines	53
USA (Alaska)	52
Russia	45

What pattern can be observed from the distribution of volcanoes in the Ring of Fire?

A Volcanoes are evenly spread out around the world.

B Volcanoes cluster around the edges of the Pacific Ocean.

C Volcanoes are found only in the Southern Hemisphere.

D Volcanoes are only found on islands.

Item	Ring of Fire based on the map and data_C32948
Identifier	I-SCI-F-S000052_C32948
Standards	SCI.4.4-ESS2-2
Metadata	

Volcanoes are not randomly distributed around the world but tend to cluster in certain regions. One of the most well-known volcanic regions is the Ring of Fire, a horseshoe-shaped area in the Pacific Ocean where many earthquakes and active volcanoes occur. This area includes countries like Japan, Indonesia, the Philippines, and the west coasts of North and South America. Below is a map showing the distribution of volcanoes in the Ring of Fire region:

Country	Number of Volcanoes
Japan	110
Indonesia	127
Philippines	53
USA (Alaska)	52
Russia	45

Which statement best describes the location of the Ring of Fire?

A It is in the middle of the Pacific Ocean.

B It forms a horseshoe shape around the Pacific Ocean.

C It circles the Indian Ocean.

D It is found on the southern border of the Pacific Ocean.

Item	People use levees and spillways
Identifier	I-SCI-F-S000052_C21086
Standards	SCI.4.4-ESS3-2
Metadata	

People use levees and spillways to keep safe when the water level rises in a river.

For example, the Bonnet Carré Spillway (shown above) is on the Mississippi River. The spillway is located upriver from New Orleans.

Spillways protect people from whch natural hazard?

A Earthquakes

B Tornadoes

C Floods

D Tsunamis

Item	Disadvantage of seawalls
Identifier	I-SCI-F-S000052_C71707
Standards	SCI.4.4-ESS3-2
Metadata	

Seawall in West Maui, Hawaii

What is a possible **disadvantage** of building structures like seawalls or other barriers to protect against coastal erosion?

A They are inexpensive and easy to build.

B They make the coast more attractive to tourists.

C They increase the rate of erosion.

D They can have impacts on the environment and marine life.

Item	Coastal Erosion
Identifier	I-SCI-F-S000052_C81240
Standards	SCI.4.4-ESS3-2
Metadata	

Show below is an example of coastal erosion of sea cliffs at Happisburgh, Norfolf, United Kingdom

Which statement is a possible consequence of coastal erosion?

- A Threats to human communities, including homes, buildings, roads, and other structures
- B Increased populations of sea life such as fish, sea otters, and clams
- C Creation of new beaches made of mud, sand, and rocks
- D Growth of coral reefs which create new places for fish to live