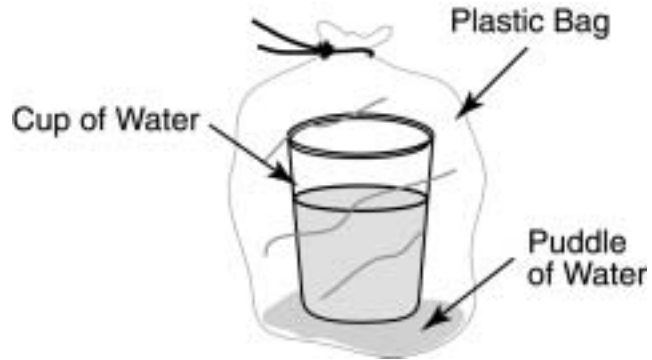


BENCHMARK SC.D.1.2.3

Strand	D	Processes that Shape the Earth
Standard	1	The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth.
Benchmark	SC.D.1.2.3	The student knows that the water cycle is influenced by temperature, pressure, and the topography of the land.
Item Type(s)		MC
Benchmark Clarification		The student identifies the effect of different variables on the water cycle.
Content Limits		Items will assess only one variable affecting the water cycle at a time. Items may address climate and precipitation.
Stimulus Attributes		Items may provide the student with data in diagram or picture form.
Response Attributes		None specified.

Sample MC Item

Maria's class is studying weather. To demonstrate the water cycle, each student places a small cup of water in a sealed, plastic bag and places it near a sunny window. At the end of the day, there are water droplets near the tops of the bags. The next morning, there is water in the bottom of each bag.



Why has the water settled to the bottom of the bags during the night?

- A. The air cooled, causing the water to evaporate to the bottom of the bag.
- B. The air has warmed, causing the water to move through the cup to the bottom of the bag.
- C. The air has warmed, condensing the water droplets, which have fallen to the bottom of the bag.
- * D. The air has cooled, condensing water vapor to droplets, which have fallen to the bottom of the bag.

BENCHMARK SC.D.1.2.4

Strand	D	Processes that Shape the Earth
Standard	1	The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth.
Benchmark	SC.D.1.2.4	The student knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features. This benchmark also assesses SC.D.1.2.1, ⁴ SC.D.1.2.2, ⁵ and SC.D.1.2.5. ⁶
Item Type(s)		MC, SR, ER
Benchmark Clarification		The student identifies factors that alter the surface of Earth over short and long periods of time.
Content Limits		Items will NOT require unit conversions to compare data. Items will NOT require the student to identify aspects of the theory of plate tectonics. Items may address more than one surface-changing process at a time.
Stimulus Attributes		Items may provide the student with data in diagram or picture form.
Response Attributes		None specified.

⁴ The complete text for SC.D.1.2.1 is “The student knows that larger rocks can be broken down into smaller rocks, which in turn can be broken down to combine with organic material to form soil.”

⁵ The complete text for SC.D.1.2.2 is “The student knows that 75 percent of the surface of the Earth is covered by water.”

⁶ The complete text for SC.D.1.2.5 is “The student knows that some changes in the Earth’s surface are due to slow processes and some changes are due to rapid processes.”

Sample MC Item

The sides of the Grand Canyon show many different layers of rocks.



Which statement describes how the Grand Canyon was formed?

- A. The canyon once had a waterfall.
- B. Big rainstorms washed rocks out of the canyon.
- * C. A flowing river cut into the rocks to form the canyon.
- D. The canyon was formed from rocks that came from other places.

Sample SR Item

Over the past five years Paige has noticed changes in the rocks on the mountainsides near her aunt's house. She thinks that this is the result of weathering. Explain how weathering can change rocks.

Correct and Complete Response

Rocks can be weathered by water, wind, or chemicals. The force of the wind and water hits the rocks and knocks off small pieces. Chemicals in the air or water from acid rain or air pollution can change the chemical composition of the rocks.

Sample ER Item

Kira conducted an investigation. She filled a thin plastic bottle to the top with water and put it in the freezer. The next day when she checked it, she noticed the water had turned to ice and the container was broken. Kira's investigation models how freezing water can cause change.



Explain how Kira's investigation models what happens to the cracks or openings of rocks.

Correct and Complete Response

Kira's bottles show how frozen water can cause changes. The frozen water bottle shows that water expands and cracks the bottle. This is similar to when water freezes inside the cracks or opening of rocks, it expands and breaks up the rocks.