

Water at Work

Trace how water changes rock over time.

6.6.d "water has a role in weathering;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each action involving water and circle the change to rock that it causes. Number 1, 2, and 3 beside the three different ways water weathers rock.

A Rock's Changing Surface

- ① Water changes rock in several ways, even though a drop of water may seem gentle. Rainwater absorbs carbon dioxide from the air and soil, making it slightly acidic. As this water seeps into cracks, it can dissolve some minerals. Over many years, dissolved material leaves tiny spaces and weakens the rock. This process is chemical weathering because the minerals in the rock change. Limestone often weathers this way, forming wider cracks, caves, or rounded surfaces.
- ② Water can also cause physical weathering, which breaks rock into smaller pieces without changing the minerals. During a cold night, water trapped in a crack may freeze. Water expands when it freezes, pushing against the crack walls. When the ice melts, the crack remains slightly wider. Repeated freezing and melting can split a large boulder. This cycle is most common where temperatures move above and below the freezing point, such as mountain areas during changing seasons.
- ③ Moving water wears rock through physical weathering too. A fast stream carries sand, pebbles, and rock fragments. These particles scrape and bump against rocks in the streambed and along the banks. This rubbing is called abrasion. It can smooth sharp edges and make smaller sediments that the stream carries farther downstream. Water itself does not need to freeze or dissolve minerals for abrasion to happen. The moving water supplies the force that keeps the particles rubbing against rock.

2 ANSWER WITH EVIDENCE Use the passage

1 What makes rainwater slightly acidic, and what can this water do to minerals in rock?

2 Explain how freezing water makes a crack in rock wider.

3 Why is repeated freezing and melting a type of physical weathering?

4 How does a fast stream cause abrasion, and what is one result of abrasion?

3 YOUR TURN Your own words

Invent a place with a rock surface. In three panels, show one water-weathering process from beginning to end, then write exactly two sentences that explain how water changes the rock.

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PART 1 • READ AND MARK

Underline each action involving water and circle the change to rock that it causes. Number 1, 2, and 3 beside the three different ways water weathers rock. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What makes rainwater slightly acidic, and what can this water do to minerals in rock?	Rainwater absorbs carbon dioxide from the air and soil. The slightly acidic water can dissolve some minerals in rock.
2	Explain how freezing water makes a crack in rock wider.	Water trapped in a crack expands when it freezes and pushes against the crack walls. After the ice melts, the crack remains slightly wider.
3	Why is repeated freezing and melting a type of physical weathering?	It breaks rock into smaller pieces without changing the minerals in the rock.
4	How does a fast stream cause abrasion, and what is one result of abrasion?	The stream carries sand, pebbles, and rock fragments that scrape and bump against rock. Abrasion can smooth sharp edges or make smaller sediments.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: A limestone statue stands in a rainy garden Panel 2: Rainwater seeps into a shallow crack and dissolves a little mineral Panel 3: The crack is wider and the statue has a rougher surface Rainwater becomes slightly acidic and dissolves minerals in the limestone. Over many years, the dissolved minerals leave spaces that weaken the statue.

Accept descriptions of chemical weathering by dissolving minerals, physical weathering by freezing and expanding, or abrasion by moving water carrying particles. For the open task, check that the panels show a logical sequence and the two sentences accurately explain a water-weathering process.