Rock Changes Journey

Tell apart rock breaking from rock moving.

SC.4.E.6.4 "Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature change, and plants) and erosion (movement of rock by gravity, wind, water, and ice)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each detail that tells how a rock breaks in place. Circle each detail that tells how rock or sediment moves to a new place, so you can compare physical weathering and erosion.

From Cliff to Creek

1. Rocks at a seaside cliff do not stay the same. On cold nights, water in tiny cracks can freeze and expand. The expanding ice pushes on the rock. After many freeze-and-thaw cycles, pieces may crack off. This is physical weathering because the rock breaks into smaller pieces, but the pieces have not traveled away yet.

2. Plants can also cause physical weathering. A seed may grow in a rock crack, and its roots press outward as they thicken. Wind-blown sand can scrape rock surfaces. Hot days and cool nights can make rock expand and shrink. Each of these changes breaks rock in place. Physical weathering changes a rock's size or shape, not its location.

3. Erosion starts when loose rock or sediment moves to a new place. Rainwater can carry pebbles downhill in a stream. Wind can blow sand across a beach, and a glacier can carry rocks in ice. Gravity can pull a rock down a slope. Weathering often happens first, then erosion moves the broken pieces. One rock can be affected by both processes.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why is the cracking at the seaside cliff physical weathering, not erosion?

2. Name two causes of physical weathering from the second paragraph.

3. How does physical weathering change a rock differently from erosion?

4. Choose two agents of erosion from the passage. Tell how each one moves rock or sediment.

3 YOUR TURN

Your own words

Draw two panels to show one rock changing. In Panel 1, show physical weathering and label the cause. In Panel 2, show erosion moving the broken rock, then write one sentence under each panel.

ANSWER KEY

Rock Changes Journey

GRADE 4 · SC.4.E.6.4

PART 1 · READ AND MARK

Underline each detail that tells how a rock breaks in place. Circle each detail that tells how rock or sediment moves to a new place, so you can compare physical weathering and erosion. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why is the cracking at the seaside cliff physical weathering, not erosion?	**The ice breaks the rock into smaller pieces, but the pieces have not traveled away.**
2	Name two causes of physical weathering from the second paragraph.	**Any two: plant roots pressing in cracks, wind-blown sand scraping rock, or temperature changes making rock expand and shrink.**
3	How does physical weathering change a rock differently from erosion?	**Physical weathering changes a rock's size or shape in place. Erosion moves rock or sediment to a new place.**
4	Choose two agents of erosion from the passage. Tell how each one moves rock or sediment.	**Any two: rainwater carries pebbles downhill, wind blows sand across a beach, a glacier carries rocks in ice, or gravity pulls a rock down a slope.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1: A tree root widens a crack and breaks a rock in place. Panel 2: Rainwater carries the broken rock downhill to a stream.

Accept accurate examples that clearly show rock breaking in place for physical weathering and rock or sediment moving for erosion. For the drawing, the two panels must show different processes and include a correct written sentence for each.