Land in Motion

Trace how physical processes shape landforms in specific places.

WG.3.4 "Explain and give examples of the physical processes that shape Earth's surface that result in existing landforms and identify specific places where these processes occur."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB In each paragraph, underline one process that changes rock, circle a landform it shapes, and box the named place where it occurs.

Three Places, Three Changing Landscapes

1. At the edge of the Indian and Eurasian tectonic plates, the Himalayas are still rising. Millions of years ago, the Indian plate moved north and collided with the Eurasian plate. Because both plates carry thick continental crust, neither plate easily sank beneath the other. Instead, the crust crumpled and thickened, pushing rock upward into high mountains. Mount Everest, on the border between Nepal and China, is part of this range. Wind, rain, and ice wear down its slopes while plate movement continues to lift the range. A mountain range can therefore be shaped by more than one process at once.

2. In northern Arizona, the Colorado River runs through the Grand Canyon, exposing layers of rock along its walls. The river carries sand and small stones that scrape its bed, cutting deeper into rock over long periods of time. Tributaries bring water from side valleys, helping widen the canyon. Rain and freezing water also loosen rock from the walls, and gravity pulls broken pieces downhill. The land of the Colorado Plateau has risen over millions of years, giving the river more height to cut through. The canyon shows how flowing water, weathering, gravity, and uplift can work together in one place.

3. In California's Yosemite Valley, thick glaciers once moved slowly through an older river valley. Snow piled up, turned to ice, and flowed downhill under its own weight. Rock fragments frozen into the ice scraped the valley floor and sides, while moving ice pulled loose blocks of rock away. These actions carved a broad, steep-sided valley. When the ice melted, it left a shape much wider than the river alone had carved. Today, cliffs such as El Capitan rise above the valley floor. Yosemite Valley shows that ice can reshape land built by earlier processes, leaving clues long after the glacier disappears.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the collision of two plates create the Himalayas? Name one specific place in the range.

2. How have both the Colorado River and uplift shaped the Grand Canyon in northern Arizona?

3. What did moving glaciers do to the older river valley at Yosemite Valley in California?

4. Compare one way gravity helps shape the Grand Canyon with one way it helped shape Yosemite Valley.

3 YOUR TURN

Your own words

Choose a real named place not mentioned in the passage. In three or four sentences, name a landform there, explain a physical process that shaped it, and compare that process with one that shaped a place in the passage.

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PART 1 · READ AND MARK

In each paragraph, underline one process that changes rock, circle a landform it shapes, and box the named place where it occurs. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the collision of two plates create the Himalayas? Name one specific place in the range.	**The Indian and Eurasian plates collided, crumpling and thickening the crust so that rock rose into mountains. Mount Everest, on the Nepal-China border, is in the range.**
2	How have both the Colorado River and uplift shaped the Grand Canyon in northern Arizona?	**Uplift raised the Colorado Plateau, giving the Colorado River more height to cut through. The river's water, sand, and stones then cut deeper into the rock.**
3	What did moving glaciers do to the older river valley at Yosemite Valley in California?	**Ice carrying rock fragments scraped the valley floor and sides and pulled loose blocks away, carving a broad, steep-sided valley wider than the river alone had carved.**
4	Compare one way gravity helps shape the Grand Canyon with one way it helped shape Yosemite Valley.	**At the Grand Canyon, gravity pulls broken rock downhill from the walls. At Yosemite Valley, gravity helped glaciers flow downhill, allowing the ice to carve the valley.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Kīlauea on the island of Hawai'i is a shield volcano. Repeated eruptions spread lava that cools into rock and builds its broad slopes. Both Kīlauea and the Himalayas rise above nearby land, but Kīlauea is built by eruptions while the Himalayas rise because colliding plates thicken the crust.

Accept accurate explanations that connect a process, its effect on a landform, and the named place. For Part 3, the place must not appear in the passage, and the comparison must explain how the processes shape land.