THE STANDARD

Earth's Features

"Analyze and interpret data from maps to describe patterns of Earth's features."

ANCHORING PHENOMENON

The Ring of Fire

Show 4th graders a world map with every volcano marked, then a second map with every big earthquake marked. At first it looks messy. But the volcano dots curve in a giant ring all the way around the Pacific Ocean, and a lot of the earthquake dots trace that same ring. Same shape, two different maps. They'll want to know why so many dots keep landing in the same places.

> **DRIVING QUESTION**
> *"Why do so many volcanoes and earthquakes show up in the same long lines instead of being spread out everywhere?"*

INVESTIGATIVE 1

Where the Mountains Stand

Give groups a topographic or relief map and ask them to find the tallest mountain ranges. They'll notice the big ranges don't sprinkle randomly. They run in long chains, often near the edges of continents or right where two land areas meet. Use this to sharpen the anchor: mountains follow lines too, just like the volcanoes did.

> **DRIVING QUESTION**
> *"Where on the map do the biggest mountain ranges line up, and what do those spots have in common?"*

INVESTIGATIVE 2

Mountains Under the Ocean

Flip the map to the ocean floor. A topographic map of the seafloor shows deep trenches and long underwater mountain ridges. 4th graders are usually shocked the ocean floor has mountains and deep canyons at all. Look closely at where each one sits. The deep trenches tend to sit near the edges of continents, while the long underwater ridges usually run through the middle of the ocean.

> **DRIVING QUESTION**
> *"What patterns show up on the bottom of the ocean, and do they match the patterns we saw on land?"*