THE STANDARD

# Past Plate Motions

*Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.*

ANCHORING PHENOMENON

## Mesosaurus on Two Continents

A small freshwater reptile called Mesosaurus lived about 290 million years ago. Its fossils are found in only two places: a band along the coast of southern Africa and a matching band along the coast of South America. Nowhere else. It lived in lakes and rivers, not oceans, so it couldn't have swum across the Atlantic. Students will keep circling back to this all week.

DRIVING QUESTION

*"How can the same freshwater animal end up fossilized on two continents separated by an ocean it couldn't cross?"*

INVESTIGATIVE 1

### The Atlantic's Hidden Mountain Range

A topographic map of the Atlantic Ocean floor shows a long mountain range running straight down the middle, from the Arctic almost to Antarctica. The seafloor closest to the ridge is the youngest. The seafloor near the continents is the oldest. Use this one to sharpen the lens the anchor is pushing on: continents aren't just sitting still, they're being actively pushed apart.

DRIVING QUESTION

*"Why is there a giant mountain range running down the middle of the Atlantic Ocean, and why is the rock newer in the middle than at the edges?"*

INVESTIGATIVE 2

### The Ring of Fire

A world map showing every major volcano and earthquake from the past 50 years. The dots aren't spread evenly. They trace a giant ring around the Pacific Ocean, line up along the Andes, run through Japan, the Philippines, Indonesia, and Alaska. Same kind of pattern shows up in a thin line down the middle of the Atlantic. The dots draw the plate boundaries. Same kind of pattern-thinking the anchor demands, only the pattern is in active geologic activity instead of fossils.

DRIVING QUESTION

*"Why do volcanoes and earthquakes happen in such specific places instead of being spread evenly across Earth's surface?"*