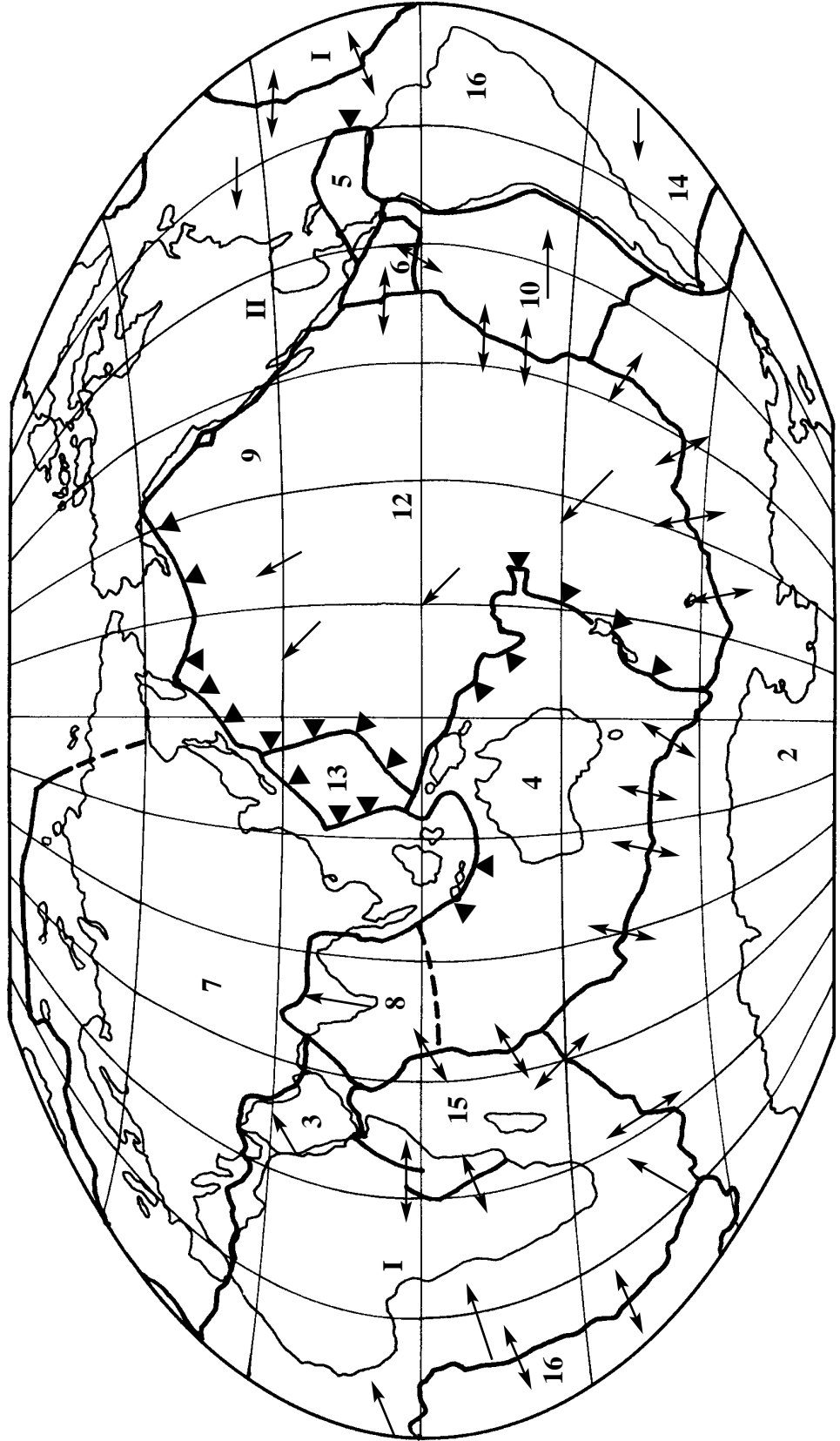


Plate Tectonics *(cont.)*

Earth's Plates Puzzle

To the Teacher: Cut along the dark lines to make puzzle pieces of this map. Provide a set of puzzle pieces for each group of students to use. If the map is copied on cardstock, the puzzle pieces will be more durable.



Off to the Future



Topic: Pacific Plate 50 million years from now

Objective: Students will learn that the California coastline west of the San Andreas Fault will change drastically over the next 50 million years as the Pacific Plate continues to slowly move north.

Background: As the Pacific Plate moves north relative to the North American Plate, it carries with it the part of California located west of the San Andreas Fault, including Baja California. Many scientists believe this section will eventually break away from the North American continent and be pushed towards Alaska.

Materials:

- California's Movin'! map (page 80) for each student
- *Living on the Edge* poster-map (see Resources section)
- World Map 50 Million Years from Now (page 79)
- map showing California and Baja California
- transparency of Earth's Plates Puzzle (page 70)
- overhead projector

Preparation:

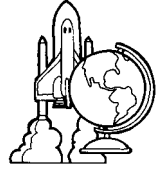
- Make transparencies of California's Movin'! and World Map 50 Million Years from Now.
- Make copies of the California's Movin'! map for each student.

Procedure:

- Show the transparency of Earth's Plates Puzzle and review how the Pacific Plate is moving relative to the North American Plate.
- Use the transparency of the World Map 50 Million Years from Now for students to discuss changes which are predicted. Draw their attention to the western coastline of North America.
- Show the transparency of California's Movin'! which shows the enlarged section of the world map. Point out the location of the San Andreas Fault and tell the background information.
- Distribute a copy of the map to each student and have them cut along the fault as indicated.
- Let them move the Pacific Plate north of the North American Plate to gradually show what is happening along the fault.

Discussion:

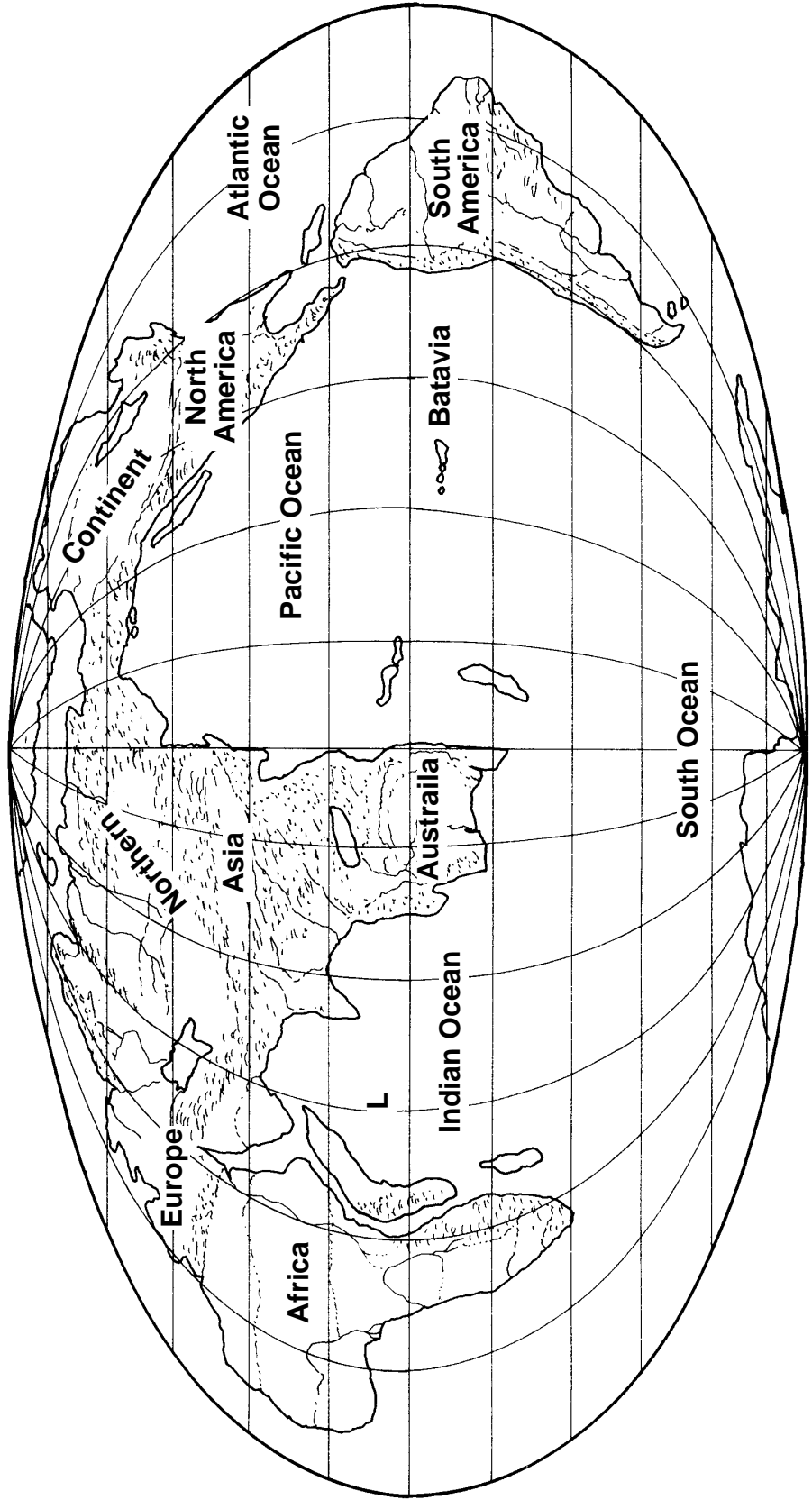
- Demonstrate the motion of the Pacific Plate on the overhead projector, showing the gradual northward movement of the plate.
- Tell students that the climate today west of the San Andreas Fault ranges from desert in Baja California to more rainfall as you move north toward San Francisco.
- Provide the students with a map showing Washington, Oregon, and California, as well as information about the climates in these areas.
- Ask the students to discuss what they think the climate of the piece of land west of the San Andreas Fault will be like 50 million years from now.



Off to the Future *(cont.)*

World Map 50 Million Years from Now

Scientists have made predictions of what the Earth's surface will look like 50 million years from now based upon the motion of the crustal plates. Continents will be relocated, and some will be missing pieces. Compare it to the present-day world map to find changes.





Off to the Future (cont.)

California's Movin'!

To the Student: This map shows California and the Baja California Peninsula as they appear today. Notice the location of the San Andreas Fault, a long fracture in the Earth's crust stretching from San Francisco southeast to the Gulf of California (between Baja California and Mexico). Land on the western side of this fault is on the Pacific Plate; that on the eastern side is on the North American Plate. The Pacific Plate is moving about two inches (5 cm) a year. Where pressure builds up between plates, earthquakes can occur. One of the worst was in San Francisco in 1906 when a major earthquake knocked down buildings and fires destroyed most of the city.

Cut along the fault line, beginning north of San Francisco and stopping south of Baja California. Gradually move the Pacific Plate northwest, away from the North American Plate, to see how scientists think this area will change over time. This section of land may become an island in 50 million years, with San Diego off the coast of Washington at about 45° north latitude.

