Physical
**Earth and Space**
Life

# LESSON 56

## Identifying tectonic plates and their movements

***Lesson Preparation***

***Program Materials***

- Child's Booklet E *Exploring the Earth's Structure* (pp. 10–11)
- Lesson Review 56

***Collected Materials***

- Colored pencils

## *The Lesson*

**"In your last science lesson, you learned the three ways tectonic plates move."**

**"What is one way tectonic plates move?"** ***collide, separate, or slide***

**"Use your hands to show plates (colliding, separating, or sliding)."**

- Demonstrate the movement with your hands also.
- Repeat for the other two movements.

**"What three things may occur when tectonic plates collide or separate?"** ***mountains form, earthquakes occur, volcanoes erupt***

**"What happens when tectonic plates slide?"** ***earthquakes occur***

**"Today you will learn the names of the largest tectonic plates and some of the smaller plates."**

**"You will also learn how these plates move."**

**"Take out your geology booklet and colored pencils."**

**"Open your booklet to pages 10 and 11."**

**"This map shows the seven largest tectonic plates and some of the smaller ones."**

**"The heavy dotted lines on the map that look like a zipper show the approximate boundaries, or edges, of these tectonic plates."**

**"Point to the words 'North American Plate.'"**

**"Why do you think it is called this?"** ***The continent of North America is on this plate.***

**"Use your finger to trace the zipper-like boundary of the North American Plate."**

**"Use your blue colored pencil to underline the words 'North American Plate.'"**

- Allow time for your child to do this.

**"Now use your blue colored pencil to trace along the inside edge of the boundary of the North American Plate."**

- Assist your child as he/she does this.
- **Optional:** Allow your child to use the blue colored pencil to lightly shade the area within the outlined boundary.
- Repeat, using the colors listed for the following plates:

  South American Plate—red
  African Plate—green
  Indo-Australian Plate—brown
  Eurasian Plate—orange
  Pacific Plate—yellow
  Antarctic Plate—purple

**"These are the seven largest tectonic plates."**

**"Look at the key next to the compass rose."**

**"What do the arrows pointing toward one another show?"** ***Plates move toward one another and collide.***

- Repeat with the other symbols in the key.

**"Point to where the North American and Eurasian plates meet."**

**"You should be pointing to the arrows where the blue and orange lines are next to one another."**

**"The arrows along the boundary show the direction the plates are moving."**

**"Do you think the plates are separating or colliding?"** ***separating***

**"Why?"** ***The arrows are pointing apart.***

**"If the arrows are pointing away from one another, the plates are separating."**

**"Point to the African Plate."**

**"What is the name of a plate that is separating from the African Plate?"** ***South American, North American, Antarctic, or Indo-Australian***

- Repeat until all four are named.

**"Point to the small Nazca (näz'kə) Plate to the left of South America."**

**"Which large plate is colliding with the smaller Nazca Plate?"** ***South American Plate***

**"How do you know?"** ***The arrows are pointing toward one another.***

**"The colliding of these plates created the Andes (ăn'dēz) Mountains on the west coast of South America."**

**"There are many volcanoes in the Andes Mountains."**

**"It took millions of years for these mountains to form, and they are still changing."**

**"Point to the Eurasian Plate with the index finger of one hand."**

**"Point to the Indo-Australian Plate with the index finger of your other hand."**

**"Move your fingers to the arrows that show that the Eurasian and the Indo-Australian plates are colliding."**

**"The colliding of these plates created the Himalayan (hĭm'ə-lā'ən) Mountains, which contain the tallest mountains on Earth."**

**"Do you remember from the layers of the atmosphere lesson the name of the tallest mountain on Earth?"** ***Mount Everest***

**"Mount Everest, the tallest mountain on Earth, is growing taller by about ½ centimeter a year because of the colliding plates."**

- **Teacher Note:** The volcanic mountain Mauna Kea (mou'nə kā'ə) in Hawaii is actually taller than Everest, but only a small part of the mountain is visible above the water and, consequently, it is not commonly referred to as taller than Everest.

**"Point to the West Coast of North America."**

**"What two plates meet here?"** ***North American and Pacific***

**"What do you notice about the arrows?"** ***They point in opposite directions.***

**"These plates are sliding past one another in opposite directions."**

**"California is located on this plate boundary."**

**"What happens in California when these plates slide?"** ***Earthquakes occur.***

- **Teacher Note:** Earthquakes and volcanoes also occur where the Juan de Fuca and the North American plates collide, and where the Cocos and the Caribbean plates collide.

**"Almost all earthquakes and volcanoes occur along plate boundaries."**

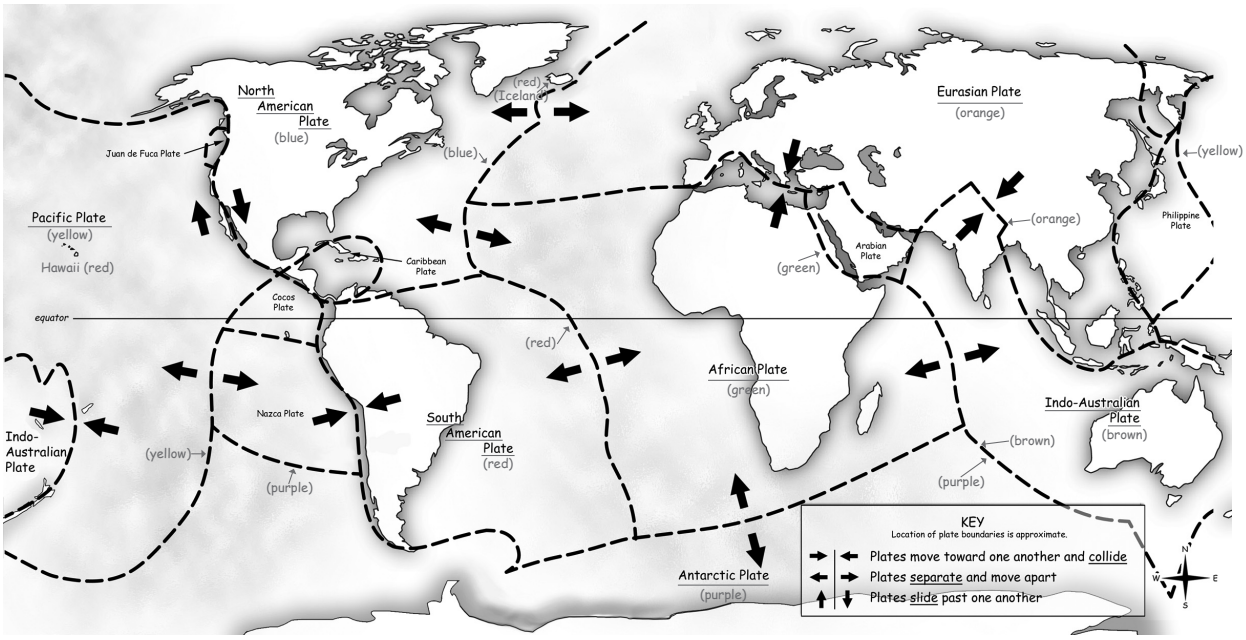
**"What is something you learned in today's science lesson?"**

**"In your next science lesson, you will learn about earthquakes."**

## *Lesson Review*

- **Note:** Lesson reviews may be completed on the same day the lesson is taught or on the following day.
- Hand Lesson Review 56 to your child.
- Read the directions and questions to your child.
- Discuss the "Use What You Have Learned" question with your child.
- Allow your child to use his/her booklet to answer the questions.
- Correct your child's paper. Review incorrect answers with your child.

**Tectonic Plates** Lessons 55, 56, and 58




10  *Science 3* *Science 3*  11

Name Answer Key

Date

Lesson Review 56
Science 3 Lesson 56

## How the Earth's Tectonic Plates Move

Use the map on pp. 10–11 in your geology booklet to answer the questions.

1. What are two tectonic plates that separate in the middle of the Atlantic Ocean? (Use map on pp. 4–5 to find the Atlantic Ocean.)

South American Plate and African Plate

North American Plate and African Plate,
or North American Plate and Eurasian Plate

2. Circle the plate that slides along the North American Plate.

Nazca Plate  Philippine Plate  (Pacific Plate)

### Look Back

3. What are the three ways tectonic plates move? (pp. 8–9)

collide  separate  slide

4. Put an **X** on the answer that is **not** one of the five oceans. (pp. 4–5)

Indian Ocean  Atlantic Ocean  ~~Northern Ocean~~  Arctic Ocean

5. Put an **X** on the answer that is **not** one of the layers of Earth. (p. 7)

~~soil~~  mantle  outer core  inner core

### Use What You Have Learned

6. There are more earthquakes along the west coast of the United States than in any other part of the United States. Why do you think this happens?

Accept reasonable answers.

Possible answer: The North American Plate and the Pacific Plate meet along the west coast. They slide causing earthquakes.



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