

NEW DATA ON THE SHIFTING EARTH

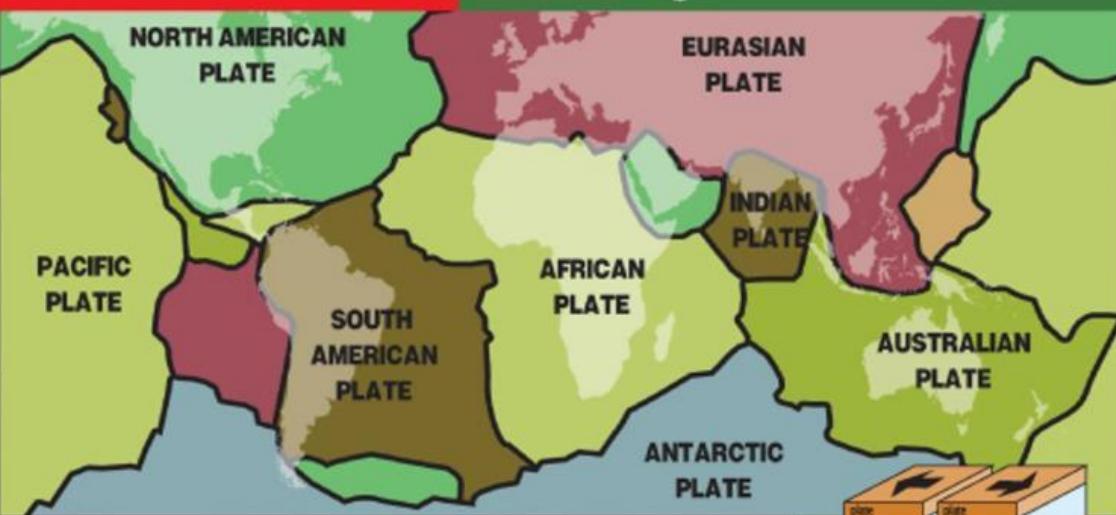
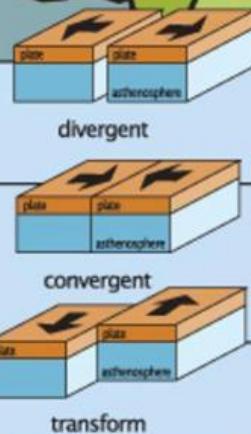


Plate tectonics is nothing new. Scientists have known about the Earth's surface movement for decades. However, a new study shows startling new data. A few **tectonic plates** are moving faster than we thought. Geographical changes along some **boundaries** will occur sooner than expected.

Dr. Albert Roca began the study on West Cale Island. Increased earthquake activity was reported along the **fault**. He measured movements on the **transform boundary**. Dr. Roca's report concerned residents. He predicts that significant geological changes will occur in a few hundred years.

Dr. Roca also examined a **divergent boundary** off the coast. The movement of two **oceanic plates** is causing **seafloor spreading**. Although the movement occurs mid-ocean, it may have **continental effects**. When a plate moves, its **continents** also move. **Convergent boundaries** will likely form on the opposite sides of each plate.

Fortunately, we still won't see the effects for thousands of years. This type of **continental drift** occurs slowly.



1. Read the article. Then, mark the following statements as *True* or *False*.

- 1 The fault on the island creates a transform boundary. True False
- 2 According to the study, oceanic plates are not likely to affect the continents. True False
- 3 The scientist predicts significant continental drift within a few hundred years. True False

2 Read the article again. When do continents move? Fill in the gaps.

Continents move when move.

3 Match the words or phrases with the definitions (A-F).

plate tectonics **continental** **continental drift** **oceanic** **seafloor spreading** **transform boundary**

A the science of the movement of the Earth's surface

B the movement of land over time

C an area where two plates slide against each other

D the formation of new crust at the bottom of the ocean

E existing or occurring in the ocean

F existing or occurring on land

4 Read the sentence pairs. Choose which word or phrase best fits each blank.

1 convergent boundary / divergent boundary

A) One plate moving under another plate forms a .

B) Plates moving away from each other form a .

2 faults / tectonic plates

A) Gaps in the Earth's surface create .

B) slide against each other at transform boundaries.

3 boundaries / continents

A) The Earth's landmass is separated into several .

B) There are a few types of between tectonic plates.

5 Use the words below to fill out the poster.

Words: lava alongside forced away gap towards

Earth Science: Tectonic Plates	
Boundary:	Plate Movements:
Convergent boundary	plates move <input type="text"/> each other, one plate is <input type="text"/> under the other
Divergent boundary	plates move <input type="text"/> from each other, <input type="text"/> rises to fill the <input type="text"/>
Transform boundary	plates move <input type="text"/> each other on a fault

6 Listen to a conversation between a student and an instructor. Choose the correct answers.

▶ 0:00 / 0:00 ⏪ ⏴ ⏵

1 What is the main idea of the conversation?

- A when tectonic plates are most likely to collide
- B how to identify different types of boundaries
- C where to find notable faults on major continents
- D which movements cause the most surface disruption

2 Which concept confuses the woman?

- A transform boundaries
- B continental drift
- C seafloor spreading
- D divergent boundaries

Listening

7 Listen again and complete the conversation.

▶ 0:00 / 0:00 ⏪ ⏴ ⏵

Student: Mr. Albee, I'm a little unclear about the plate boundaries.

Instructor: Okay. What's confusing?

Student: I know that a divergent boundary forms when plates move away from each other.

Instructor: That's right. And which boundary forms when they move towards each other?

Student: Well, that's what I'm not sure about. The book says it's a convergent boundary. But plates also move in opposite directions at a transform boundary.

Instructor: Sometimes, two plates collide. One plate is forced under another plate. That's a convergent boundary.

Student: Okay. So the plates don't collide at a 1) [] [] ?

Instructor: No. They just 2) [] [] each other.

Student: I just can't picture it. What's 3) [] [] ?

Instructor: Imagine two cars on a road. They pass each other while traveling 4) [] [].

That's like what happens at a transform boundary.

Student: Oh, I think I get it. One slides 5) [] [] of the other.

Instructor: That's 6) [].

8 Listen to a conversation between a reporter and a geographer. Mark the following statements as *True* or *False*.



- 1 The woman predicted the earthquake. True False
- 2 Seismologists were surprised to discover the fault zone. True False
- 3 The earthquake occurred along a transform boundary. True False

9 Use the words below to complete the summary on plate tectonics.

separation theory interact evidence type three careful divergent surface ridges

Geology 201 Essay

Plate Tectonics

Plate tectonics is the science of the movement of the Earth's . Prior to plate tectonics, scientists debated a called continental drift. It's a companion theory to plate tectonics. Through research, plate movement was proved through physical .

There are major types of boundaries. Convergent, , and transform boundaries are locations where plates in some way. The interaction may be a collision, , or subduction.

Depending on the of movement, certain geologic features develop. Oceanic and trenches are the result of plate movement.

10 Match the sentence halves to form complete sentences expressing purpose. Write the letters in the boxes:

1. Geologists study convergent boundaries.....
2. Seismologists use seismographs.....
3. Engineers design stronger buildings.....
4. Scientists monitor fault zones.....

5. Governments invest in early warning systems.....

Options to choose from:

- a.** so that they can detect even minor tremors.
- b.** with the aim of protecting people during seismic events.
- c.** for the purpose of reducing casualties during earthquakes.
- d.** to understand how mountains are formed.
- e.** so as to improve the quality of urban transportation.
- f.** in order to predict potential earthquakes.