

7.2.5 Assessment

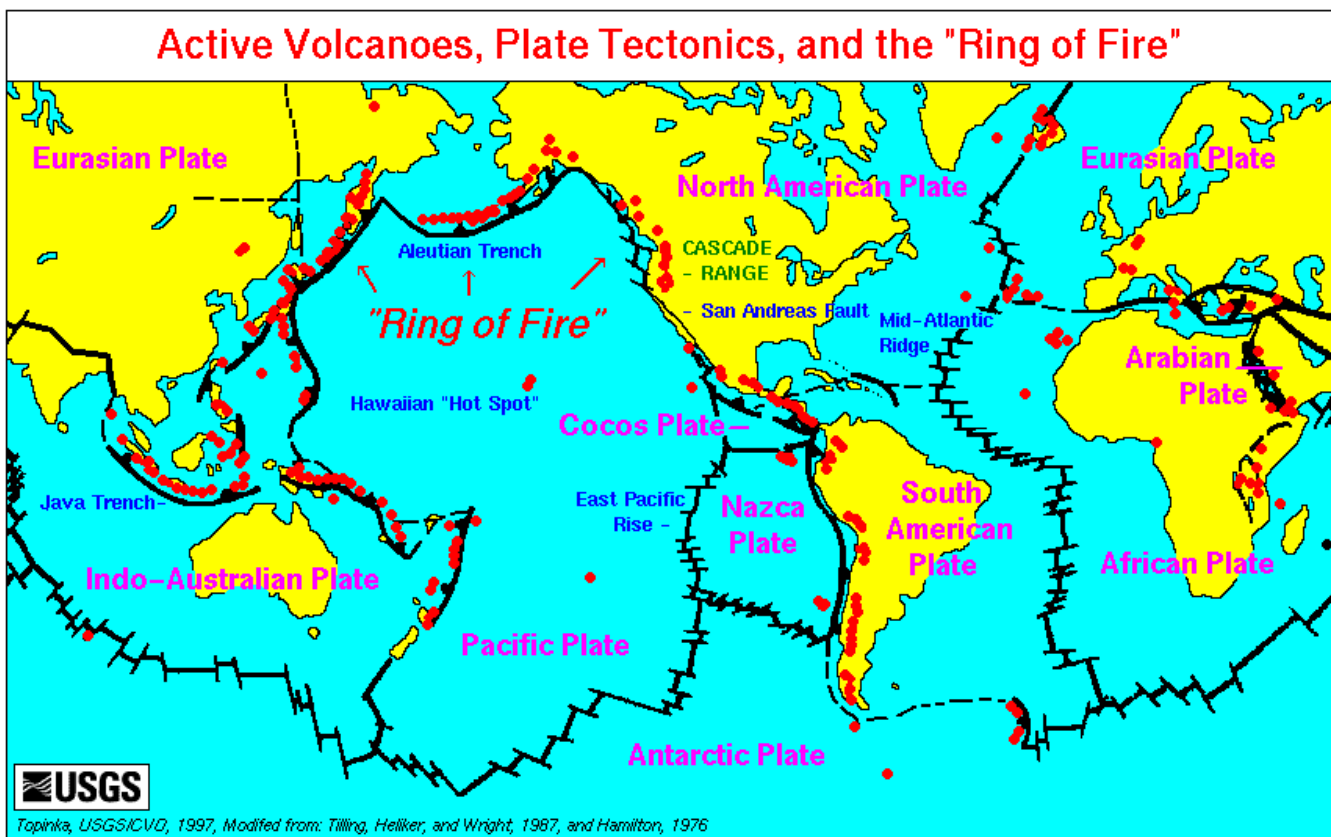
Standards: 7.2.5: *Patterns found on Earth are evidence of plate tectonics.*

Task 1

Look at the diagram of the Ring of Fire shown below:

Identify and circle the letter for one or more pattern(s) between the location of volcanoes (red dots) and the plate boundaries.

- a. The volcanoes never occur on the plate boundaries.
- b. The volcanoes always occur on the plate boundaries.
- c. The volcanoes most often occur on the plate boundaries.
- d. A few volcanoes occur on the plate boundaries, most volcanoes do not.



How can the pattern you identified be used as evidence that the plates move? State the evidence and how that evidence supports the movement of the crust.

Task 2

What do you know about the movement of Earth's crust? Place a "Y" after each statement that is evidence of plate tectonics and "N" after each statement that is not evidence. Justify your choice for each statement.

Statement	Y or N	How it is/isn't evidence of plate tectonics
Mountains form where two plates collide.		
Volcanoes and earthquakes occur more often at plate boundaries.		
Sailors have brought new species of animals to other continents, where they have thrived.		
Fossil records show that continents used to be together and have drifted apart.		

Task 3

Think about *Glossopteris*, the fossil found on the continents of Antarctica, India (Asia), South Africa, and South America. These continents have very different climates and are all separated by oceans now. How do you explain why fossils of the same plant species are found on all these varied continents? Construct an explanation by filling in the sections below.

Claim:

Evidence from our investigations:

Reasoning (how the evidence supports your claim):

7.2.5 Assessment KEY

Task 1

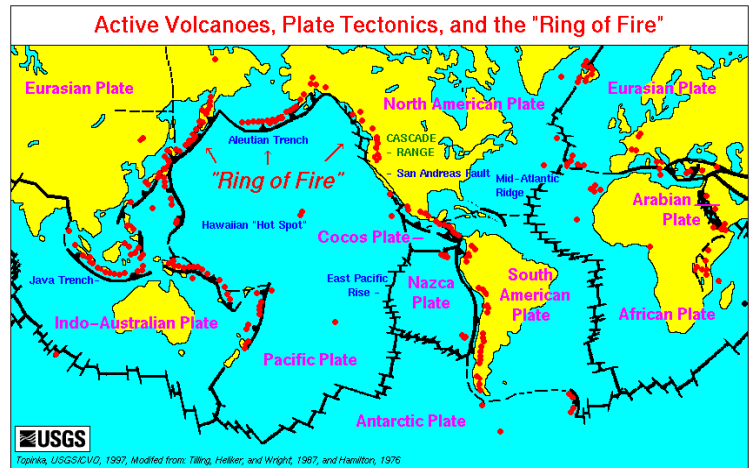
Look at the diagram of the Ring of Fire shown below:

Identify and circle the letter for one or more pattern(s) between the location of volcanoes (red dots) and the plate boundaries.

- The volcanoes never occur on the plate boundaries.
- The volcanoes always occur on the plate boundaries.
- The volcanoes most often occur on the plate boundaries.**
- A few volcanoes occur on the plate boundaries, most volcanoes do not.

How can the pattern you identified be used as evidence that the plates move?

Volcanoes are evidence of earth's crust being pulled down into the mantle. Some of the material from the newly melted crust seeps up forming pockets of magma which can build up enough pressure to explode from the ground in a volcanic eruption.



Task 2

What do you know about the movement of Earth's crust? Place a "Y" after each statement that is evidence of plate tectonics and "N" after each statement that is not evidence. Justify your choice for each statement.

Statement	Y or N	How is it evidence of plate tectonics?
Mountains form where two plates collide.	<u>Y</u>	<u>The formation of mountains along plate boundaries show the plates are moving.</u>
Volcanoes and earthquakes occur more often at plate boundaries.	<u>Y</u>	<u>The occurrence of hazards along plate boundaries show the plates are moving.</u>
Sailors have brought new species of animals to other continents, where they have thrived.	<u>N</u>	<u>Human interference in species movement have nothing to do with plate movement.</u>
Fossil records show that continents used to be together and have drifted apart.	<u>Y</u>	<u>The separation of fossils of the same species show the plates are moving.</u>

Task 3

Think about *Glossopteris*, the fossil found on the continents of Antarctica, India (Asia), South Africa, and South America. These continents have very different climates and are all separated by oceans now. How do you explain why fossils of the same plant species are found on all these varied continents? Construct an explanation by filling in the sections below.

Claim: **The continents used to be part of one large continent called Pangaea when *Glossopteris* was alive. The continent split apart and that's why fossils of *Glossopteris* are found on such different continents now.**

Evidence from our investigations: **The map of Pangaea showed how the continents used to fit together, with the fossils and mountain ranges lining up. The continents are still moving on the plates.**

Reasoning (how the evidence supports your claim): **Because the continents could have fit together, and there are patterns of fossil distribution and mountain formation, and we know the Earth has plates that cause the continents to still move, the evidence supports the claim that the continents used to be together when *Glossopteris* was alive.**

