

Plate Motion Unit CER

Directions: First, finish the **claim** to address the investigation question: “**Why are mesosaurus fossils found on two separate continents when they used to live together?**” Then, **identify 3** pieces of **evidence** that tectonic plates move and **explain** how each one supports your answer with **reasoning**. Remember to include **high quality evidence, vocabulary, AND explain what caused** the fossils to separate in order to exceed the standard. You may use your science notebook and resources in Google Classroom while writing your CER, but no other sources.

Learning Targets:

1) I can finish the **__Claim _____** that answers the investigation **_theory “Why are mesosaurus fossils found on two separate continents when they used to live together?” _____**.

2) I can **_____ Identify _____** at least 3 pieces of evidence to support the claim.

3) I can **_explain _____** how the evidence supports the claim with reasoning.

4) I can explain why the plates have moved & **___connect _____** the evidence to the claim.

What resources from this unit can you use to help you with your CER?

- Rubric
- Sim
- Passages
- Science notebook

List 3 pieces of evidence from the unit that you think supports your claim.

1. When two continental plates transform, there are earthquakes and faults in the Earth's outer layer. When two convergent continental crusts converge, a mountain is formed, and when two oceanic plates converge, a mid-ocean ridge is formed. A pattern that was found was when planet tectonics move, volcanoes and earthquakes happen.
2. Gps measurements
3. In the simulation, it showed that when tectonic plates diverged, the continents also diverged.

WORD BANK:

Crust/Outer Layer, Tectonic plate, Cross-section, Pattern, Earthquakes, GPS measurements, Earthquakes, Trench, Mantle, Continents, Mountain ranges, Fossils, Convection currents, Mid-Ocean Ridge, Volcanos, Convergent Plate Boundary, Divergent Plate Boundary, Rate, Simulation, Scientific models

Claim: The Mesosaurus fossils are separated because of plate tectonics moving apart.

1. **Evidence 1:** Divergent plate boundaries moved the continents apart.

Reasoning 1: GPS measurements of the Earth have shown that tectonic plate boundaries move at a rate of 1-10 cm each year, and this shows that the mesosaurus fossils are separated because over many years the continents slowly diverged.

2. **Evidence 2:** In the scientific model, it showed two chocolate bars diverging, and when the chocolate bars diverged, a trench was formed.

Reasoning 2: In this model, when the Chocolate bars diverged, which represent oceanic plates, they were moved apart from each other, and in between the two chocolate bars, the marshmallow fluff, which can represent lava or the mantle, rose due to the convection currents and hardened. This represents how the mesosaur fossils were found on two different continents, because of plate tectonics moving apart.

3. **Evidence 3:** The cross-section shows two plates diverging from each other, and magma rising to fill in the gap.

Reasoning 3: While this model shows a gap filling in the distance between the two plates, and the mesosaurus fossils being on two different continents, this represents the plates moving apart, and if continental plates were to diverge, then there would be two different continents, due to the separation.