

Scan Lesson 1. Then write three questions that you have about continental drift in your Science Journal. Try to answer your questions as you read.

Main Idea

Pangaea

I found this on page _____.

I found this on page _____.

Evidence That Continents Move

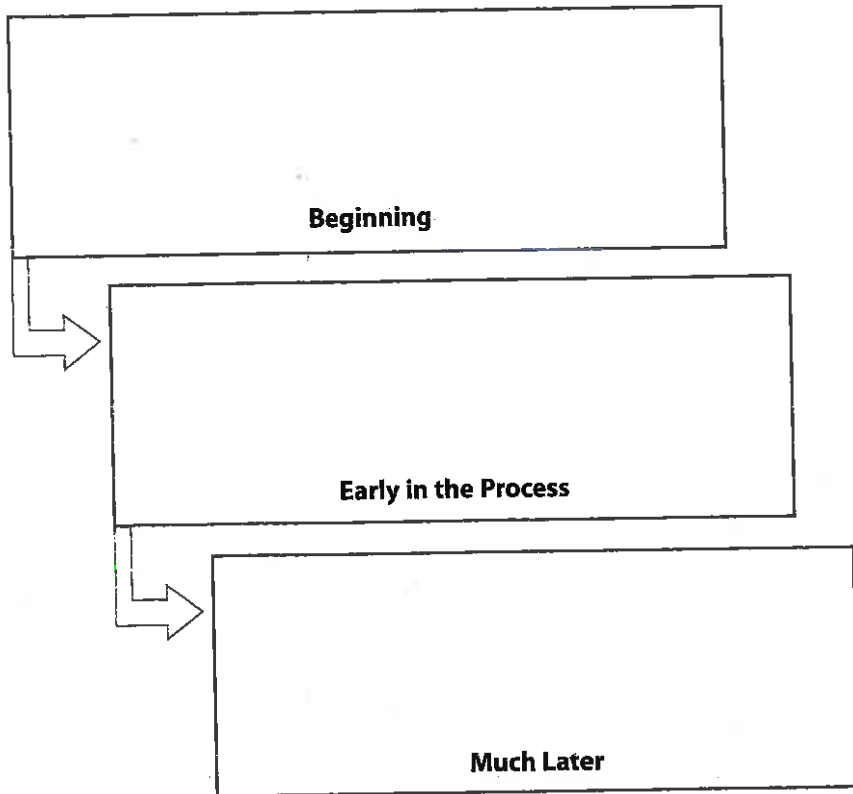
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Details

Define Pangaea. Include in your definition the name of the scientist who proposed the idea.

Summarize the effect of continental drift on Pangaea.

Model the stages of the breakup of Pangaea. Draw or describe each stage.



Lesson 1 | The Continental Drift Hypothesis (continued)

Main Idea

Details

I found this on page _____.

I found this on page _____.

What was missing?

I found this on page _____.

Classify two examples of evidence that continents have moved during Earth's history. Write an explanation and give two examples for each kind of clue.

Clue	Explanation	Examples
Climate clues		
Rock clues		

Identify two reasons why scientists doubted Wegener's ideas.

1. _____
- _____
2. _____
- _____

Analyze It Many natural resources are mined from the rock beneath Earth's surface. Use what you have learned to explain how evidence found on one continent could be useful on another.

Lesson 2 Development of a Theory

Predict three facts that will be discussed in Lesson 2 after reading the headings. Write your predictions in your Science Journal.

Main Idea

Mapping the Ocean Floor

I found this on page _____.

Seafloor Spreading

I found this on page _____.

Details

Assess information about the ocean floor. Read the statements below. If the statement is true, write true on the line. If it is false, write false on the line and rewrite the underlined portion of the statement so that it is true.

A device called an echo-sounder can determine the depth of the ocean.

Topographic maps of the seafloor made from ocean depth data reveal that the seafloor is almost completely flat.

Mid-ocean ridges are shorter than mountain ranges found on land.

Sequence the process of seafloor spreading.

The seafloor spreads at a mid-ocean ridge. Solid mantle material begins to _____. This material is _____ dense than the surrounding solid rock.

The liquid _____ rises through _____ in the crust and erupts from volcanic vents along the _____.

The magma, now called _____, cools, solidifies, and forms a rock called _____.

Magma continues to rise and solidify. It pushes the newly-formed _____ away from the _____. Younger, less dense, warmer rocks are found _____ the ridge. Older, denser, cooler rocks are found _____ the ridge.

Lesson 2 | Development of a Theory (continued)

Main Idea

I found this on page _____.

Development of a Theory

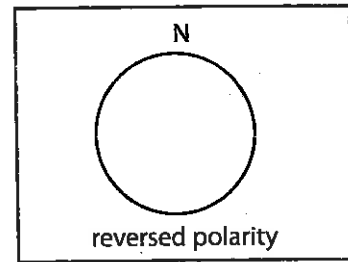
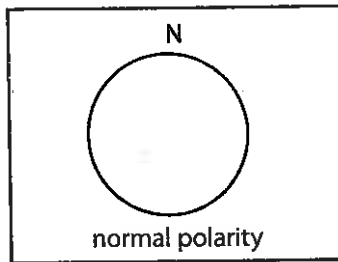
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Details

Summarize the importance of the idea of seafloor spreading.

Model normal polarity *and* reversed polarity by drawing arrows in the diagrams below.



Draw the seafloor on either side of a mid-ocean ridge. Show the rocks that formed during times of normal polarity in blue. Show those that formed during times of reversed polarity in red. Then write a sentence to explain how magnetic reversal confirms the idea of seafloor spreading.

Connect It Recall the questions that scientists had about Wegener's continental drift theory. Explain how seafloor spreading answers one or more of those questions.

Lesson 3 The Theory of Plate Tectonics

Predict three ideas that will be discussed in Lesson 3 after reading the headings. Write your predictions in your Science Journal.

Main Idea

The Plate Tectonics Theory

I found this on page _____.

I found this on page _____.

I found this on page _____.

Plate Boundaries

I found this on page _____.

Details

State the problem that scientists had with seafloor spreading.

Define plate tectonics. Explain what the word tectonic means as part of your definition.

Identify the layers of Earth involved in plate movements. Describe how these layers interact.

Layer	Description
_____	consists of the crust and the solid, uppermost mantle
Asthenosphere	

Organize information about divergent plate boundaries. Use arrows to show how plates move relative to one another at this type of boundary.

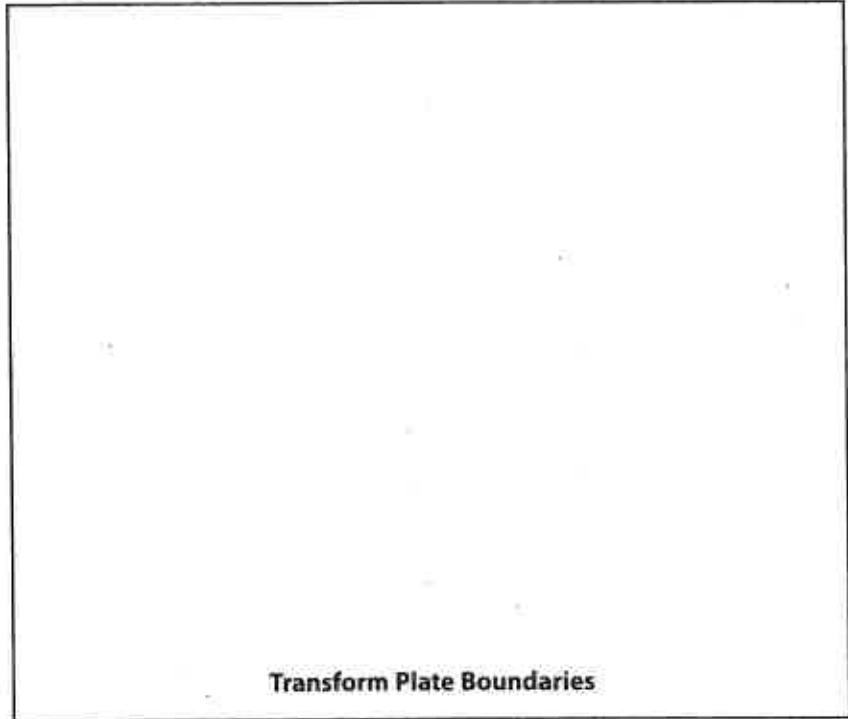
Type of Boundary	Description	Movement
Divergent		

Main Idea

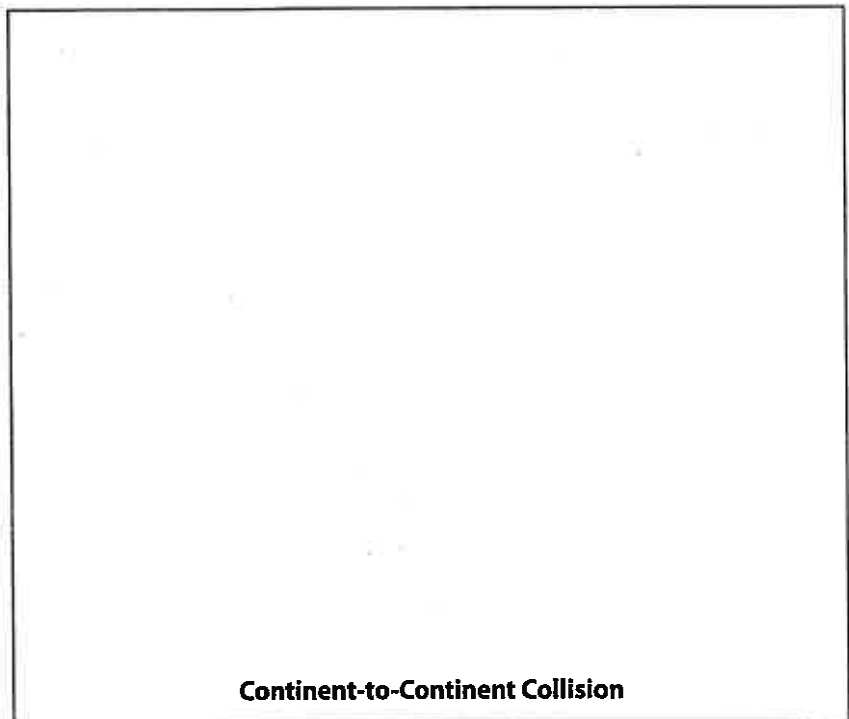
Details

Model transform plate boundaries. *Either write a description or illustrate this type of plate interaction. Include arrows to show the direction of movement. Label the plates and the structures that result from the collisions.*

I found this on page _____.



I found this on page _____.



Main Idea

Evidence for Plate Tectonics

I found this on page _____.

Plate Motion

I found this on page _____.

I found this on page _____.

Details

Identify evidence for plate motion provided by plate tectonics.

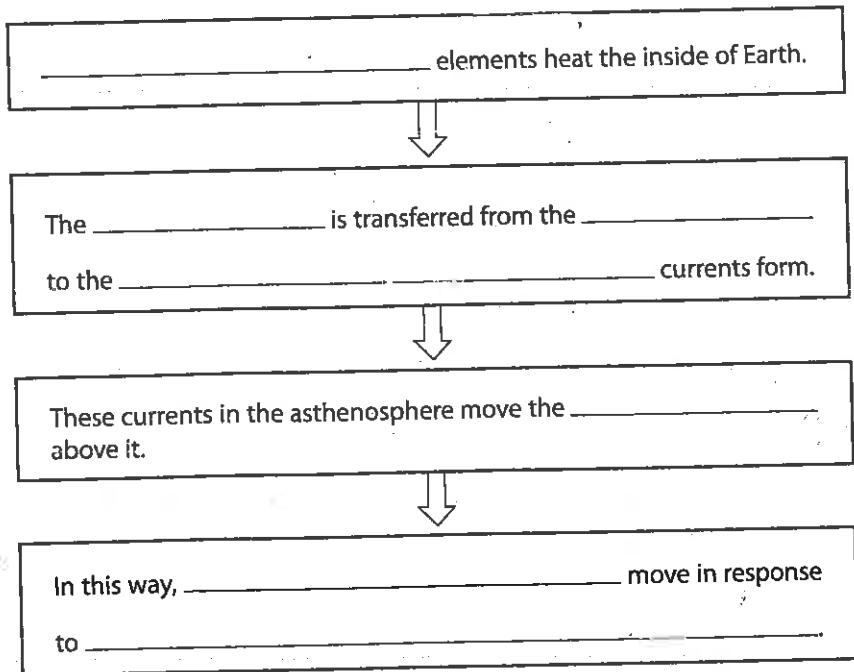
1. _____
2. _____
3. _____
4. _____

Define convection, and give an example of convection you have experienced in your everyday life.

Definition: _____

Example: _____


Explain how convection occurs in the mantle by completing the sequence diagram.



Main Idea

I found this on page _____

Details

 Describe the forces that cause plate motion.

Force	Description
Basal drag	
Ridge push	
Slab pull	

A Theory in Progress

I found this on page _____

Identify four questions scientists have about plate tectonics.

1. _____

2. _____

3. _____

4. _____

Synthesize It What explanation can you offer for several volcanoes located in a line on the seafloor erupting over time to form islands?
