

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		

Lesson 3 | The Theory of Plate Tectonics (continued)

Main Idea

I found this on page _____ .

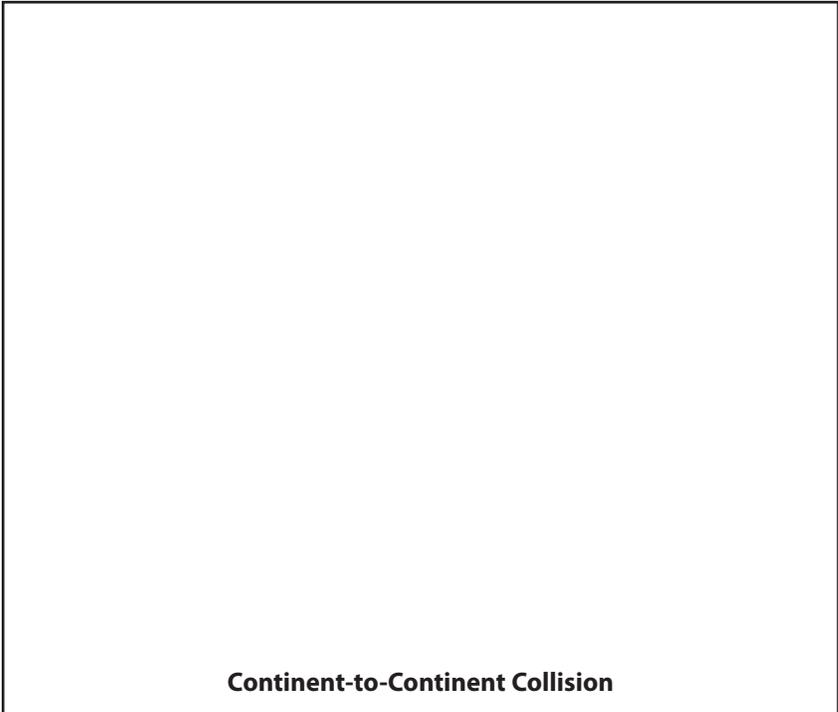
Details

 **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.*



Transform Plate Boundaries

I found this on page _____ .



Continent-to-Continent Collision

Lesson 3 | The Theory of Plate Tectonics (continued)

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.

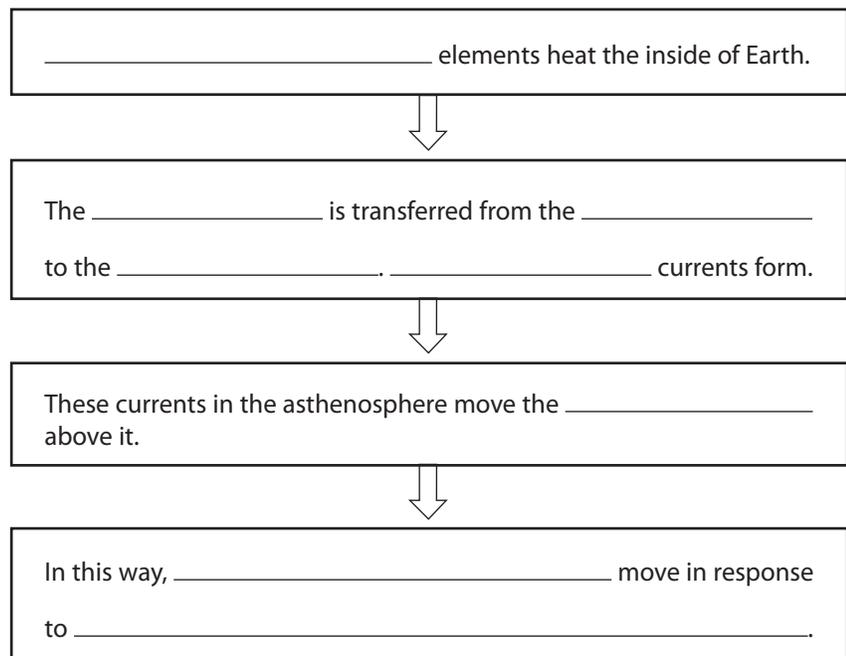
1. _____
2. _____
3. _____
4. _____

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.



Lesson 3 | The Theory of Plate Tectonics (continued)

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?

Chapter Wrap-Up

Now that you have read the chapter, think about what you have learned.

Use this checklist to help you study.

- Complete your Foldables® Chapter Project.
- Study your *Science Notebook* on this chapter.
- Study the definitions of vocabulary words.
- Reread the chapter, and review the charts, graphs, and illustrations.
- Review the Understanding Key Concepts at the end of each lesson.
- Look over the Chapter Review at the end of the chapter.



Summarize It Reread the chapter Big Idea and the lesson Key Concepts. Draw a world map showing how the continents might be arranged 100 million years from now. Label the landmasses on your map, and explain why you positioned them in the way that you did.

Challenge Suppose that you are designing a new scientific instrument to record or measure some geological data that previously could not be observed. Describe what your new super-technology could detect and how those discoveries might solve remaining mysteries of plate tectonics.