

## 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

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#### Plate Boundaries

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### 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

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### 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**

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**Continent-to-Continent Collision**

Lesson 3 | The Theory of Plate Tectonics (continued)

Main Idea

Details


Evidence for Plate Tectonics

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Plate Motion

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 **Identify** evidence for plate motion provided by plate tectonics.

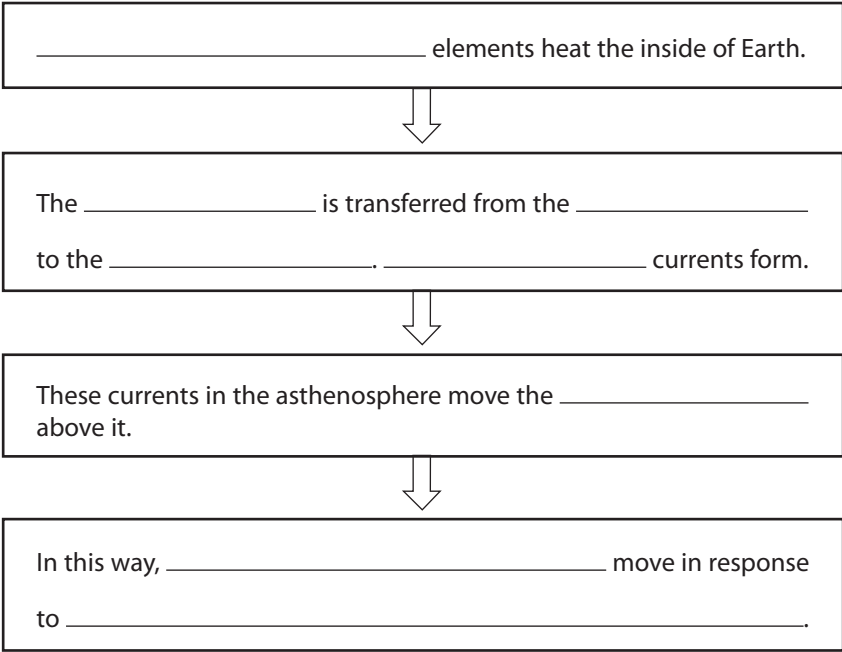
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**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

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### Details

 **Describe** the forces that cause plate motion.


Force	Description
Basal drag	
Ridge push	
Slab pull	

### A Theory in Progress

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**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?

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## 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.

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**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.