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

Details

The Plate Tectonics Theory

I found this on page _____.

State *the problem that scientists had with seafloor spreading.*

_____

_____

_____

I found this on page _____.

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

_____

_____

_____

_____

I found this on page _____.

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	

Plate Boundaries

I found this on page _____.

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 _____.

Transform Plate Boundaries

I found this on page _____.

Continent-to-Continent Collision

Main Idea

Details

Evidence for Plate Tectonics

I found this on page _____.

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

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

Plate Motion

I found this on page _____.

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

Definition: _____

_____

Example: _____

_____

_____

_____

I found this on page _____.

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

_____ elements heat the inside of Earth.

⇩

The _____ is transferred from the _____ to the _____. _____ currents form.

⇩

These currents in the asthenosphere move the _____ above it.

⇩

In this way, _____ move in response to _____.

Main Idea

I found this on page _____.

A Theory in Progress

I found this on page _____.

Details

Describe *the forces that cause plate motion.*

Force	Description
Basal drag	
Ridge push	
Slab pull	

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?

_____

_____

_____

_____

Review

Plate Tectonics

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.*