



## Lesson Plan Summary

### Magic Tree House #28: High Tide in Hawaii

#### Standing on Solid Ground??

#### DURING THIS BOOK STUDY, EACH STUDENT WILL:

- Discover facts about the layers of the earth.
- Understand that the movement of tectonic plates that make up the earth's crust cause earthquakes, tsunamis, and erupting volcanoes.
- Demonstrate knowledge about the earth's crust and what lies beneath the crust by completing activities provided in this lesson plan.
- Use supplemental materials to increase knowledge about the causes of natural disasters.
- Use facts learned about the layers of the earth to write a collaborative creative story.

#### COMMON CORE STANDARDS ADDRESSED:

##### Reading:

- Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
- Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

##### Writing:

- Write narratives to develop real or imagined experiences or event using effective technique, descriptive details, and clear event sequences.

##### Language Arts:

- Conventions of Standard English
- Knowledge of Language

##### Speaking and Listening:

- Comprehension and Collaboration
- Presentation of Knowledge and Ideas

28-1S312

Created by: Paula Henson, 2007 Magic Tree House Teacher of the Year Knoxville, Tennessee



## Lesson Plan

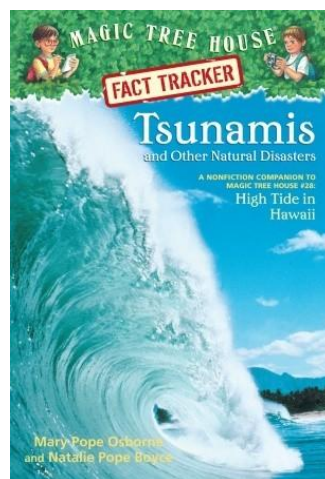
### Magic Tree House #28: High Tide in Hawaii

#### Standing on Solid Ground??

After reading High Tide in Hawaii, students will discover the beauty and magnificence of the Hawaiian Islands along with Jack and Annie but will also learn that Hawaii is a chain of volcanic islands that throughout history have caused some devastating natural disasters for this “Garden Paradise”. Strange things begin to happen as the two are exploring the sport of surfing. They soon discover that a tsunami is headed their way!

In order to explore the causes of natural disasters such as tsunamis, volcanoes, and earthquakes, students must have a basic understanding of what goes on beneath the earth’s surface. Lead your class into a study of the layers of the earth and the discovery that we are not really “standing on solid ground”. As a culminating activity at the end of the lesson, you will find directions that will allow your students to use their new knowledge as they become Jack or Annie and take the Magic Tree House on a journey to the center of the earth!

The earth is made up of four distinct layers. The outer layer on which we live is called the crust. It seems to us to be one solid piece but scientists have found that it is actually made up of different sections or tectonic plates that come in different sizes. They actually “float” on top of the second layer of the earth called the mantle. They fit together in somewhat the same way pieces of a jigsaw puzzle might. These plates move and collide causing earthquakes, tsunamis, and erupting volcanoes. The earth’s crust is made up of nine large plates and several smaller plates. Allow your students to learn more about the movement of these plates in the accompanying Fact Tracker, Tsunamis and Other Natural Disasters:



28-1LP312

Created by: Paula Henson, 2007 Magic Tree House Teacher of the Year Knoxville, Tennessee

Copyright © 2012, Mary Pope Osborne, Classroom Adventures Program, all rights reserved.

The following kid-friendly website will enable your class to learn more about how the movements of the earth's tectonic plates cause tsunamis:

<http://www.pbs.org/wnet/savageearth/animations/tsunami/>

**Materials:**

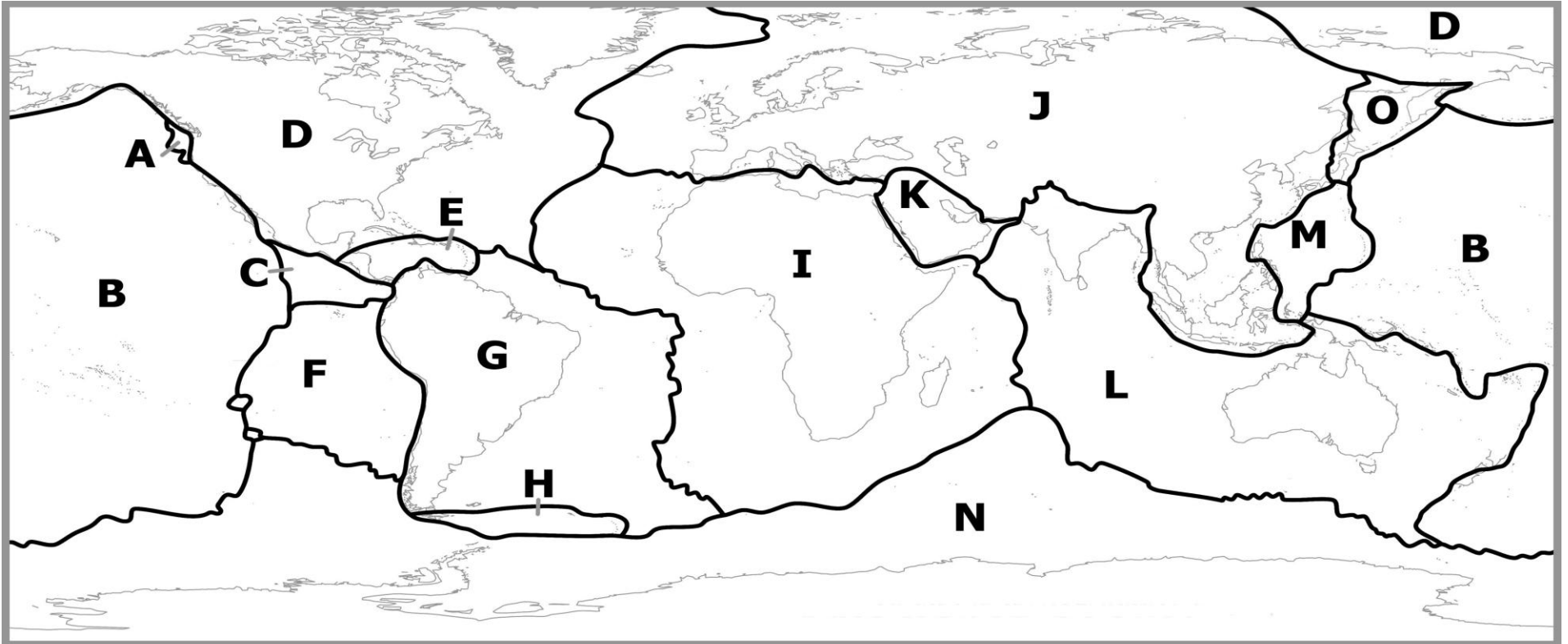
- Access to the book High Tide in Hawaii and the accompanying Fact Tracker, Tsunamis and Other Natural Disasters
- Tectonic Plates Puzzle Activity Sheet (provided)
- Layers of the Earth Activity Sheet (provided)
- Journey to the Center of the Earth Story Sheet (provided)

Every part of the Earth's surface is a tectonic plate. Use the following activity sheet to allow your students an opportunity to learn more about where the plate boundaries are and the names of the larger ones. Direct your students to follow the instructions on the activity sheets.

## Tectonic Plates Puzzle

Name: \_\_\_\_\_

The earth's crust is made up of tectonic plates that float or move causing earthquakes, tsunamis, and volcanoes to erupt. They fit together like pieces of a jigsaw puzzle. Use this activity sheet as a reference as you complete the second part of the activity.



- A) Juan de Fuca Plate
- B) Pacific Plate
- C) Cocos Plate
- D) North American Plate
- E) Carribbean Plate

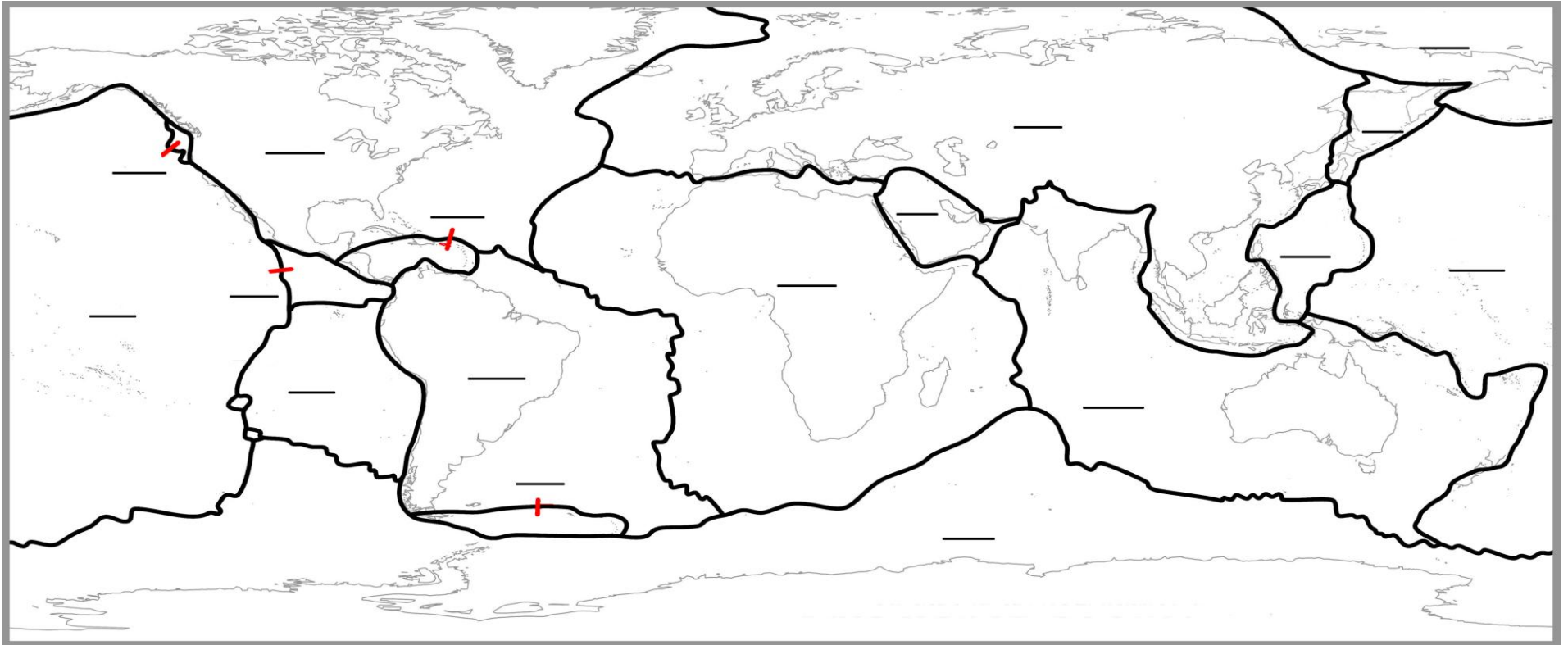
- F) Nazca Plate
- G) South American Plate
- H) Scotia Plate
- I) African Plate
- J) Eurasian Plate

- K) Arabian Plate
- L) Indo-Australian Plate
- M) Philippine Sea Plate
- N) Antartic Plate
- O) Okhotsk Plate

# Tectonic Plates Puzzle

Name: \_\_\_\_\_

Using the map on the first activity sheet as a guide, fill in the blanks on the map below with the letters that correspond with each tectonic plate that makes up our earth's crust. Write the names of each tectonic plate on the appropriate lines below the map.



A) \_\_\_\_\_  
B) \_\_\_\_\_  
C) \_\_\_\_\_  
D) \_\_\_\_\_  
E) \_\_\_\_\_

F) \_\_\_\_\_  
G) \_\_\_\_\_  
H) \_\_\_\_\_  
I) \_\_\_\_\_  
J) \_\_\_\_\_

K) \_\_\_\_\_  
L) \_\_\_\_\_  
M) \_\_\_\_\_  
N) \_\_\_\_\_  
O) \_\_\_\_\_

Which tectonic plate do you live on? \_\_\_\_\_

After learning facts about the earth's crust guide your students to learn more about what lies beneath it. Allow your class to label the diagram of the four basic layers of the earth and some of the properties of each (provided). Refer to the page 25 of the Fact Tracker, Tsunamis and Other Natural Disasters for a detailed look and description of the layers of the earth.

Visiting the following kid-friendly website with your class will present an interactive way to discover more about the layers of the earth and will allow your students to learn an entertaining song describing each layer!

<http://www.kidsgeo.com/geology-for-kids/0019-inside-of-earth.php>

## Layers of the Earth

Name: \_\_\_\_\_

Label the four basic layers of the earth and write a brief description on the lines provided. Refer to page 25 of Tsunamis and Other Natural Disasters to help you. Use the color key to help you color each layer.

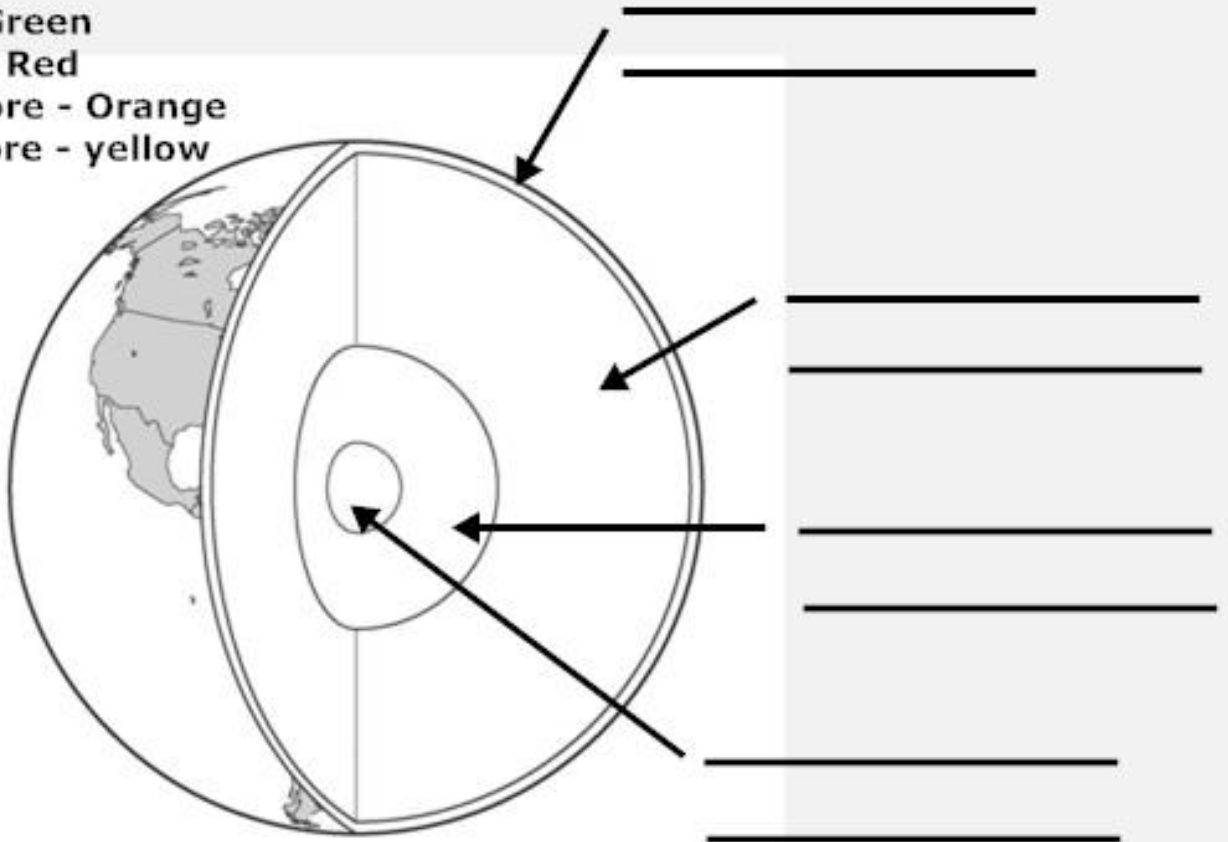
### Color Key

Crust - Green

Mantle - Red

Outer Core - Orange

Inner Core - yellow



Follow up with a Magic Tree house adventure to the center of the earth with Jack and Annie! Can you guess the mode of transportation? That's right! The Magic Tree House! Ask your students to pair up as Jack and Annie and create an adventure of their own. They can make up a title or you can suggest:

### **Journey to the Center of the Earth**

Ask pairs of students (Jack and Annie) to write a short story describing what would happen if they really could travel to the center of the Earth in the Magic Tree House. Include some explanation of how they would be able to withstand the scorching temperatures as they delve into the earth's layers. Perhaps a bit of "magic" is in order, complete with a "gift" from Morgan le Fay or an ancient scroll. The story should focus on describing what they see and encounter as they travel from the Earth's crust to the inner core. Encourage the use of adjectives that describe what they learned about each layer of the earth. Sentences should include descriptions of the composition, temperature, textures and other features or characteristics of the different layers. Maybe they have a mission to bring something back from the depths of the earth to break a spell? Encourage them to be creative but also accurate in the descriptions of the layers of the earth.

Students may use the following story sheet to record their adventures. Be sure to allow time to share stories with classmates!



