# Science Booklets

Differentiated & Student Centered

# Earthquakes

The Owl TEACHER

# Teacher's Page

Unfortunately, with the large demands on reading and math from Common Core, science is often pushed to the side. If your district is like mine, you often have very little time to dedicate to science, yet are still expected to fully cover the entire curriculum. This packet was created to help save time and to cover the all important science concepts - all while still meeting the nonfiction criteria of Common Core.

In this packet you will find a mini-book for students to assemble and explore the critical science concepts. It can be used to teach, reinforce, and/or challenge students, all while meeting their needs and learning styles. The reading page has been differentiated for your students with one being a higher level (HL) and the other being a lower level (LL).

I personally use all of my products in my classroom and can testify to the effectiveness of them.

Easy Use:

*Print pages 3-5 single sided (two sided copying will not work). Also print page 9 & 10 for station use.
*After making class copies, provide each student with scissors and a glue stick. You can also staple or tape if you prefer.
*Have students color before copying - including the tabs. This makes the piece look attractive.
*Have students cut out all flipbook pages. The cover page goes first. Then the students should line up the tabs for each page, in view, similar to steps.
*Have students run a line of glue along the left edge of each sheet. When finished the final product should resemble a small tabbed notebook.
*Have students complete each page individually, in pairs, in groups, or as a whole class. This can also be used in small groups with your direction.

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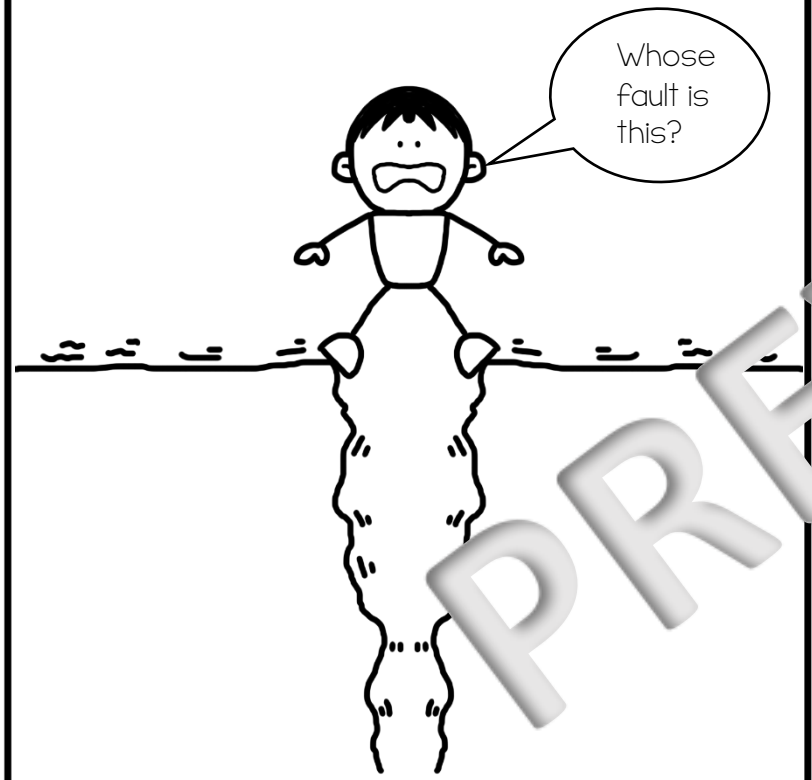
# Earthquakes




**Scientist:** _____

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# Vocabulary

Vocabulary

**Directions**: Read each clue and write the corresponding word on the line.

| | |
|---|---|
| Fault | Landslides |
| Tsunami | Earthquake |
| Seismograph | Plate Tectonics |

1.) I [illegible] crack in the Earth's crust. Who am I? _____

2.) I am the Earth's plates that are always moving around. Who am I? _____

3.) I measure the size and intensity of waves sent out from an earthquake. Who am I? _____

4.) I can cause massive destruction on land after an earthquake on the ocean floor occurs. Who am I? _____

5.) I am the movement of rock, soil, and debris down a slope. Who am I? _____

6.) I am the violent shaking of the Earth's surface after plates shift and release energy. Who am I? _____

PREVIEW

# Reading

**Directions:** Read the sheet titled "Whose Fault Is It Anyway?" and then answer the following questions with complete sentences. Be sure to support your answers.

1.) What causes an earthquake to occur?

_____

_____

_____

2.) How can an earthquake be both destructive (destroying) and constructive (creating)?

_____

_____

_____

3.) Where do most earthquakes occur?

_____

_____

_____

Reading

# Investigation

**Directions:** Follow the directions on the Investigation sheet and then write your response below.

1.) Describe what happened. Be sure to include all your observations.

_____

_____

_____

2.) What caused this (the events in number 1 above)?

_____

_____

_____

3.) How is this like an earthquake occurring?

_____

_____

_____

_____

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Investigation

PREVIEW

# Drawing

**Directions:** In the reading sheet "Whose Fault Is It Anyway," it described several things that can be a result of an earthquake. Draw at least two below. Include a caption describing your illustration.

## The Result of Earthquakes

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Drawing

# Journal

**Directions:** Read the prompt below and respond with deep thinking. Use the checklist at the bottom to make sure you included proper writing skills.

Why is it important to understand earthquakes?

_____

_____

_____

_____

_____

_____

_____

_____

_____

**Excellent Writing Checklist:**

Did you remember...

- Capitals
- Spelling
- End marks
- Complete sentences

Journal

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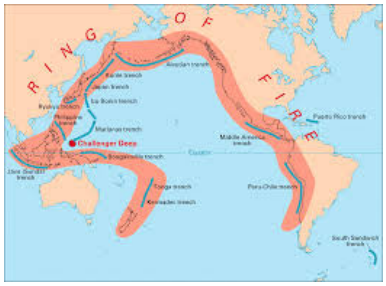
PREVIEW

# Whose Fault Is It Anyway?

Imagine that you are sitting quietly, reading a book, when all of a sudden you hear a rumbling sound and everything around you starts to shake tremendously. It would definitely create an uneasy feeling inside you. You mumble to yourself, "What is going on?" It's an earthquake!

The surface of the earth is made up of plates that fit together like a puzzle. These plates are always moving. Typically these plates move around slowly, bumping into one Another. The movement of these plates are called **plate tectonics**, while the edges of them are plate boundaries. Along the boundaries of these plates are faults. **Faults** are cracks in the Earth's surface where earthquakes typically occur. Generally, the edges of plates get stuck on one another like Velcro, while the rest of the plate keeps moving. Eventually the stuck part will release energy, causing an **earthquake**. All this energy will move out like a rock being thrown into a pond.




Earthquakes are most common along the "Ring of Fire" where many plates come together.

Earthquakes are measured using an instrument called a **seismograph**. This device measures how large an earthquake was (the magnitude) and the intensity of it. Seismologists can also determine the epicenter, or the specific location where the earthquake occurred. When the epicenter is located along the ocean's floor, it can cause a tsunami. A **tsunami** is a large wave that moves onto land and causes mass destruction. This can also lead to flooding in these areas. Earthquakes can cause major damage to buildings, roads, and bridges near the epicenter. Earthquakes can even create **landslides**, or the movement of soil, rock, and debris down a slope.

This earthquake caused minor damage.

Not all earthquakes cause major damage. Some earthquakes are weak and they only create a slight shaking. Earthquakes can also be constructive, meaning they create new land forms. For instance, when two plates collide, the crust crumbles the rock into wavy folds. It is believed this is how the Appalachian mountains in North America were created.

Regardless of whether earthquakes are strong or weak with intensity, they can create changes to the Earth's surface. The Earth is always changing and it's likely that everywhere you look, an earthquake shaped it.

PREVIEW

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# Earthquake Simulation - Teacher's Page

## For this simulation you will need the following:

- Cake pan
- 2 strips of cloth, both extending approximately 3 inches longer than your cake pan. It can be either the length or width of the pan.
- Damp soil
- Materials to represent a town such as small houses, trees, so on. I recommend using Monopoly pieces or small toys from a dollar store.

## Set Up:

- Provide all materials in a specific location or center.
- Include the Investigation page. I would recommend laminating it for future use.

PREVIEW

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