

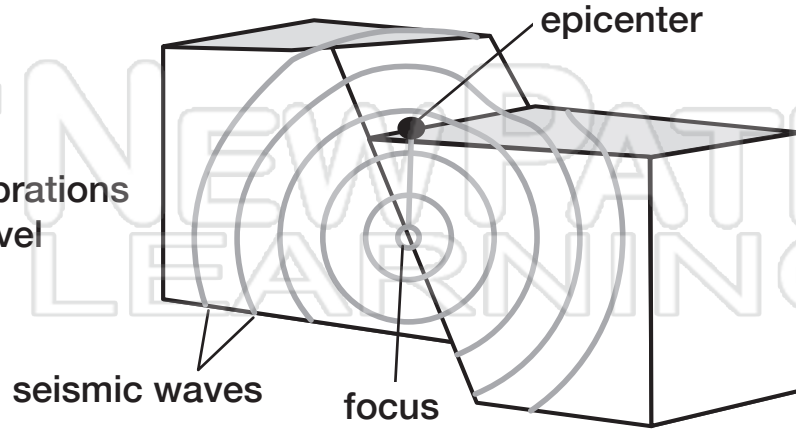


Earthquakes

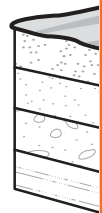
Name _____ Class _____ Date _____

The movement of **tectonic plates** creates forces that push and pull on the Earth's crust. When crustal rock breaks, **stored energy** is released and this energy travels through the Earth. This sudden release of energy is called an **earthquake**.

Seismic waves are the vibrations from earthquakes that travel through the Earth.



A fault



foot

A normal

fault moves **down** relative to the **footwall**.

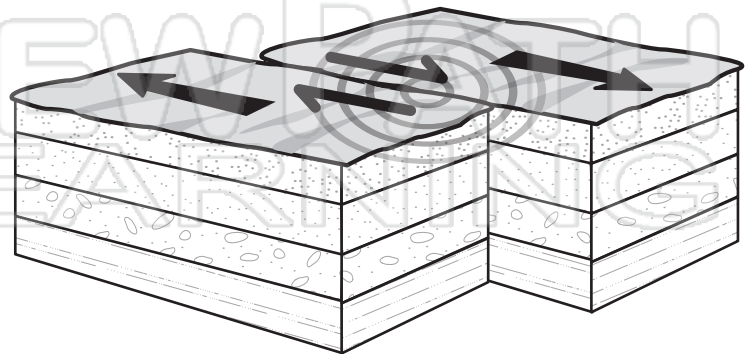


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relative to the **footwall**, a **reverse fault** is formed.

A **strike-slip fault** forms when rocks **move past** each other **horizontally**.





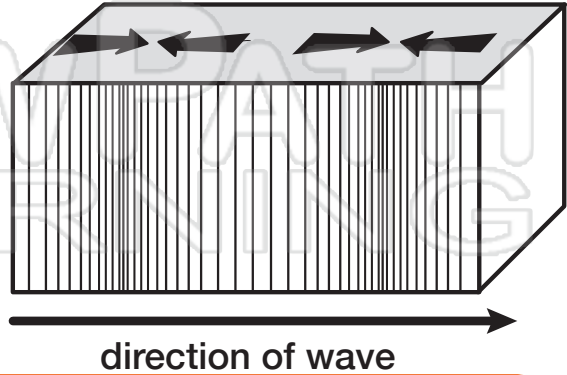
Earthquakes

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Seismic Waves

Seismic waves are the **vibrations** from earthquakes that travel through the Earth and are recorded on instruments called **seismographs**. There are three different types of seismic waves released by an earthquake.

P-waves or **primary waves** are the first energy waves released. They are the **fastest** of the seismic waves and can travel through solids, liquids and gases. P-waves move back and forth, first **compressing** then **stretching** the rock.



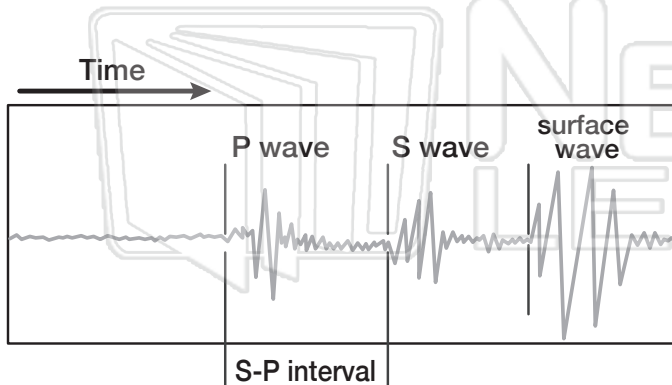
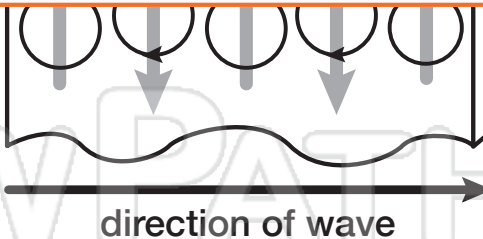
S-waves or **secondary waves** are the **slowest** seismic waves and are called **shear waves**. They move **side to side** or **up and down**, perpendicular to the direction of wave travel. S-waves can only travel through **solids** because they **stretch and compress** the rock.



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The **S-wave** moves **side to side** or **up and down**, perpendicular to the direction of wave travel. S-waves can only travel through **solids** because they **stretch and compress** the rock.



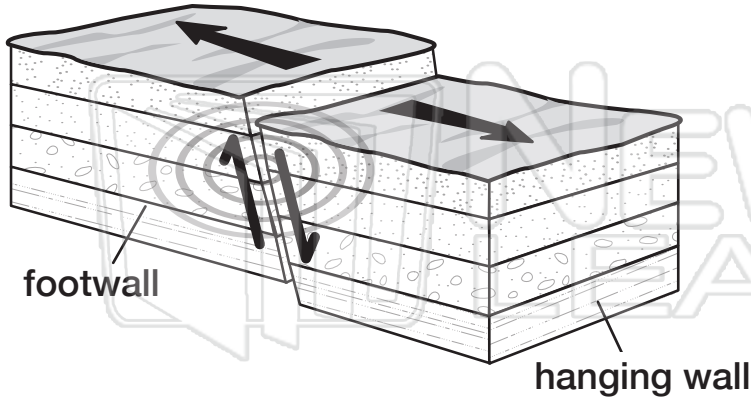
The recording of seismic waves is called a **seismogram**. Seismologists can use them to determine an earthquake's start time and its **epicenter**.



Earthquakes

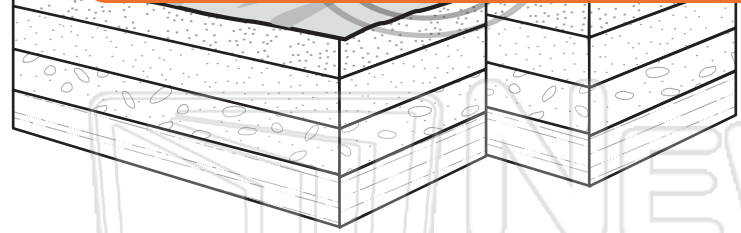
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A **fault** is created when tension in Earth's crust pulls the rock layers apart. Identify and describe each type of fault below.



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Earthquakes

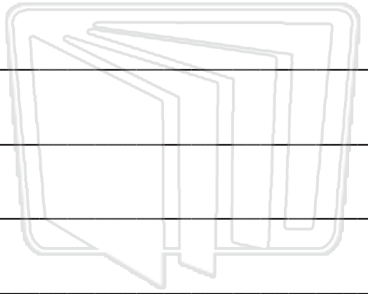
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Complete the graphic organizer below. Describe the 3 different types of seismic waves.

P-waves

S-waves

Surface waves

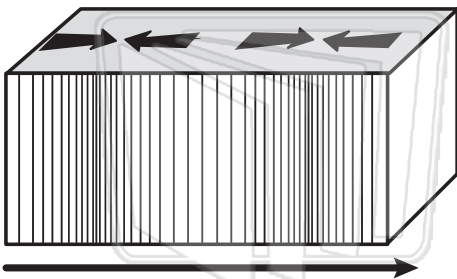


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LEARNING

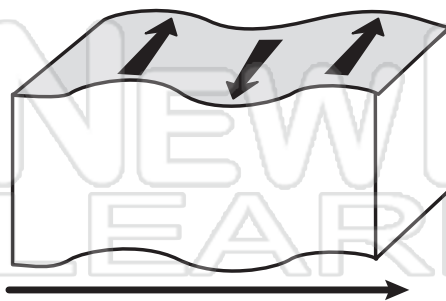


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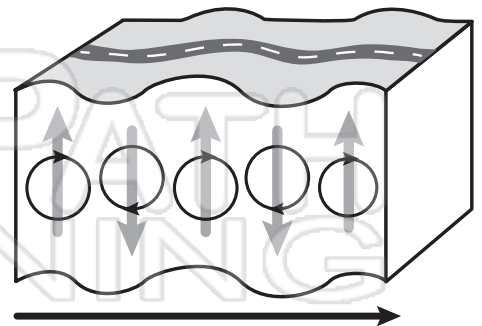
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direction of wave



direction of wave



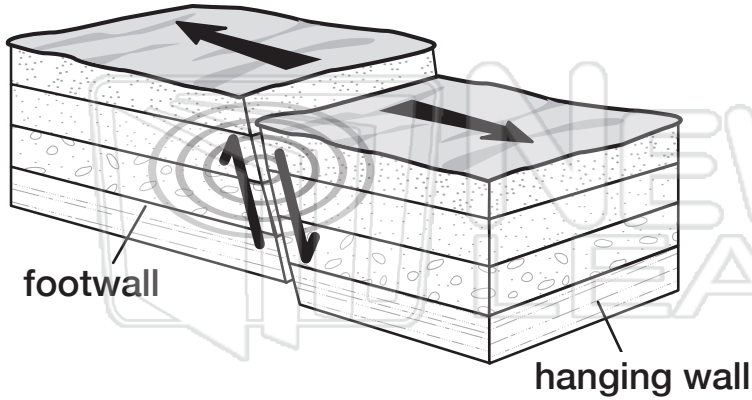
direction of wave



Earthquakes

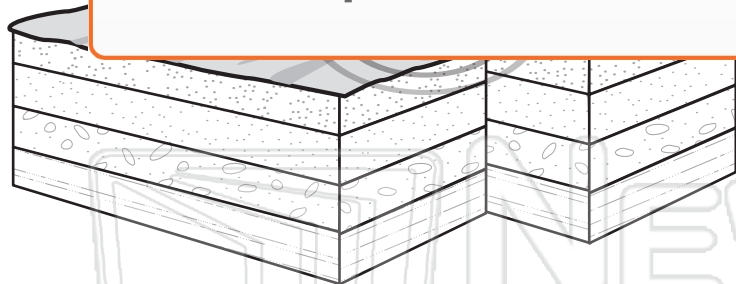
Answer Key Example

A **fault** is created when tension in Earth's crust pulls the rock layers apart. Identify and describe each type of fault below.



Normal Fault

Forms when a **hanging wall** moves **down** relative to the **footwall**.

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Strike-slip Fault

Forms when rocks **move past** each other **horizontally**.



Earthquakes

Answer Key Example

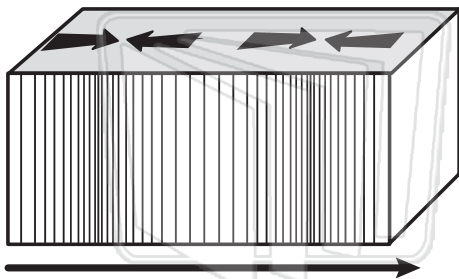
Complete the graphic organizer below. Describe the 3 different types of seismic waves.

P-waves	S-waves	Surface waves
First energy waves released from earthquake. Fastest seismic waves. They move back and	Second energy waves released. Slower than P-waves. They move in an S pattern through rock creating shear	Slowest and most destructive seismic waves. They travel along the surface of Earth's crust in a



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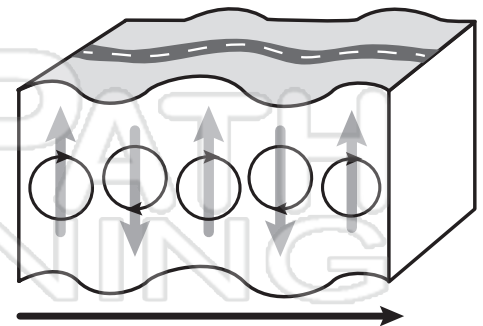
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direction of wave



direction of wave



direction of wave