

AFTERSCHOOL TRAINING TOOLKIT

Integrating Science Across the Curriculum

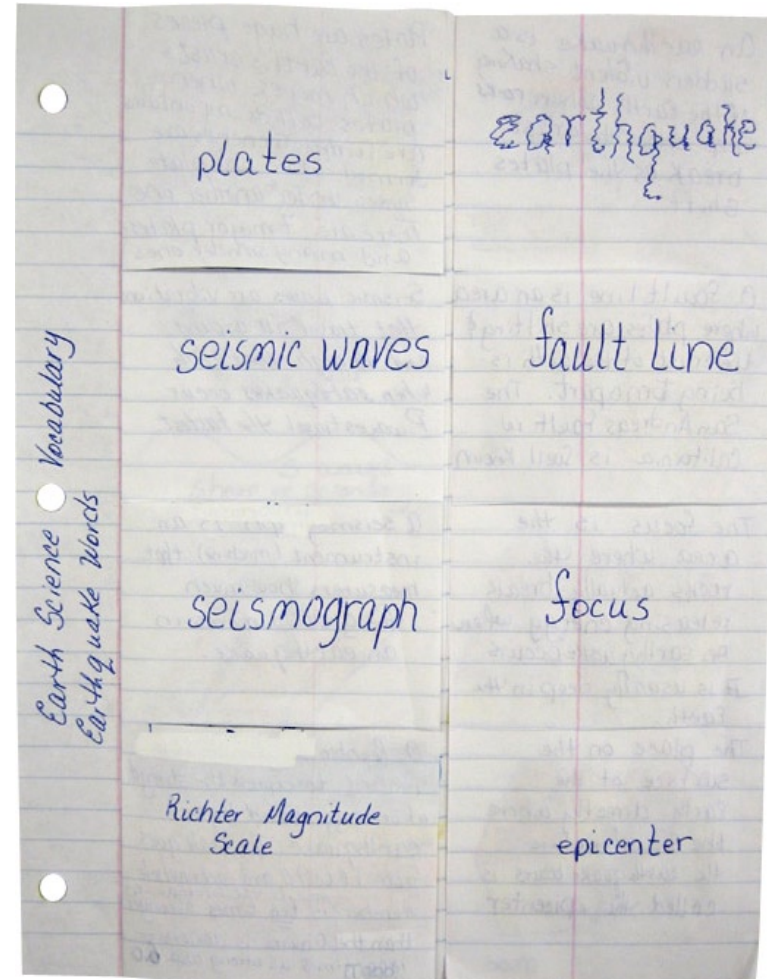
Exploring Earthquakes: Vocabulary Word Graphic Organizer

Description:

Science texts often include new vocabulary words and concepts that students may find difficult to understand. Graphic organizers can help students visualize and categorize complex concepts and information. In this example, vocabulary words associated with earthquakes were chosen: plates, earthquake, seismic waves, fault line, seismograph, focus, Richter Magnitude Scale, and epicenter. Other words were found in *The Restless Earth* and *The Magic School Bus Inside the Earth*.

Students create the foldable by cutting and gluing notebook paper, as illustrated. They write the vocabulary word on the outside of the flap and its definition on the inside. Then they create a picture or illustrations that will help them visualize what the word means. In doing this lesson, have students create the vocabulary foldable, and then attempt the more complex Earth foldable.

The 3-D graphic organizers (called "foldables") presented in this lesson were adapted from the work of Dinah Zike.



Outside front.

Plates are huge pieces of the Earth's crust which moves. When plates collide mountains are formed. Trenches are formed when one plate slides under another one. There are 7 major plates and many smaller ones.



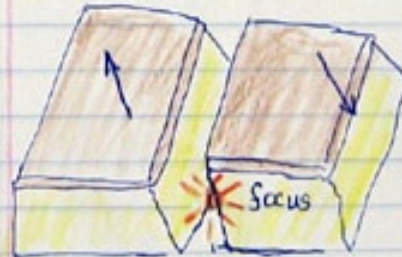
earthquake

Earth Science Vocabulary
Earthquake Words

seismic waves

fault line

seismograph



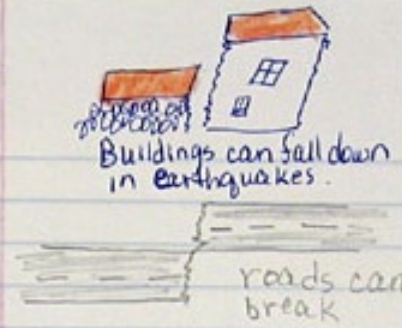
The focus is the area where the rocks actually break releasing energy when an earthquake occurs. It is usually deep in the Earth.

A Richter Magnitude Scale is used to express the strength of energy released by an earthquake. The scale goes from 1.0 to 9.0 and each whole number is ten times stronger than the previous one. So a 9.0 quake is 10x10x10x10x10x10x10x10x10 times as strong as a 6.0 quake.

Richter Magnitude	Damage
8.0-9.0	GREAT! Total Destruction
7.0-7.9	Major Widespread Damage
6.0-6.9	Strong Damage
5.0-5.9	Moderate slight damage
3.0-5.0	Minor felt damage
1.0-3.0	-

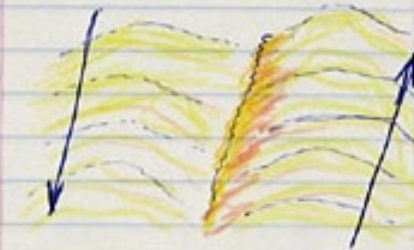
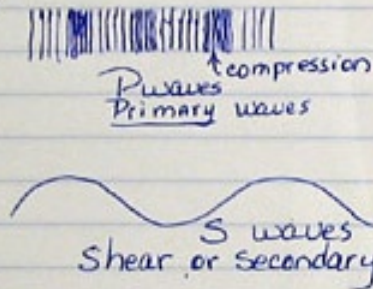
epicenter

Plates are huge pieces of the Earth's crust which moves. When plates collide mountains are formed. Trenches are formed when one plate slides under another one. There are 7 major plates and many smaller ones.



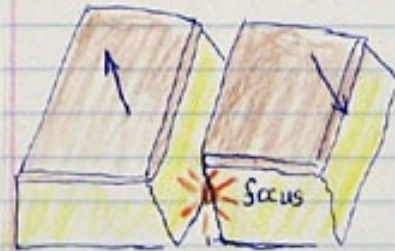
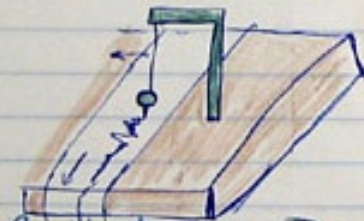
An earthquake is a sudden violent shaking of the Earth when rocks deep within the crust break as the plates shift.

Seismic waves are vibrations that travel all around and through the Earth when earthquakes occur. P waves travel the fastest.



A fault line is an area where plates are shifting & the crust of the Earth is being torn apart. The San Andreas Fault in California is well known.

A seismograph is an instrument (machine) that measures how much the ground moves in an earthquake.



The focus is the area where the rocks actually break releasing energy when an earthquake occurs. It is usually deep in the Earth.

A Richter Magnitude Scale is used to express the strength of an energy released by an earthquake. The scale goes from 1.0 to 9.0 and each whole number is ten times stronger. So a 9.0 quake is 10x10x10x1000 times as strong as a 6.0 quake.

Richter Magnitude	Damage
8.0-9.0	Great! Total Destruction
7.0-7.9	Major Widespread Damage
6.0-6.9	Strong Damage
5.0-5.9	Moderate slight damage
3.0-5.0	Minor felt no damage
1.0-3.0	-

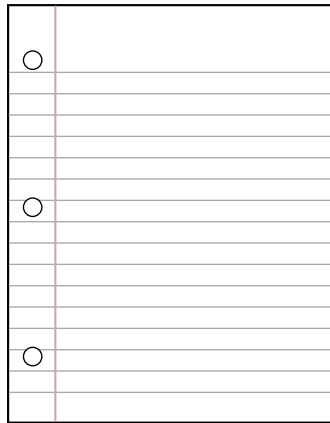


The place on the surface of the Earth directly above the focus (or where the earthquake occurs) is called the epicenter.

Mood

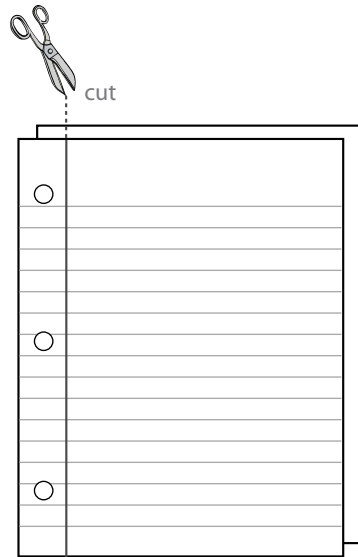
Inside, all flaps open.

Instructions:



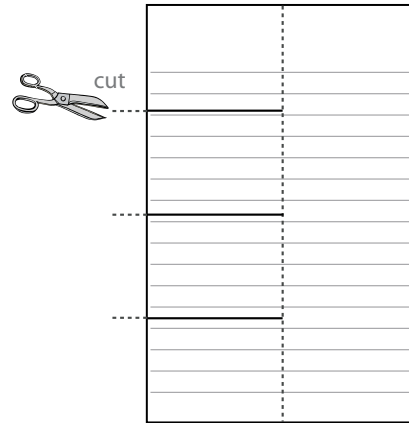
Step 1.

Start with a sheet of lined paper for the backing.



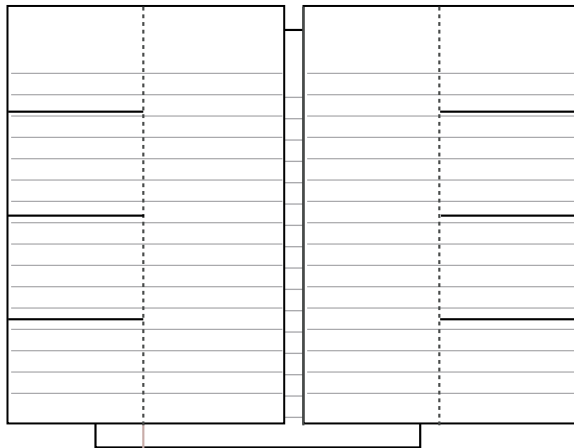
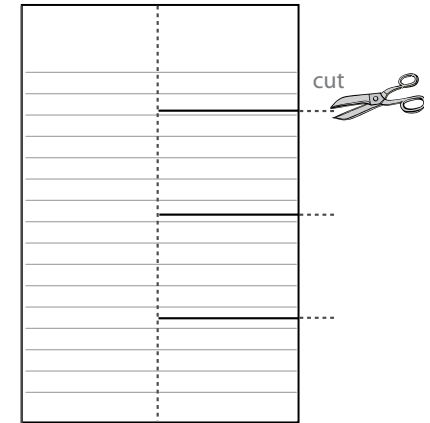
Step 2.

Trim the left edge off two additional sheets of paper.



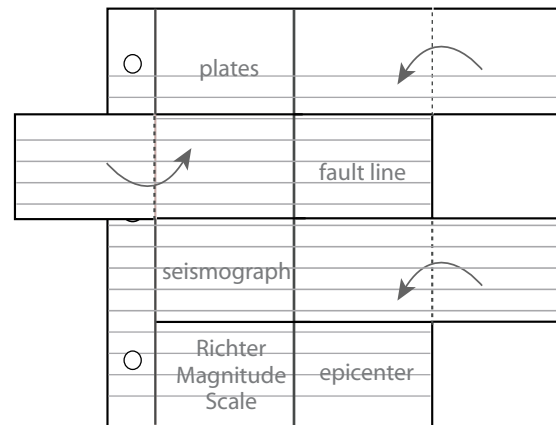
Step 3.

Fold both sheets vertically down the center. Then cut one side of each into four even horizontal sections.



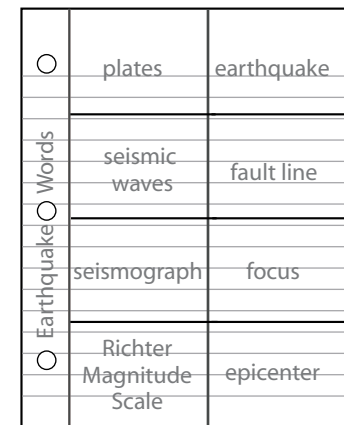
Step 4.

Glue the two sheets onto the backing page. Line up the fold of the left page about 1" from the left edge of the backing page. Line up the right page fold with the right edge.



Step 5.

Fold the eight flaps into the middle and label.



Outside completed view.