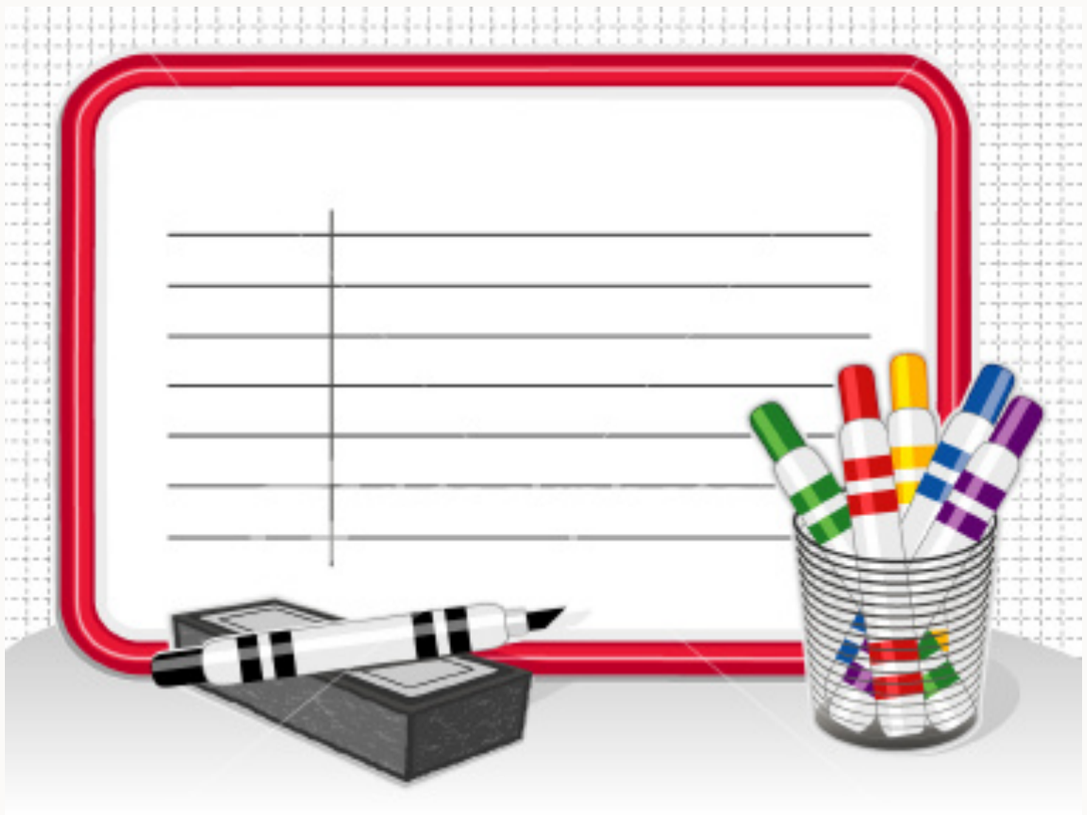
EARTH'S CRUST

WHAT IS AN EARTHQUAKE?

Whiteboard Activity:

- As a group, write or draw your answer

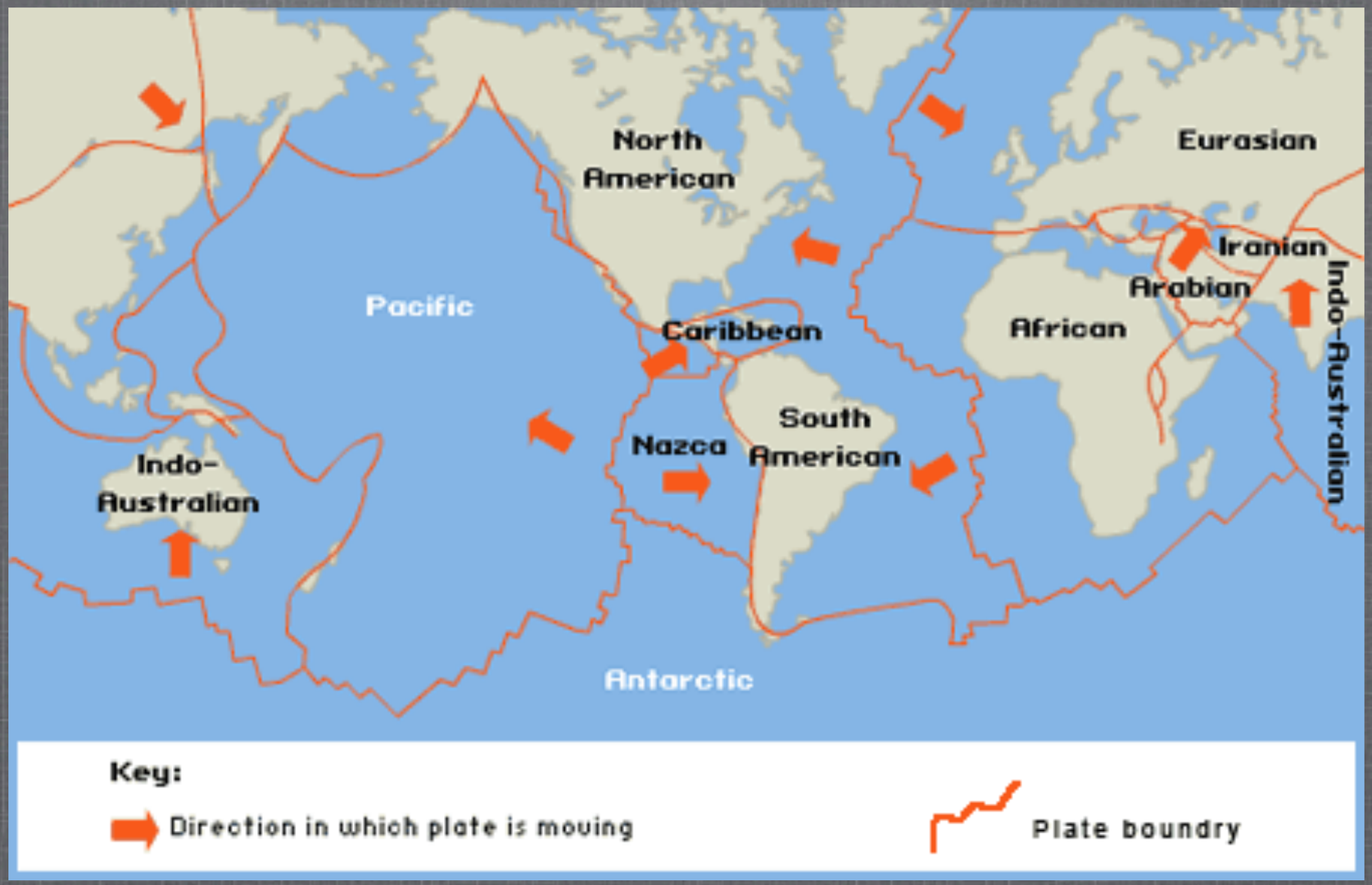
5 min



WHAT IS AN EARTHQUAKE?

A disturbance and movement of Earth's crust due to a build-up of stress or pressure.

but why does this happen??



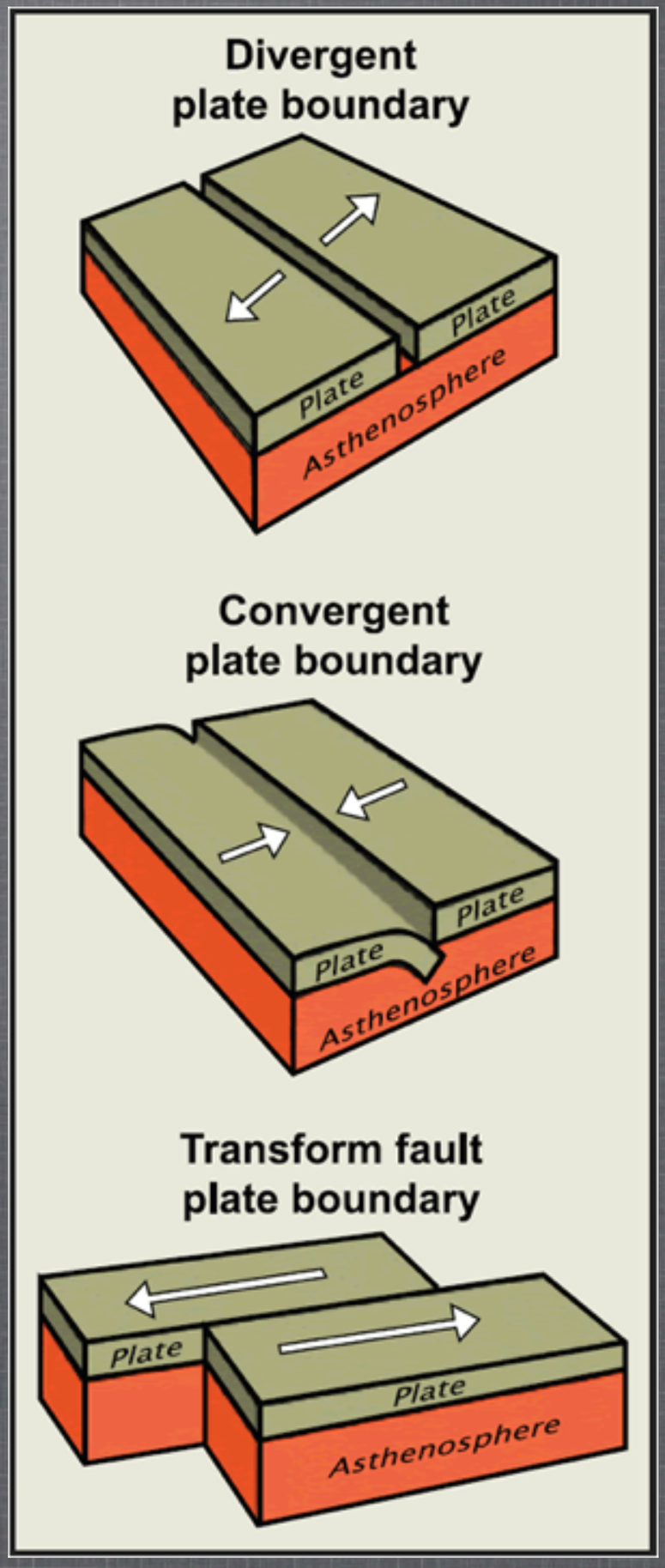
The Earth's plates move along plate boundaries. Plates do not always move smoothly and sometimes they get stuck. This causes pressure to build up.

TYPES OF MOVEMENT

Type 1: **Divergent** (pulling apart)

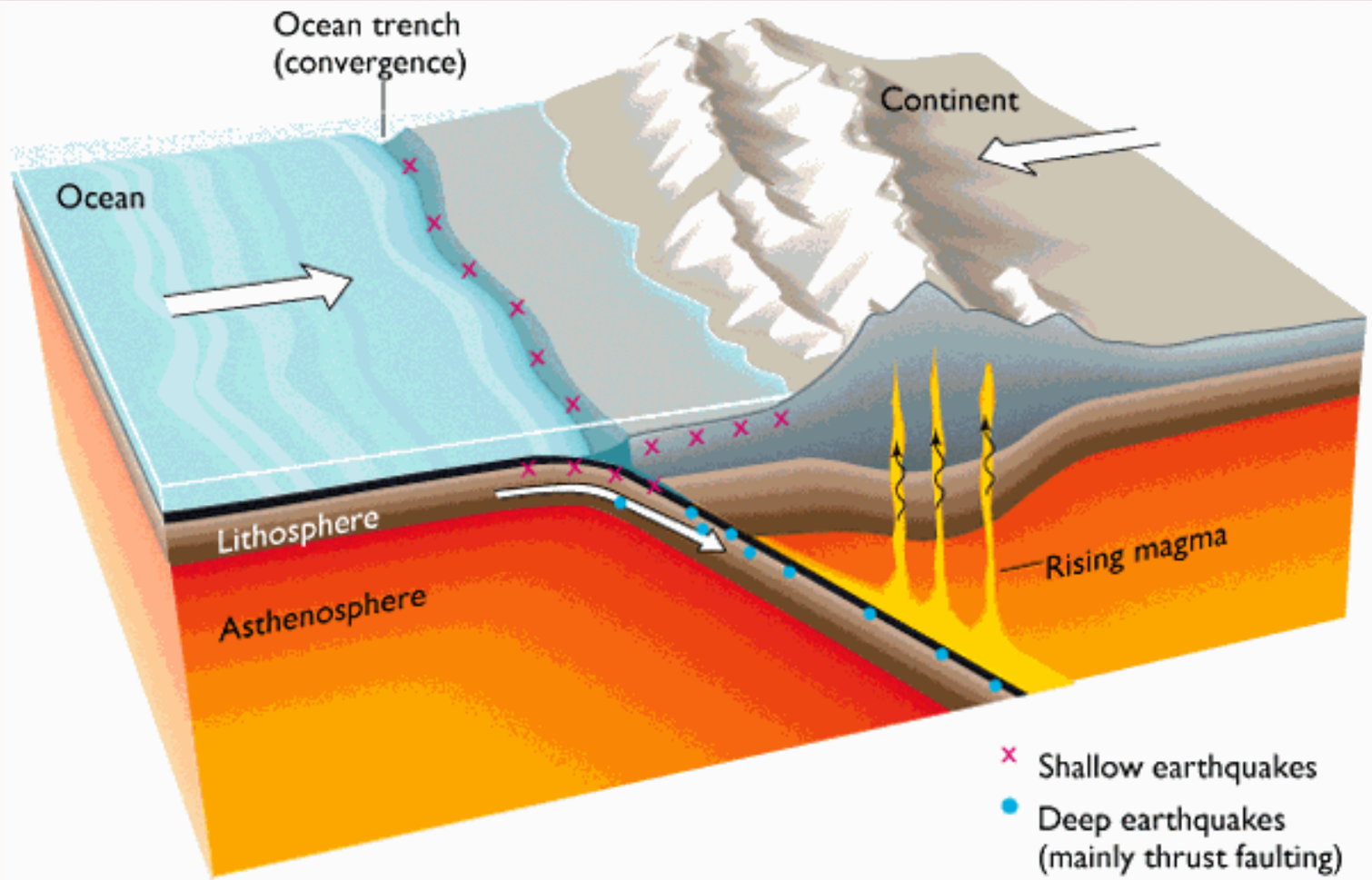
Type 2: **Convergent** (pushing together)

Type 3: **Transform Fault** (sliding past each other)



Challenge

MOVEMENT TERMINOLOGY



Subduction: one piece of rock gets pushed under the other and dips deep into the Earth.

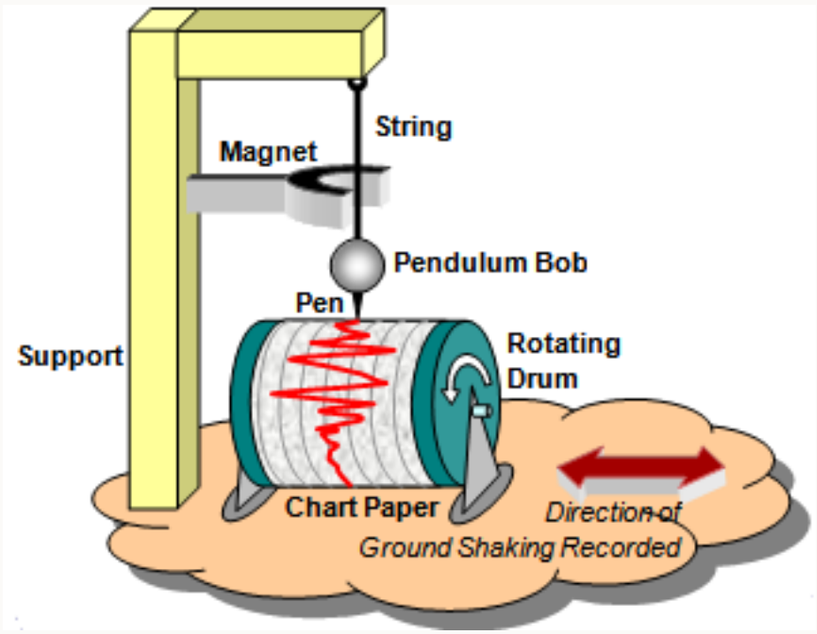
MOVEMENT TERMINOLOGY

<u>Fault Lines</u>: the area where the rocks break and move

Ex: San Andreas Fault

MEASURING EARTHQUAKES

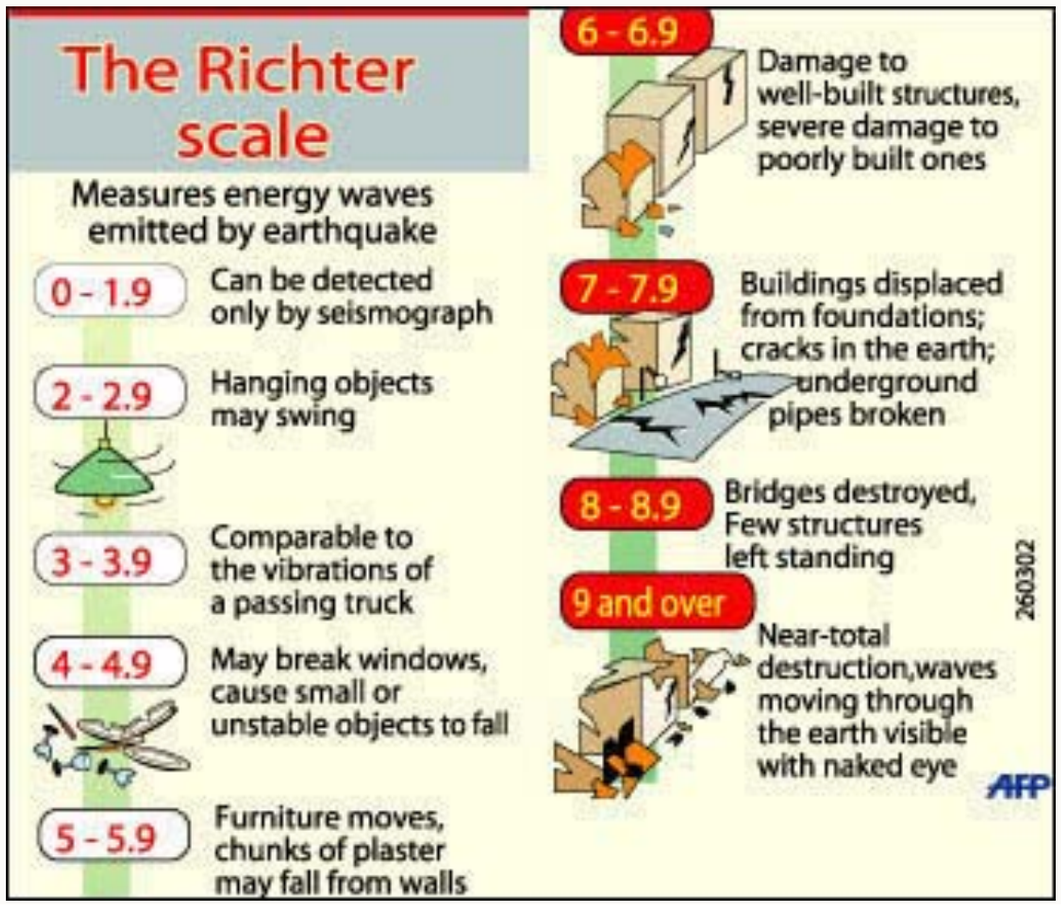
Scientists called **seismologists** measure earthquakes using a device called a **seismograph**.



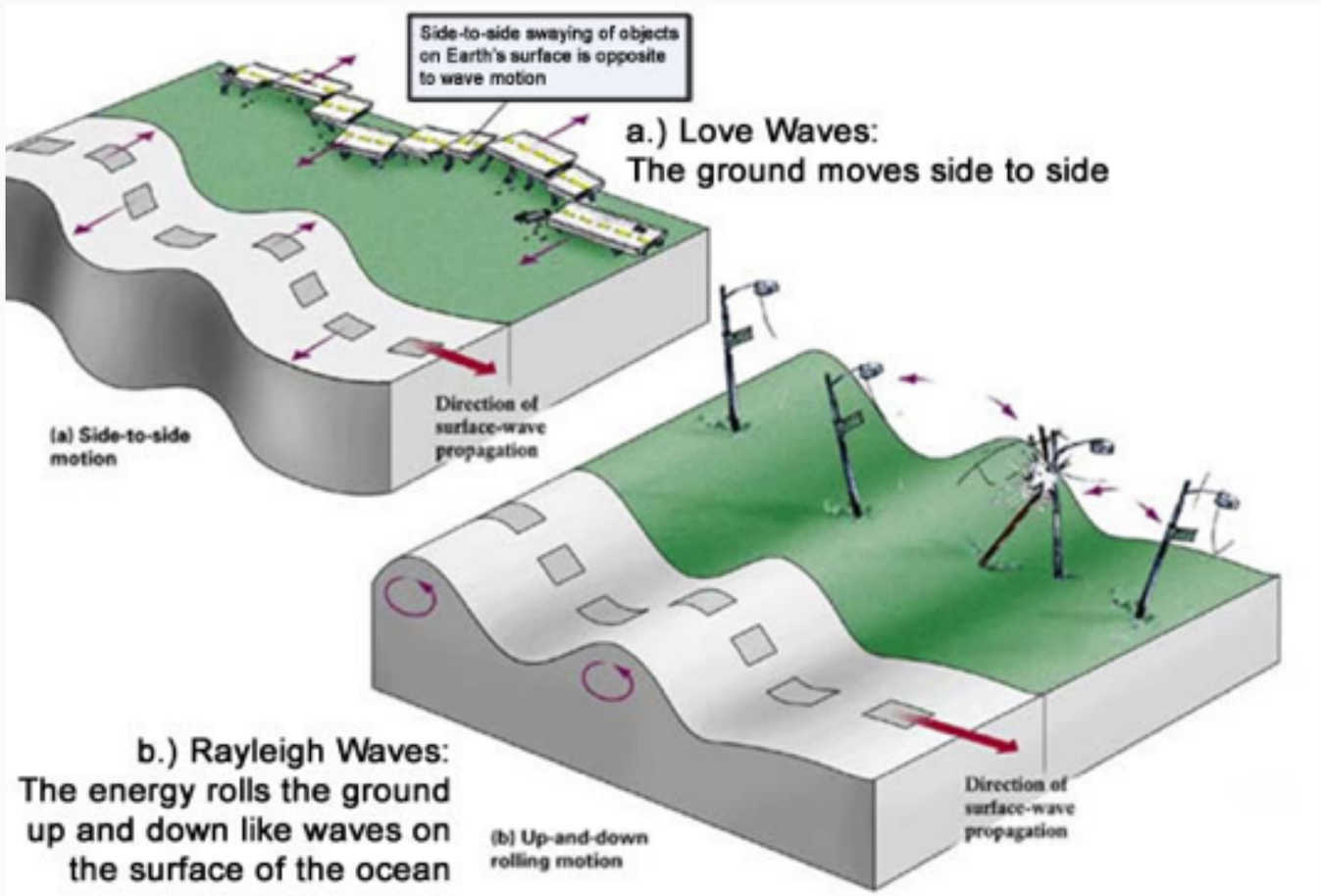
Seismographs must be attached to **bedrock** (the solid rock beneath the soul) in order to feel the vibrations from an earthquake.

MEASURING EARTHQUAKES

The **Richter Scale** is used to describe the **magnitude** (strength) of the earthquake.



EARTHQUAKE WAVES



Seismic Waves: energy waves that travel outward from the source.

Aftershocks: smaller earthquakes that produce even more ground movement.

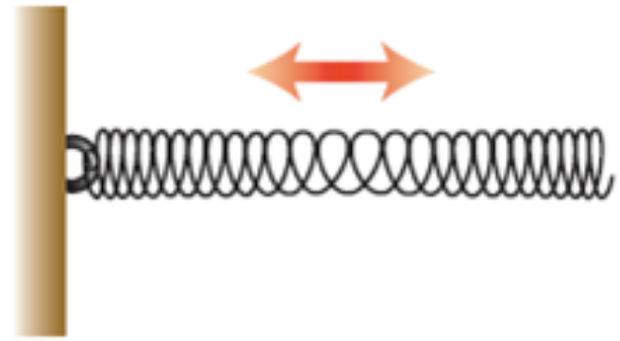
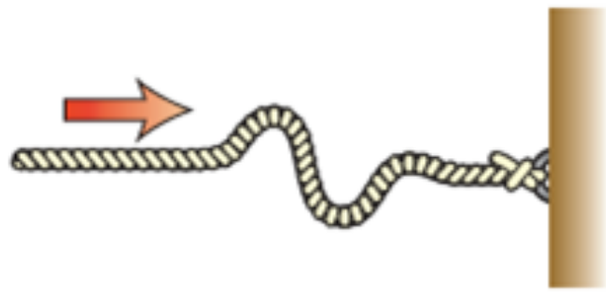
TYPES OF WAVES

- Slinky Activity: How Do Earthquake Waves Travel?

- Pg. 317

TYPES OF WAVES

Table 12.3 Types of Seismic Waves

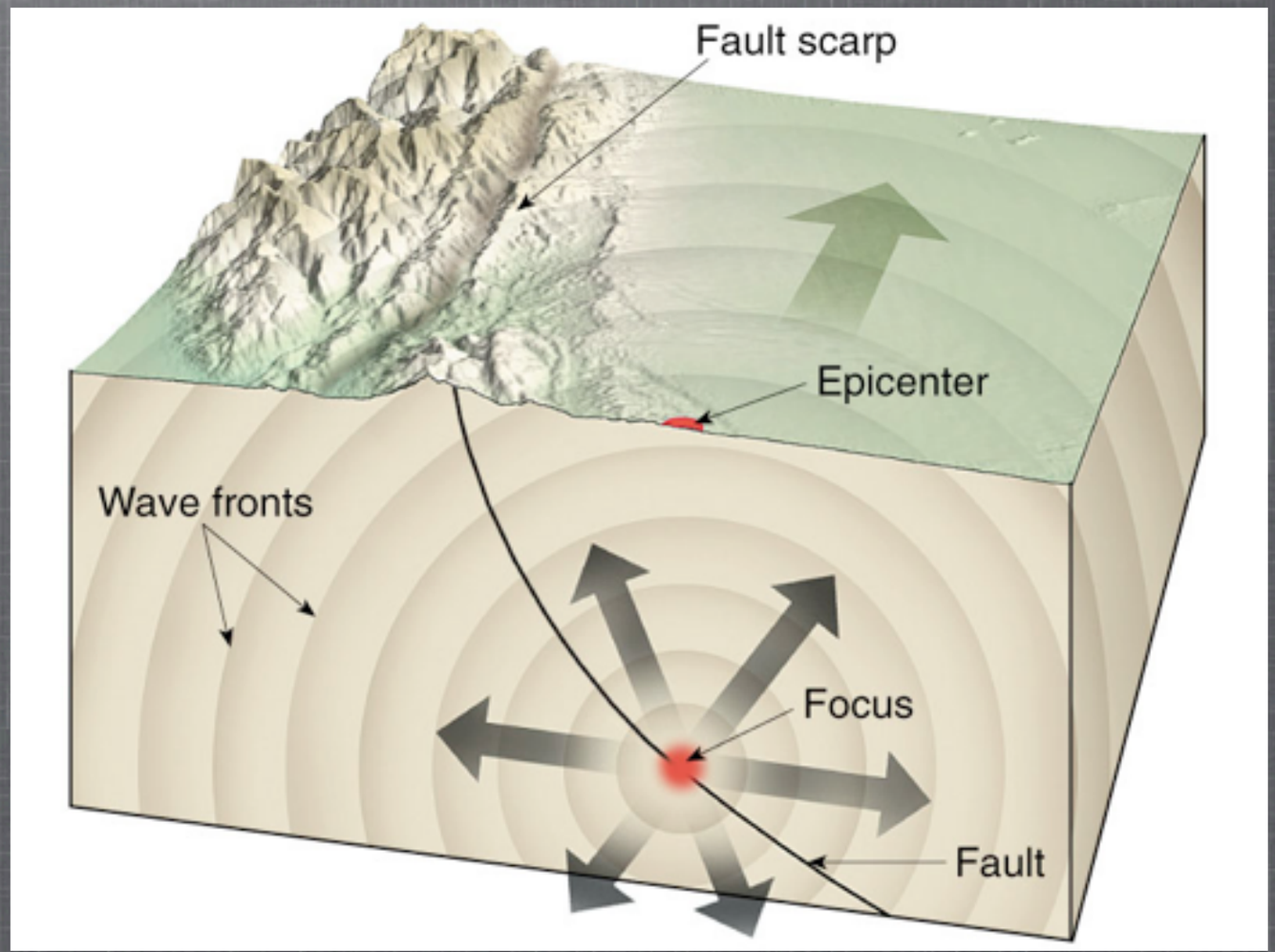
Seismic Wave	Abbreviation	Description	Ground Motion
Primary wave	P	• Type of body wave • First to arrive (fastest) • Ground squeezes and stretches in direction of wave travel. • Travels through solids, liquids, and gases	
Secondary wave	S	• Type of body wave • Second to arrive (slower) • Ground motion is perpendicular to direction of wave travel. • Travels through solids but not liquids	
Surface wave	L	• Travels along Earth's surface • Last to arrive (slowest) • Ground motion is a rolling action, like ripples on a pond.	

LOCATING AN EARTHQUAKE

Waves are used to locate the source of an earthquake.

Focus: the source of an earthquake.

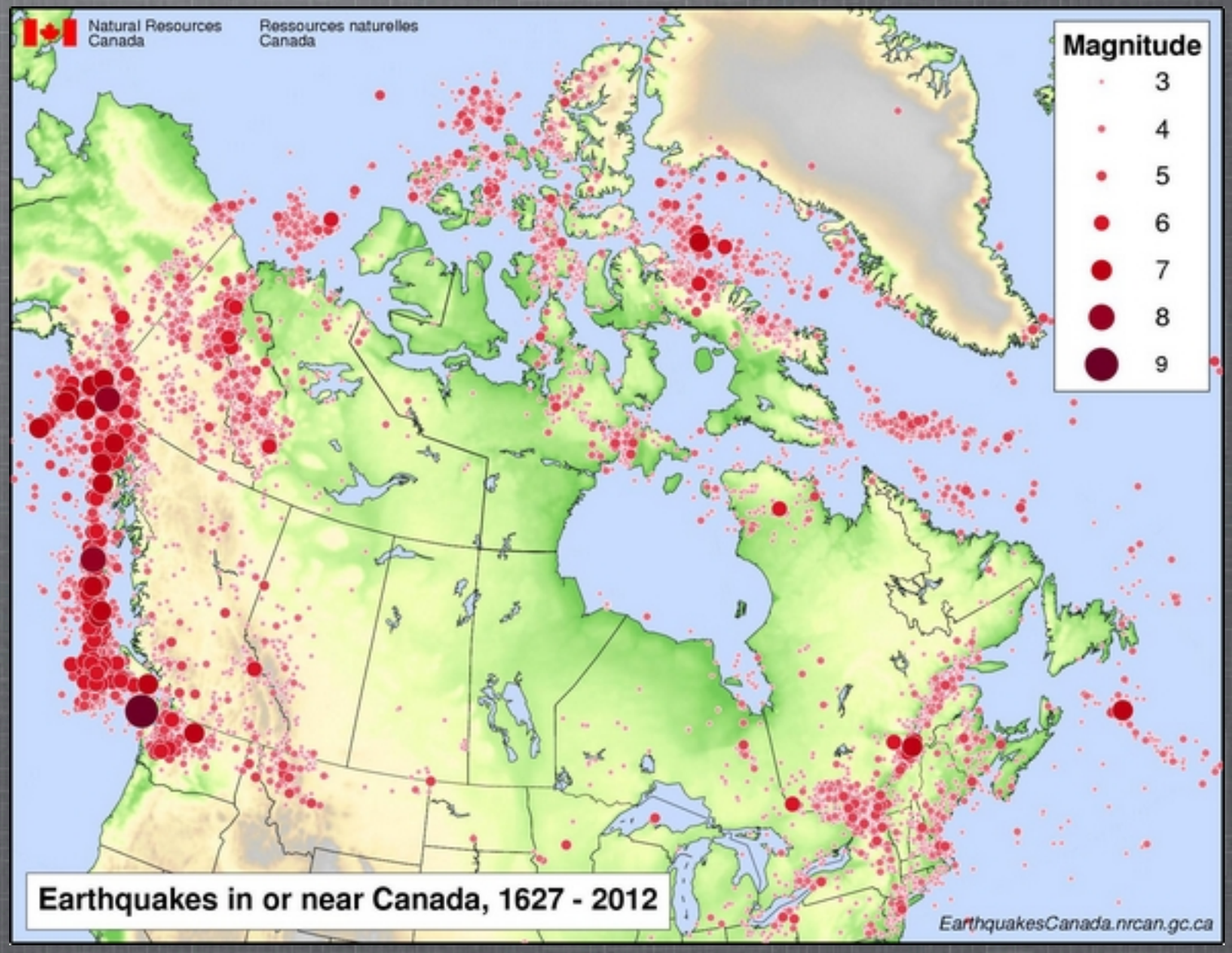
Epicentre: the surface directly above the focus.



EARTHQUAKES IN CANADA

<u>Natural Resources of Canada:</u>

- Historic Events
- Be Prepared
- Seismogram Viewer



EFFECTS OF EARTHQUAKES

Haiti, 2010

7.0 Magnitude, 52 aftershocks (4.5 and greater)

TERMS:

EARTHQUAKE
CONVERGENT
DIVERGENT
TRANSFORM
SUBDUCTION
FAULT LINE
SEISMOLOGIST
SEISMOGRAPH
RICHTER SCALE
MAGNITUDE
SEISMIC WAVE
AFTERSHOCK
FOCUS
EPICENTRE