

LANDFORMS AND OCEANS

Dr. Klein

Science Standard 5-3

The student will demonstrate an understanding of features, processes, and changes in Earth's land and oceans.

5-3.1 Explain how natural processes (including weathering, erosion, deposition, landslides, volcanic eruptions, earthquakes, and floods) affect Earth's oceans and land in constructive and destructive ways.

What are destructive forces?

- **Destructive forces are processes that destroy or wear down landforms.**

**What are some
examples of
landforms?**

Types of Landforms

1. Mountain
2. Valley
3. Plain
4. Plateau
5. Island
6. Lake
7. Ocean
8. Coast
9. Desert
10. River



mountain



A mountain is a place on Earth's surface that is much higher than the land around it.

valley



A valley is a low area between higher lands such as mountains.

plain



A plain is
a flat
area on
Earth's
surface.

plateau



A plateau is a flat area higher than the land around it.

island



An island is
land that
has water
all around it.

lake



A lake is
water that
has land all
around it.

ocean



Oceans are the largest bodies of water on earth.

coast



A coast is the area where the ocean touches the land.

desert



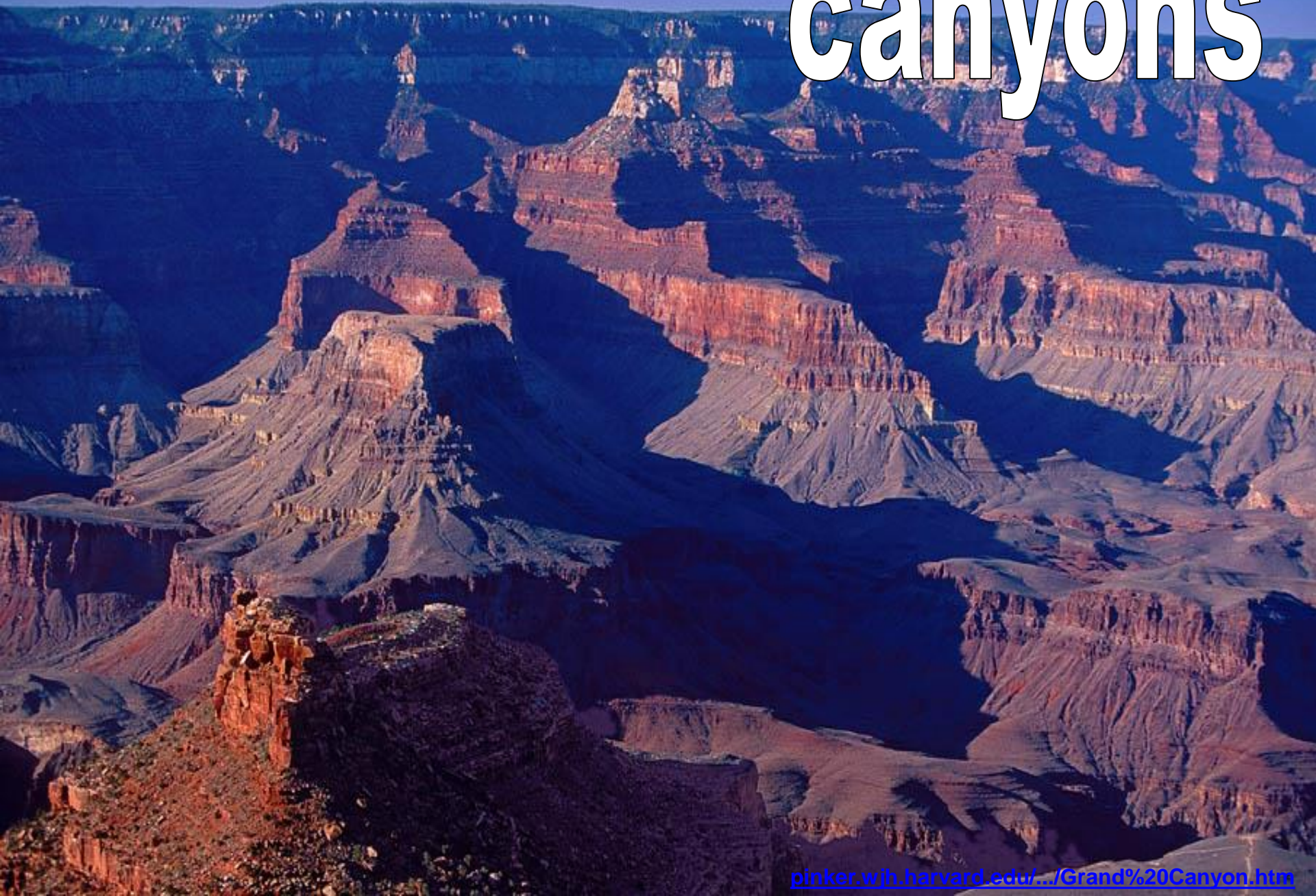
A desert is a hot dry place with little or no rain.

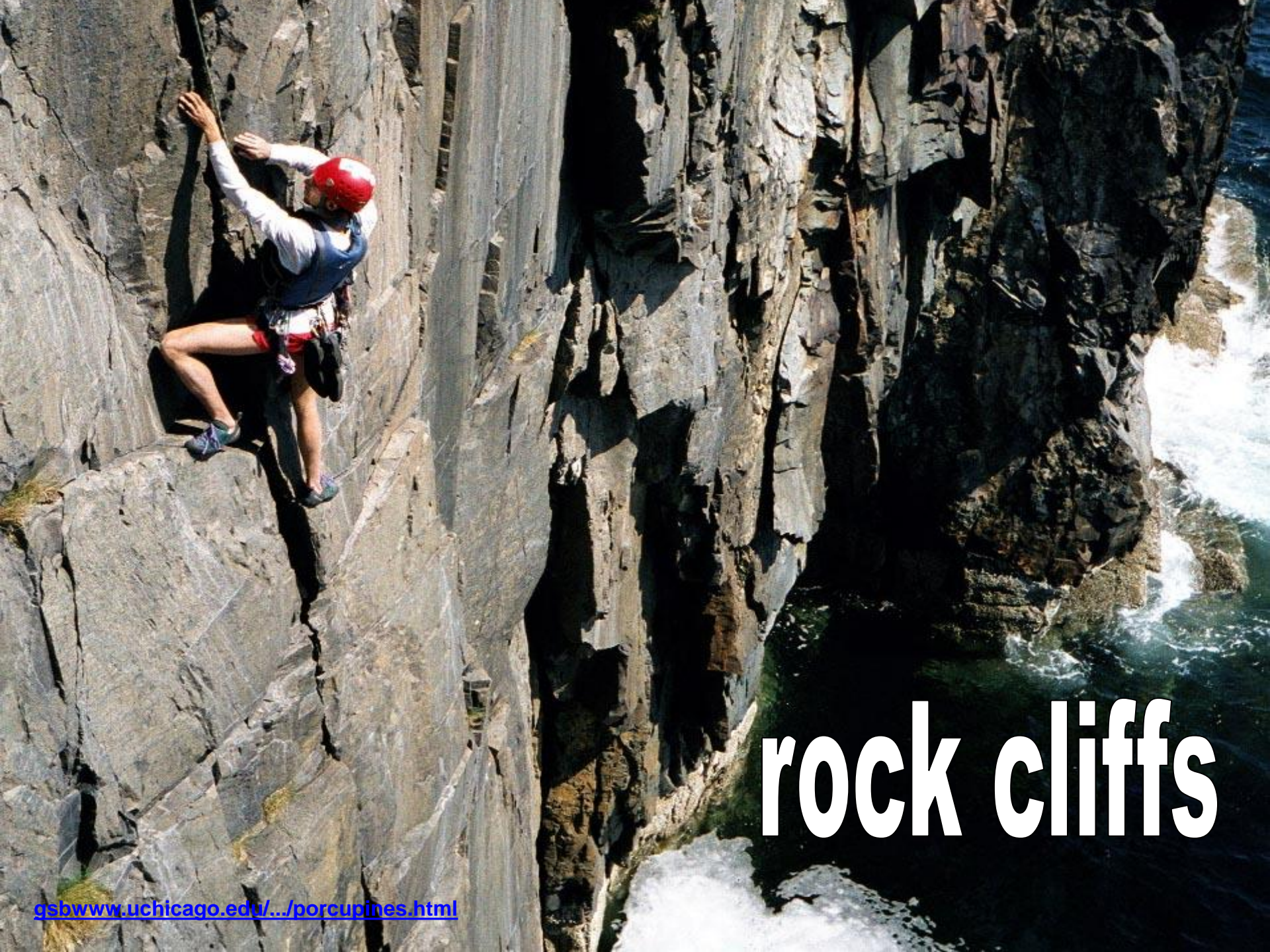
river



A river is
a long
flowing
body of
water.

canyons





rock cliffs

beaches



Now let's review!



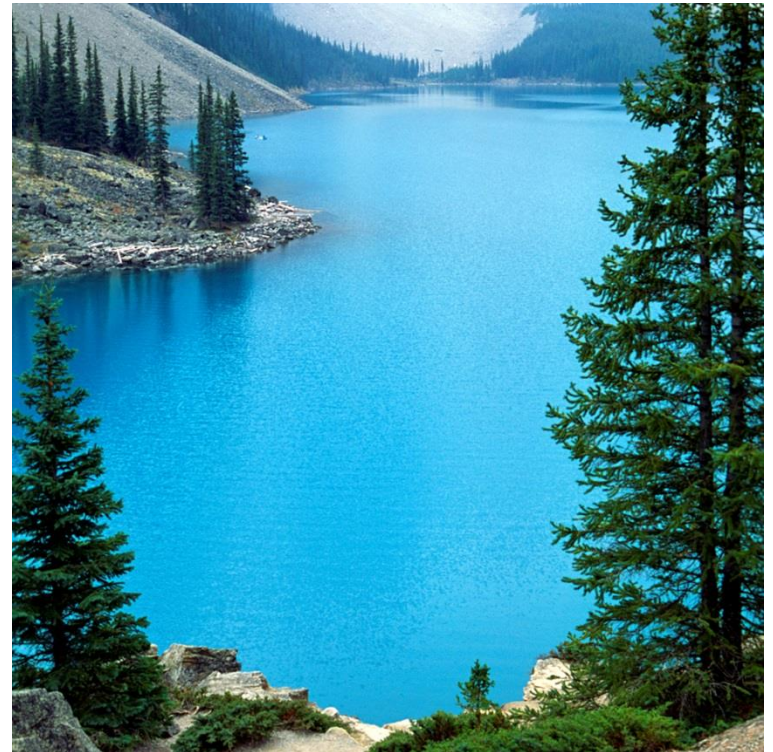
A _____ is water with land all around it.

A. Ocean

B. Island

C. Lake

Hint



What is the largest body of water on Earth?

A. Ocean

B. Lake

C. River

Hint



A _____ is higher than the land around it.

A. Island

B. Mountain

C. Valley

Hint



What is a flowing body of water?

A. Plateau

B. Lake

C. River

Hint



I am land and have water all around me. What am I?

- A. Island**
- B. Coast**
- C. Desert**

Hint



**What are natural
processes?**

**How do they affect
land and oceans?**

weathering

Constructive?

or

Destructive?

Weathering

This is a **destructive force** and can be chemical or physical. It causes the surface of the earth to dissolve, decompose, and break into smaller pieces.

Water is an important cause of weathering.

Plants cause weathering when roots break apart.

Changes in temperature can break rock, as well as ice forming inside of cracks in the rock causing it to break even more.

Anything that causes rocks to wear down is a cause of weathering.

erosion

Constructive?

or

Destructive?

Erosion

This is a **destructive force**. It is the movement of sediments and soil by wind, water, and gravity.

Erosion Song

Running down a hill
Or coming down as snow,
Water causes much
Erosion, this we know.
Wave action moves the beach.
A river carves the land.
Everywhere that water goes,
It carries dirt or sand.

Chorus:

Oh, wind and rain, snow and ice,
Water running free;
These all cause land to erode
With changes we can see.
Wind and rain, snow and ice,
Water running free;
These all cause land to erode
With changes we can see.

- *Tune: "Jingle Bells"*

Wind blowing in a gale,
Or gentle as a breeze,
Wears the rock away
And carries sand with ease.
A hurricane last year,
And glaciers long ago,
Are ways that natural forces use
To change the Earth we know.

(repeat chorus)

landslide



Constructive?

or

Destructive?

Landslide

This is a **destructive force**. This is a mass movement of land due to gravity.

**Landslides even occur
on the continental slope
in the ocean!**

Landslide

**Landslides can
cause buildings
to fall, or
power and gas
lines to break.**



deposition

Constructive?

or

Destructive?

Deposition

This is a **constructive force**. It builds up new land by dropping or depositing sediments via water, wind, or ice.

Deposition created the Mississippi River Delta near the New Orleans area.

Deposition causes the sand to pile up and create sand dunes on our beaches.

Shells on our beaches are deposition by ocean waves.

Weathering & Erosion



volcanic eruption

Constructive?

or

Destructive?

Volcanic Eruption

This is a **constructive force**. During an eruption, melted rock rises from deep within the earth and reaches the surface. They can also occur under the oceans.

Volcanoes can change Earth's surfaces.

When the magma erupts from the volcano the top of the mountain can be changed, either built up or blown off.

The lava and ash can destroy forests and bury fields.

Volcanic eruptions can even change Earth's weather patterns.

Volcanic Eruption

Seamounts are volcanoes that are built up under the ocean. If the seamount rises above the ocean surface it is called a volcanic island (like Hawaii and Japan!)



Volcanic Eruptions

earthquake

Constructive?

or

Destructive?

Earthquake

This is a **destructive force**.

Earthquakes are vibrations on Earth's surface caused by sudden movement in the Earth, often along a fault, a break in Earth's surface.

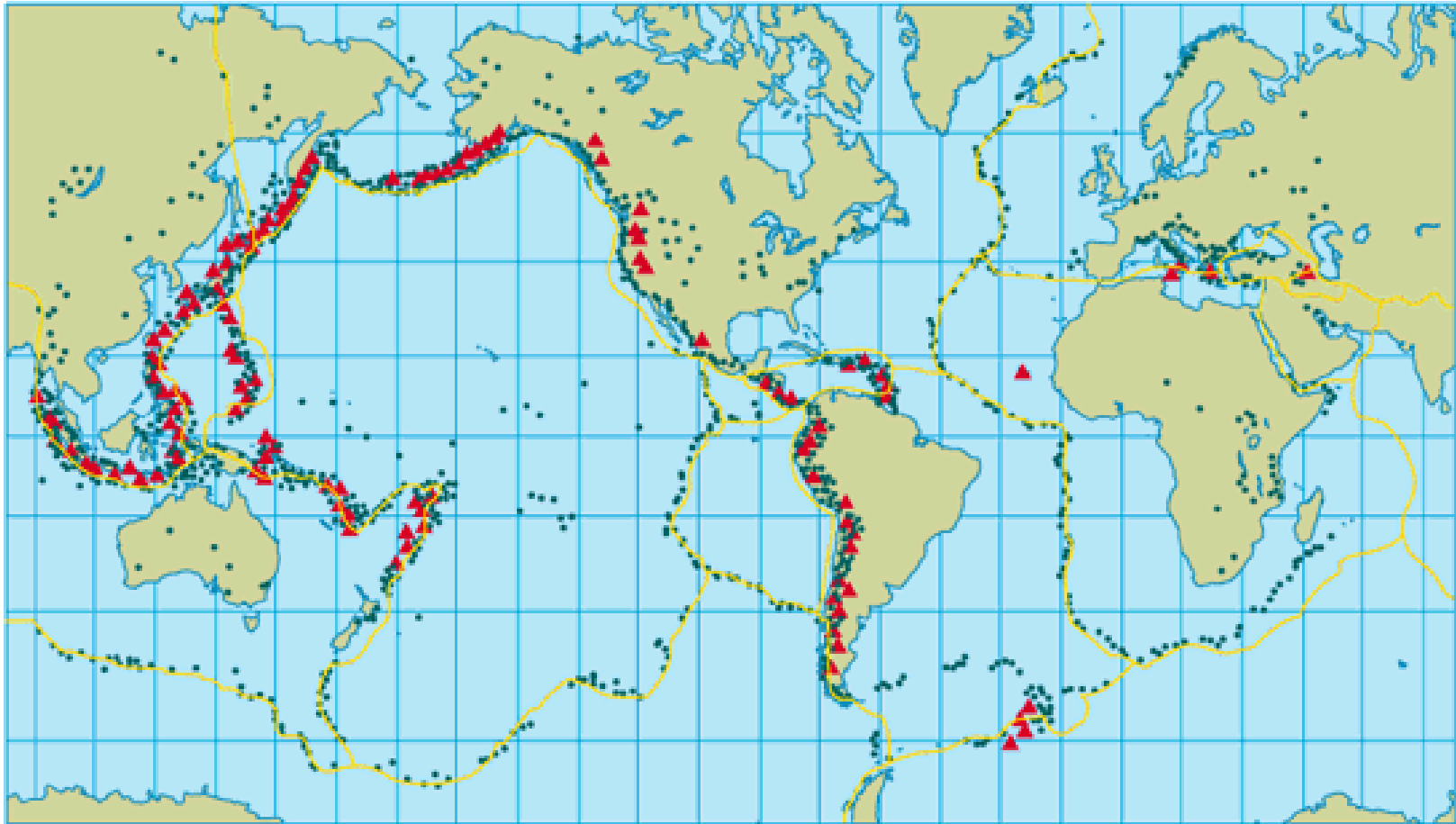
Some earthquakes cause little damage and some cause a lot of damage.

Large earthquakes can cause landslides.

Earthquake

Earthquakes under the ocean can cause huge waves (tsunamis) that can destroy land and cause great damage if they come ashore.

Volcanoes And Earthquakes



 **Volcanoes**
 **Earthquakes**

This map shows how volcanoes and earthquakes occur along tectonic plate boundaries.
http://www.pbs.org/wgbh/nova/teachers/activities/2515_vesuvius.html

flood



Constructive?

or

Destructive?

Flood

This is a **destructive force**. Floods occur when a large amount of water covers land that is normally dry.

When the flood occurs, rapid erosion can take place and move soil and sediments away.

When the flood recedes, new sediment is left behind and can build up rich soil deposits.