

Types of Plate Boundaries

Earth's surface consists of a relatively small number of **crustal plates**. These are constantly being formed in some locations, destroyed in other locations, and moving past each other in places. Recognition of these **tectonic** (having to do with Earth movements) features completely changed how people thought about earthquakes, volcanoes, and our planet's history.

In the spaces below, take notes about the basic types of plate boundaries. Use these together with the diagram from the ESRT. Follow directions about color-coding this diagram.

(1) DIVERGENT PLATE BOUNDARIES

General motion:

Typical location:

Diagram:

(2) CONVERGENT PLATE BOUNDARIES ("SUBDUCTION ZONES")

General motion:

(A) OCEAN TRENCH-CONTINENTAL MOUNTAIN RANGE PLATE BOUNDARY

Example:

Diagram:

(B) OCEAN TRENCH-ISLAND ARC BOUNDARY

Example:

Diagram:

(C) CONTINENT-CONTINENT PLATE BOUNDARY

Example:

Diagram:

(3) TRANSFORM PLATE BOUNDARY

General motion:

Example:

Diagram:

OTHER TECTONIC FEATURES

“MANTLE HOT SPOTS”

General characteristics:

Examples:

Additional questions:

1) Earlier in the course you learned about “continental crust” and “oceanic crust.” Compare and contrast them in three ways.

2) On what plate do we live?

In which direction is it moving?

What kind of boundary exists to its east? What geologic feature is found there?

What plates are on the other side of this boundary?

3) What kind of plate boundary exists on the western side of our plate in CA?

What is the name of this boundary?

What often occurs along it?

4) What is the small tectonic plate along the Pacific Northwest?

What kinds of mountains form here? Name several.

5) Many of the most powerful earthquakes ever recorded took place in Chile along the Pacific coast of South America. What kind of boundary exists there?

What is the name of the trench there? The name of the mountain range there?

6) What “mantle hot spot” has created an entire State?

What “mantle hot spot” exists in the continental USA? What is its most famous feature?

7) The highest mountains in the world today are the Himalayas. What plates are colliding to form them?

8) What mountain range along Eastern North America may once have been as high as the Himalayas, but formed during a plate tectonic cycle hundreds of millions of years ago and have been eroding ever since?

