How Does the Crust Move?

Name: _____ Date: _____

Plate Tectonics: Types of Boundaries

- Tectonic plates meet at locations called _____ boundaries.
- There are _____ types of plate boundaries
  - _____ Boundaries
  - _____ Boundaries
  - _____ Boundaries

Types of Plate Boundaries: Divergent Boundary

- Where plates move _____
- _____ on land and in the ocean
- Marked by a spreading center in the _____
- At the spreading center, new floor forms as oceanic _____ moves away from the spreading axis
- On land, a _____ zone forms
- _____ form in these regions

Types of Plate Boundaries: Convergent Boundaries

- Where plate comes _____
- Found on land and in the _____
- _____ occurs when denser crust is pushed below less dense crust into the mantle, where is melts
- The region that outlines where subduction occurs is called the _____ _____.
- Ocean crust subducts _____ continental crust
- Two oceanic crusts – older crust subducts _____ newer crust
- Two continental crusts – _____ subducts; push upward, form mountain chains

Types of Plate Boundaries: Transform Boundary

- Where plates move _____ past one another
- Found on _____ and in the ocean
- Horizontal movements of rocks grinding past each other produces _____

What Causes Plate Motion

- Tectonic plates move very _____ over Earth's surface.

- The slowest plates move at a rate of only about 2.5 cm (1 in.) _____ _____.
- The fast plate motion is a little more that 15 cm (6 in.) _____ _____.
- How far might the slowest and fastest plates have moved since you were born?
- Plates move because of the action of convection currents that are created by the heating and cooling of the _____ in the mantle
- The circular movement of these currents creates two primary _____ that move the plates
- One force, _____ _____, is created as newly formed ocean crust pushes adjoining crust away from the ridge.
- The second force, _____ _____, occurs as the magma moves under the plate and locks onto the underside of the plate, pulling it along.

Earth's Crust and the Genesis Flood

- Although scientists do not fully understand the causes of plate motion, evidence indicates that _____ continental movement has occurred in the past.
- The theory of plate tectonics explains much of what is currently observed in _____.
- What could have caused a super continent, like Pangaea, to break up, with the resulting continents moving thousands of miles apart?
- The Bible describes dramatic events associated with the _____ of **Genesis 7-9**, such as "all the fountains of the great deep" bursting open (**Genesis 7:11**).
- It is possible that these events led to much of what we see on Earth's today, but they do not provide a _____ and detailed explanation.
- Currently, the continental plates are moving _____ (1-4 cm per year).
- At that rate, it would have taken _____ of years for them to arrive at their present locations, which is exactly what many scientists think happened.
- Scientists who interpret the early chapters of _____ literally, however, think the movement must have happened much more quickly.
- These scientists believe that the violent _____ during the Flood and the geological changes since the Flood might explain how Earth's plates could have moved apart much more quickly than they are moving today.
- Although the theory of plate tectonics explains phenomena that we see happening today, it's much _____ to know exactly how plate

movements might have occurred during events that involved the intervention of God, like the Genesis Flood.

Called to Serve

- The Seventh-day Adventist Geoscience Research Institute (_____) includes eight research scientists as members.
- The GRI also sponsors a modest research _____ program.
- Over the past 20 years, funding has provided for nearly _____ research projects relating to Earth's origins and history.
- Perhaps one day, you will be one the scientists doing _____ for the GRI!