Name: _____
Hour:_____ Date:_____

Chapter 8.1

What is an Earthquake?

What is an Earthquake?

- An _____ is the _____ of Earth produced by the _____ release of _____ within the _____, called a _____.
- _____ is the _____ within Earth _____ the earthquake _____. The _____ is located along a _____ beneath the _____.
- *Epicenter* is the location on the _____ directly above the focus.
- *Faults* are _____ in Earth where _____ has _____.

Faults and Change to Earth's Surface

- _____ along _____ during _____ change the _____ of the earth.
- The _____ can _____ vertically or _____ as a result of _____movement.

The San Andreas Fault

- The _____ _____ fault system is one of the most _____ in the _____ and is _____ on the _____ coast of _____.
- Each fault _____ behaves differently.
- Some _____ of the _____ move very _____, while others _____ regularly _____ small _____.
- Some fault segments have stayed locked for _____ of years.
- In _____ California had a terrible _____ caused _____ the _____ Andreas _____.
- _____ the _____ San Francisco _____, scientists did not _____ what causes _____.

Cause of Earthquakes

- _____ Rebound Hypothesis
  - Most _____ are produced _____ the rapid _____ of elastic _____ stored in _____ that has been _____ to great _____.
  - When the _____ of the _____ is exceeded, it suddenly _____, causing the _____ of an earthquake.
  - Elastic _____- tendency for _____ rocks along a _____ to spring _____ to its original _____after an _____much like a _____band that has been _____.

Aftershocks and Foreshocks

- Even _____ earthquakes _____ _____ release _____ of the _____ energy _____in the _____along a _____.

- An aftershock is a small _____ that follows the main earthquake.

- A _____ is a small _____ that often _____ a major _____.

Chapter 8.2

Measuring Earthquakes

SEISMIC WAVES

- _____ produce _____ main types of _____ waves— _____ waves and _____ waves.
- The _____ that _____ through Earth's _____ are called _____ waves. There are _____ types of _____ waves: _____ waves and ____ waves.

Seismic Waves: Body Waves

- _____ waves:
  - Are _____-pull waves that push (_____) and _____(expand) in the _____ that the _____ travel.
  - Travel through _____, _____, and gases.
  - Have the greatest _____ of all _____ waves (they are the _____)
- _____waves:
  - _____ waves that travel along Earth's _____ layer.
  - _____ particles at _____ angles to the _____ that they _____.
  - They only travel through _____.
  - _____ velocity than _____ waves. (They don't _____ as _____)

Seismic Waves: Surface Waves

- When body waves reach the
- _____ waves move _____ than _____ waves and _____ can _____ up and _____ as well as _____ to side.
- _____ waves are _____ than _____ waves, so _____ are the most _____ seismic _____.

Recording Seismic Waves

- Seismographs are _____ that record earthquake _____.

- _____ are traces of _____, electronically _____ ground _____ made by _____.

Chapter 8.3

Earthquake Hazards

Measuring Earthquakes

- _____ can be _____ by their _____ or _____.
- _____ is a _____ of the amount of _____ shaking at a given _____ based on the amount of _____.
- *Magnitude* is a measure of the size of seismic waves or the _____ of energy released at the source of the _____.
- _____ *Scale*-measures _____
    - Based on the _____ of the largest _____ *wave* recorded on the _____.
    - A _____ increase in the _____height _____ an _____ of 1 on the _____ scale.
    - It is only useful for small shallow _____ within _____ kilometers of the epicenter
- _____ *Magnitude*-measures magnitude
    - Derived from the amount of displacement that occurs along the _____ zone.
    - It is the most _____ used _____ because it _____ the _____released by _____.
    - Measures very _____ earthquakes.
- Modified _____ Scale-measures _____
    - This _____rates an earthquake's _____ in terms of the earthquake's _____ at different _____.
    - The same earthquake can have different Mercalli scale _____ at different _____.

Destruction from Earthquakes

- _____ *Shaking*
    - _____ due to _____ waves depends on _____ factors.
        - The _____ include: the _____ and _____ of the _____, the _____ of the material on which the _____ is built, and the _____ of the structure.
        - Damage is _____ near the _____, but can also be great in areas with loose soil or sand.

- _____
    - When saturated soil and rock becomes _____.
    - Underground objects may _____ to the surface.

- _____ and Mud Flows
    - _____ can cause many _____ of _____ movement.
    - They can _____ the land to _____ or they can cause _____ rock and _____ to slide _____ a _____.

- _____- Japanese _____ for "_____ sea _____"
    - _____ by an _____ that occurs where a _____ of the _____ floor is _____ vertically along a _____.
    - A tsunami in the open ocean is usually less than _____ meter high (3 feet).
    - When the _____ enters _____ water near shore, it _____down causing the _____ to _____ up into a _____ wave.

Reducing Earthquake Damage

- Assessing _____ Risk
    - Earthquakes mostly happen along the _____ of _____ plates.
    - _____ use historical _____ to determine _____ risks and _____ the movement of the _____ near _____.
    - A _____ gap is an _____along a fault where there has _____ been an _____ in a _____ time.
- _____-Safe Design- Most _____-prone _____ have building _____ to set standards for earthquake _____ structures.
    - For example…
    - Steel frames are _____ with cross-braces.
    - Building's _____ are set on _____ pads that _____ energy.
    - _____ homes are _____ to their foundations, and _____ are not made of _____ or stone.
    - Flexible pipes and shut-off _____ are used for utility lines.
- Earthquake Safety- "_____, _____, and _____"
    - Find a desk or table and take _____.
    - _____ against an _____ wall away from the _____ of the building.
    - If you are _____, move to an _____ area that is _____ of trees, _____, or power lines. Sit to _____ falling.