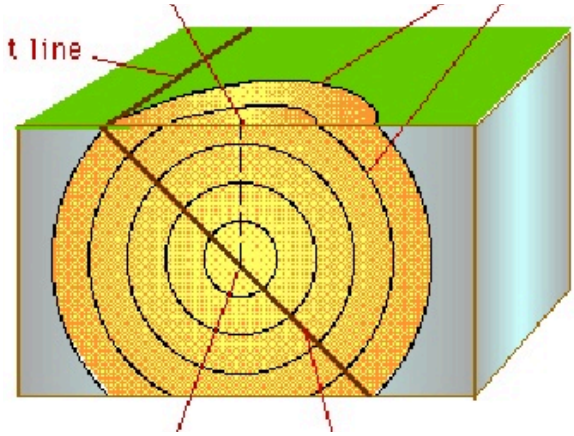
Earthquake Powerpoint Notes Name: _____ P:_

www.slideshare.net/dluetgens/earthquakes-2908179

Slide 3:
Convection currents cause the movement of _____

If the plates become _____ - unable to _____
_____ _____ (PE) builds up
PE may be released as _____ and the _____ move abruptly apart. This sudden release of energy is an _____

Slide 5: Label



Earthquakes: When the break line (the _____) between two blocks of rock suddenly moves, the movement causes vibrations _____
_____-____ to race rapidly outward in all directions from the _____. The point at the ground level directly above the focus is called the _____.

Slide 6: Why do Earthquakes occur?

- Fractures, faults
- Energy releases and propagates in all directions as _____ _____ causing _____

Slide 7: Where do earthquakes _____:

1) Most earthquakes occur along the edge of the
   _____ and _____ plates

2) Along _____

Slide 8: Definitions

_____ = Vibration of the earth produced by the _____ release of energy

_____ _____ = Energy moving outward from the focus of an earthquake

_____ = Location of the initial slip on the fault; where the earthquake origins

_____ = spot on the Earth's surface directly above the focus

Slide 9: Seismic waves : forms

_____ (Primary or first)

- Called compressional or push-pull waves
- Propagate _____ to the direction in which the wave is moving
- Move through solids, liquids
- Fastest moving - reach seismic station first

_____ (Secondary)

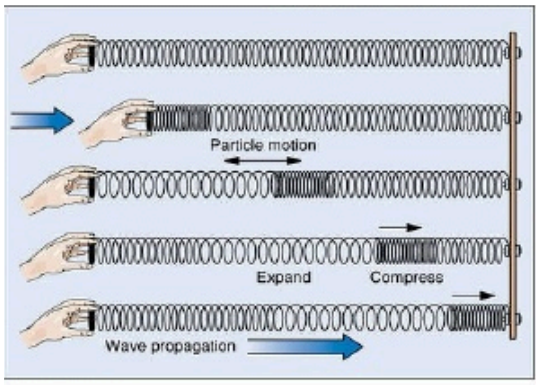
- Called shear waves
- Propagate the movement perpindicular to the direction the wave is _____
- Reach seismic station _____

_____ (L waves or long waves)

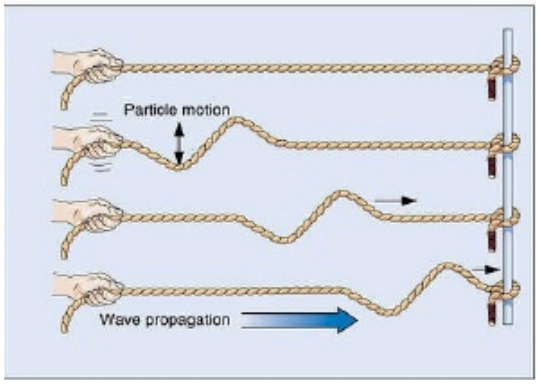
- Complex motion
- Up and down and side to side
- Slowest

- Most damage to structures or buildings

Slide 11:



A Primary wave

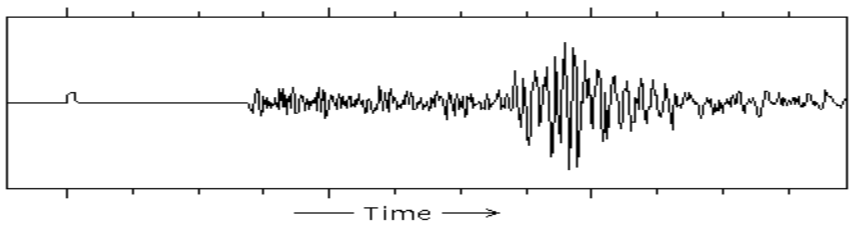


Slide 12: Measuring Earthquakes

_____ instruments that detect seismic waves

_____ record intensity, height, and amplitude of seismic waves

Label:



Slide 17: Earthquake _____: two ways to _____

*** _____: _____ Scale**

- Measures the energy released by _____

  _____
- related to the maximum amplitude of the s wave measured from the seismogram
- --------arithmic-scale; _____ measure
- For each whole number there is a 31.5 times increase in energy

- e.g. an increase from ____ to _____ on the _____ _____
  = an increase in energy of 992 times!!

Slide 18: _____: _____ Scale

- _____?
- Assigns an intensity or rating to measure an earthquake at a particular location

  _____
- I (not felt) to XII (buildings nearly destroyed)
- Measures the _____ _____

* Intensity is a function of

- Energy released by _____
- Geology of the _____
- Surface substrate: can magnify shock waves e.g. Mexico City 11985 and San Fransisco (1989)

Slide 19: Frequency and Occurrence of Earthquakes

Study diagram, fill in the blanks.

On a yearly average we have _____ (less / more) great earthquakes than minor earthquakes. _____ (major / moderate) earthquakes are rare.

Slide 21: _____ _____ in the world

Chile: 1960 May 22 19:11:14 UTC Magnitude 9.5 More than 2000 killed in Chile

Tsunami caused 61 deaths and _____ million damage in _____

_____ deaths and _____ million damage in Japan

Slide 23: Study the table and answer these questions:

A what magnitude earthquake in Tangshan China killed 255,000 - 655,000 people?

What made the earthquake in Michoacan Mexico so deadly?

Slide 24: Earthquake _____

- **_____ constructions collapse**
- **_____ - from broken gas and electrical lines**
- **_____ EQ's triggered; occur in hilly mountainous areas**
- **_____ water saturated unconsolidated materials flow**
- **_____ (seismic sea waves; "tidal" waves) - can grow up to 65 m**

Slide 28: _____

Soil liquefaction describes a phenomenon whereby a saturated or partially saturated soil substantially loses strength and stiffness in response to applied pressures and begins to behave like a liquid. Sandy soils, beach soils are notorious for this.

Slide 36: Earthquake risk and prediction

Long term methods:

1. _____ _____ _____
2. Probability analysis based on

- historical EQ records
- geological EQ records
- _____ - _____ on active faults
- frequency and magnitude of recent EQs