Name Date Class

Note-taking Worksheet

Earthquakes

Section 1 Forces Inside Earth

A. When rocks break they move along _____.

1. Applied forces cause rocks to undergo _____.

2. When elastic _____ are passed, rocks break.

3. Rock on one side of a fault can move _____, _____, or _____ in relation to rock on the other side of the fault.

B. Faults occur because forces inside the Earth cause Earth's _____ to move placing stress on or near the plate edge.

1. Rocks will bend, compress, _____, and possibly break.

2. _____—vibrations produced by breaking rock

a. Rocks break, move along the fault, return to original _____

b. Rock on one side of a fault can move over, under, or _____ each other along fault lines.

C. Three types of _____ act on rocks – tension, compression, and shear.

1. Tension forces; _____ **fault—**caused by rock above the fault moving downward in relation to the rock below the fault

2. _____ **fault**—compression forces squeeze rock above the fault up and over the rock below the fault.

3. Created by shear forces; _____ **fault**—rocks on either side of the fault move past each other without much upward or downward motion.

Section 2 Features of Earthquakes

A. _____—waves generated by an earthquake can move the ground forward and backward, up and down, and side to side.

1. Focus—an earthquake's point of _____

2. _____ **waves** (P-waves)—cause particles in rocks to move back and forth in the same direction that the wave is traveling

3. _____ **waves** (S-waves)—cause particles in rock to move at right angles to the direction of wave travel

4. _____ **waves**—move rock particles in a backward, rolling motion and a sideways swaying motion

5. The point on the Earth's surface directly above the earthquake focus is called the _____.

Meeting Individual Needs

Note-taking Worksheet (continued)

B. The different _____ of seismic waves allow scientists to determine the epicenter.

1. _____ waves move fastest.

2. Secondary waves follow.

3. Surface waves move _____ and arrive at the seismograph station last.

4. _____—measures seismic waves

a. Consists of a rotating drum of paper and a pendulum with an attached _____.

b. The paper record of a seismic event is called a _____.

C. Earth's structure consists of an inner, mostly iron, solid core surrounded by a mostly iron liquid outer core surrounded by the mantle.

1. The crust is Earth's _____ layer, about 5 to 60 km thick.

2. A seismic wave's speed and direction change as the wave moves through different layers with _____.

a. Density generally _____ with depth as pressures increase.

b. _____ do not receive seismic waves because the waves are bent or stopped by materials of different density.

3. Changes in seismic wave _____ allowed detection of boundries between Earth's layers.

Section 3 People and Earthquakes

A. Although earthquakes are natural geologic events, they kill many people and cause a lot of _____.

1. _____—scientists who study earthquakes

2. **Magnitude**—measure of energy released by an earthquake; determined by the _____ and based on the height of the lines on a seismogram

a. The Richter scale has no _____ limit.

b. Most earthquakes have magnitudes too _____ to be felt by humans—3.0 to 4.9 on the Richter scale.

3. The modified _____ intensity scale describes earthquake intensity based on structural and geologic damage.

4. _____—shaking from an earthquake can make wet soil act like a liquid.

Meeting Individual Needs

Note-taking Worksheet (continued)

5. Ocean waves caused by earthquakes are called _____.
   - **a.** Caused when a sudden movement of the ocean floor _____ against the water
   - **b.** Can travel thousands of _____ in all directions

B. Earthquakes cannot be reliably _____.

1. Knowing how and where to _____ for earthquakes can help prevent death and damage.
2. Buildings can be _____ to withstand seismic vibrations.
   - **a.** Flexible, circular _____ are being placed under buildings; made of alternating layers of rubber and steel.
   - **b.** The rubber acts like a cushion to absorb earthquake waves.
3. Homes can be protected by careful placement of heavy objects and securing _____ appliances.
4. During an earthquake, crawl under a sturdy table or desk; outdoors, stay away from _____ and power lines.
5. After an earthquake, check for water or gas line damage; leave _____ if a gas smell is present.