**Earthquakes!**

Unit 2: Tectonic Processes

Geography 12

**News Illustrated: How Disaster Strikes: Earthquakes happen after centuries of energy build up within the earth.**

**Post Reading Questions:**

1. Where do earthquakes occur? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. Where do 90% of the world’s earthquakes occur? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What two plates were in involved in the 2010 Haiti earthquake?

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What type of plate movement caused this earthquake? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What is the epicenter? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What is the focus or hypocenter? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. What are seismic waves? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What types of waves create the most shaking? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What are earthquakes?**

* When stress-deformed rocks break or release pressure by a sudden shift of position, severe shaking on the ground may occur.
* The shaking is caused by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What causes earthquakes?**

* As plates move and grind against one another, enormous stress is put on the earth’s crust 🡪 cracks or **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** form.
* Movement at these faults are not smooth.
* Pressure may build for a long time 🡪 when pressure is too great and the rock suddenly moves, it releases this stored energy in the form of **seismic waves.**

**Where do earthquakes occur?**

* Exact point in the earth where rock fracture occurs is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the point on the earth’s surface directly above the focus.
* **Focal depth:** distance between the focus and epicenter.

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**How do we measure earthquakes?**

* Widely-used method to measure the magnitude of an earthquake is by using the **Richter scale.**
* Energy released is measured by a **seismograph.**
* Developed by Charles F. Richter in 1934.
* Based on a 10 point scale
* The Richter scale is **logarithmic**, meaning that whole-number jumps indicate a tenfold increase.

 **Example:** wave amplitude in a level 6 earthquake is 10 times greater than in a level 5 earthquake

**What are earthquake hazards?**

1. **Ground Motion:** damage to buildings, bridges, dams, gas line ruptures, etc.
2. **Aftershocks:** secondary earthquakes can cause additional damage to weakened structures.
3. **Landslides: failure of slopes causing downward movement of rock and debris**

**d) Fires**

**e) Tsunamis:** waves generates by sudden movement on the sea floor.

  