Essential Question: How do I describe seismic waves?

1. What are the two types of seismic waves? 
   ________________________________________ 
   ________________________________________ 

2. What are the two types of body waves? 
   ________________________________________ 
   ________________________________________ 

3. What produces seismic waves? 
   ________________________________________ 

4. Which seismic wave can travel through earth? 
   ________________________________________ 

5. Which seismic wave can travel to the mantle, not the outer core (liquid iron)? 
   ________________________________________ 

6. Which seismic wave only travel on the earth surface? 
   ________________________________________ 

7. What are the two types of surface waves? 
   ________________________________________ 

8. Which seismic waves stay on Earth’s Surface? 
   ________________________________________ 

9. Which seismic wave refracts and cannot penetrate the core? 
   ________________________________________ 

10. Which seismic wave can penetrate the core but refracts? 
    ________________________________________ 

11. In what directions do the S, P, and Surface waves move? 
    S wave: ________________________________ 
    P wave: ________________________________ 
    Surface wave: ___________________________ 

12. What Are Seismic Waves? 
    ________________________________________ 
    ________________________________________ 

13. Which is faster S or P wave? 
    ________________________________________ 

14. Where do seismic waves travel slowest and fastest? 
    ________________________________________ 
    ________________________________________ 

15. Which type of wave can penetrate the outer and inner core? 
    ________________________________________
16. What happens to S and P waves as they travel inside earth?
________________________________________________________________________
________________________________________________________________________

17. How are we affected by Earthquakes?
________________________________________________________________________
________________________________________________________________________

18. What are earthquake waves?
________________________________________________________________________
________________________________________________________________________

19. How fast are seismic waves?
________________________________________________________________________

20. Describe the layers of Earth. (solid, liquid, thick, thin, iron, rocks)
    Crust:_________________________________________
    Mantle:_________________________________________
    Outer core:_________________________________________
    Inner core:_________________________________________

21. The epicenter of the earthquake is directly below the focus.
   A. True   B. false

22. Waves move out through the ground from the source of an earthquake.
   A. True   B. false

23. One of the results of an earthquake can be...
   A. Property Damage   B. Landslide   C. Tsunami   D. All of the Above

24. The machine that measures the strength of an earthquake is called______.
   A. Radiograph   B. Seismometer   C. Electrocardiograph

25. Earthquake foci (focus, singular) are...
   A. More than 200 Miles   C. 50-200 Miles Deep
   B. C. 0-50 Miles Deep   D. All of the Above

26. Many earthquakes happen along the borders of...
   A. Countries   B. Tectonic Plates   C. Climate Zones   D. None of the Above

27. Faults are only found near the edges of tectonic plates.
   A. True   B. False

28. Energy waves from large earthquakes can move through large portions of the Earth.
   A. True   B. False

29. Earthquakes can happen when the strain on weak rocks forces them to break and fracture.
   A. True   B. False

30. Earthquakes can happen when there is a large amount of...
   A. Volcanic Activity   B. High Tides   C. Surface Construction   D. All of the Above
The focus of the earthquake is directly below the epicenter. The focus is the origin of the earthquake under the surface. The epicenter is the point directly above the focus on the surface.

Energy is released from the point of earthquake origin. That energy moves in waves across the surface of the Earth or across water. Energy from an earthquake can even travel through the planet. The 2004 Indian Ocean quake had a magnitude of 9.1 and caused the entire planet to shake a tiny amount.
An earthquake can cause all of those problems. A landslide and property damage could be immediate results of a quake. A tsunami could be created and hit shorelines hours after the earthquake was over. Tsunami systems are set up around the world to protect people along coasts from ocean waves generated by earthquakes.

A seismometer or seismograph is used to study and measure the strength of earthquakes. The science of earthquakes is called seismology. Waves generated by an earthquake are called seismic waves. The prefix comes from the ancient Greek word "seismos" which means “to shake”.

Many earthquakes happen at the borders of tectonic plates. There is a large amount of geologic activity and movement along the borders of these plates. That activity builds stress and creates earthquakes. While many countries have borders along faults and mountain ranges, earthquakes don’t care about political boundaries.

While many earthquakes do happen at the borders of plates, there are faults that cross plates in many locations. A fault or crack in the plate can occur
anywhere. They don't need to be large faults such as the San Andreas Fault in California.

The energy of earthquakes moves away from the focus in all directions. While some of the waves occur on the surface, other waves of energy move through the planet at very deep levels. The large earthquake that triggered the tsunami of 2004 sent waves of energy through much of the planet.

Many earthquakes happen because of stress on local areas of rock. When the stress builds to a level that is too high, the rock gives way, snaps, and breaks. That break is the origin or focus of the earthquake.

Of the choices, volcanic activity was a good cause of earthquakes. Tides and construction may be big factors to you, but the surface of the Earth hardly feels a change. Volcanoes pack a lot of energy and sometimes flow around existing fault lines such as the Ring of Fire. There is scientific debate about whether natural gas exploration is causing local small quakes as energy companies drill deep into the earth.

http://geopick.uncc.edu/geologyWeb/physicalGeology/Topics/910earthquakes/earthquakes01.html