

## **Earthquake Notes**

As tectonic plates slide past one another in a transform fault a tension is created. When this tension reaches a threshold it will release. This release of energy is the cause of an earthquake.

The focus of an earthquake is the point where it begins. It can be close to the surface or as deep as 200 km. The epicentre is the point on the Earth's surface directly above the focus; it is also where the most damage will occur.

### **WAVES THROUGH EARTH DIAGRAM**

Earthquakes release energy in the form of vibrations called seismic waves. An instrument called a seismometer detects these waves. The seismograph gives the time delay of the arrival of different wave types as well as their energy.

The waves can be split into two categories:

Body Waves: travel through to the Earth's body, primary (P) and secondary (S)

Surface Waves: travel on the Earth's surface, Rayleigh (R) or Love (L)

### **Effects of Earthquakes**

Each type of seismic wave travels in a different way.

#### **Body Waves**

- Primary (P) waves are the fastest and are examples of compression waves that push and pull. When they hit the surface they make it go up and down.
- Secondary (S) waves are slower and are examples of transverse waves that go side to side. When they hit the surface they make it move side to side. Unlike primary waves, secondary waves are blocked by molten rock.

#### **Surface waves**

- R waves are rolling waves, like breakers at a surf beach. They are the slowest but often the largest and most destructive.
- L waves are the fastest surface wave and have a side-to-side motion, like a moving snake.