



## Geography: Lilac Class – Earthquakes

### What makes the world grumble and shake?

#### Key Vocabulary—Mountains

<b>Energy</b>	a supply or source of electrical, mechanical, or other form of power
<b>Fault line</b>	a fault line is a line at the Earth's surface that marks movement between tectonic plates.
<b>Hypocentre</b>	the point within the earth where an earthquake originates.
<b>Magnitude</b>	a measure of the energy of an earthquake, specified on the Richter scale.
<b>Seismic waves</b>	the release of energy built up during an earthquake, they can cause shaking, up and down movements and loud noise.
<b>Seismograph</b>	an instrument that detects the presence of an earthquake and measures and records its magnitude.
<b>Tectonic</b>	relating to the forces that produce movement and deformation of the Earth's crust.
<b>Tremor</b>	a shaking or trembling. Caused by an earthquake.
<b>Tsunami</b>	a very large, often destructive sea wave caused by a marine earthquake or volcanic explosion.
<b>After-shock</b>	a small earthquake or a series of small earthquakes that follows a larger one and that originates at or near the same epicenter.
<b>Fore-shocks</b>	a minor earthquake that precedes a major one at the same place.
<b>Richter Scale</b>	a logarithmic scale from one to ten that is used to measure the intensity and magnitude of an earthquake.



#### Largest Earthquakes Record

1. Valdivia, Chile- 22<sup>nd</sup> May 1960 (measuring 9.5)
2. Sumatra, Indonesia- 26<sup>th</sup> December 2004 (measuring 9.3)
3. Prince William Sound, Alaska, USA- 27<sup>th</sup> March 1964 (9.2)
4. Kamchatka, USSR- 4<sup>th</sup> November 1952 (9.0)
5. Arica, Chile- 13<sup>th</sup> August 1868 (9.0)

#### Key Knowledge

Although the ground we walk on seems completely solid, the Earth is actually made up of huge pieces of flat rock called **tectonic plates**. These move very, very slowly, and places where they meet are called **faults**.

When these plates rub together, the movement forces **waves of energy** to come to the earth's surface. We feel this on the Earth's surface as an earthquake. Earthquakes can sometimes be nothing more than small tremors or shakes, but sometimes they can cause damage and devastation.

Earthquakes can make **buildings** fall down and set off **landslides**, as well as having many other deadly effects. An earthquake that occurs at the bottom of the sea can push water upwards and create massive waves called **tsunamis**.



## Geography: Lilac Class – Earthquakes

### What makes the world grumble and shake?

#### Interesting Facts

- **Earthquakes involve the powerful movement of rocks in the Earth's crust.** The rapid release of energy creates **seismic waves** that travel through the earth.
- **Seismometers** are used to measure the magnitude of earthquakes. You are unlikely to feel a magnitude 3 earthquake but magnitude 6 earthquakes could potentially cause large damage.
- A **Richter Scale** is a device that gauges the magnitude (the energy it generates) of the earthquake. It was originated by American geophysicist Charles Francis Richter.
- The **largest recorded earthquake** in the world was a magnitude 9.5 in Chile on May 22, 1960. More recently, an earthquake that hit the Tohoku region of Japan on March 11, 2011, had a magnitude of 9.0 and killed over 15,000 people.
- **Alaska** is the most earthquake-prone state in the world.
- It is important for earthquake-prone countries such as Japan to build houses and buildings that react well to earthquakes. Good **engineering** can help stop buildings collapsing under the stress of large earthquakes, for example by building structures which can 'wobble' when an earthquake hits.
- In Ancient Greece, people believed that the god of the sea, **Poseidon**, caused earthquakes. When he was angry, Poseidon would strike the ground with his trident and set off an earthquake. His unpredictable, violent behaviour earned him the nickname 'Earth-Shaker'.
- Tectonic plates move less than 3 inches (17 cm) per year. However, a **tectonic plate movement** of just 20 cm is enough to set off a major earthquake.
- Scientists think that **animals may sense weak tremors before a quake**. Other scientists think that animals may sense electrical signals set off by the shifting of underground rocks.

#### Key Knowledge

The **Ring of Fire** is the geographical area around the edges of the Pacific Ocean. It is called so because it is shaped as a horseshoe and it has more exploding, active volcanoes and earthquakes than any place on the earth. It stretches for 40,000 kilometres and has 755 of the world's volcanoes. 80% of the world's earthquakes occur in this area.

