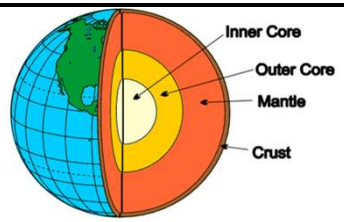
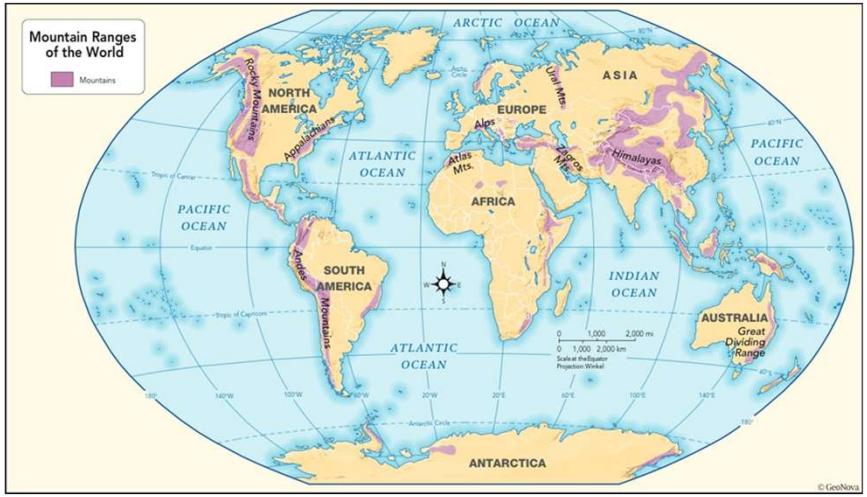
# Mountains, Volcanoes & Earthquakes | Year 3 | Spring 2

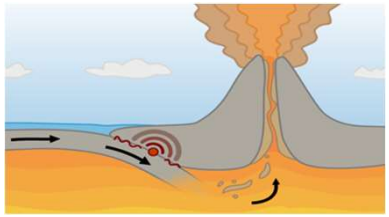



| | Structure of the Earth |
|---|---|
| **Crust**: | solid rock; 0-60 km thick; continental (granite) and oceanic (basalt); broken into tectonic plates |
| **Mantle**: | liquid/molten rock; ~2,900 km thick |
| **Outer core**: | liquid metal; iron and nickel; ~4400°C |
| **Inner core** | solid metal; iron and nickel; ~6100°C |

| Keywords | |
|---|---|
| Magma | Molten rock in the mantle |
| Lava | Magma that has reached the surface |
| Pressure | Physical force (pressure builds up when tectonic plates lock together and can't move) |
| Friction | Resistance or difficulty in moving. Tectonic plates are rough and so there is friction when they move. |
| Basalt | Dark-coloured volcanic rock. |
| Granite | Hard rock |
| Fold mountain | Mountains formed when tectonic plates collide and cause the plates to wrinkle |
| Ocean trench | A deep valley formed on the ocean floor where one tectonic plate subducts under another. |
| Tsunami | Large ocean wave caused by underwater earthquake. |




Earthquakes occur when plates jolt forward after getting stuck.



Volcanoes erupt when magma rises to the surface.


| | Volcanoes |
|---|---|
| **Shield volcano:** | Largest volcanoes on earth; wide base; low height; not steep. Example: Kilauea (Hawaii) and Erta Ale (Ethiopia) |
| **Stratovolcano (composite):** | Most of the world's volcanoes are composite volcanoes: made of layers of lava and ash; steep sides; tall. |

| | Tohoku 11/03/2011 9.0 Richter Scale | Fuego Volcano 03/06/2018 Explosivity Index 3 |
|---|---|---|
| Location | Japan | Guatemala |
| Primary Effects | 16,000 people died<br>4000 people missing<br>6000 people injured | 110 deaths<br>200 people missing<br>300 injured |
| Secondary Effects | Tsunami wave and flooding (reached 39 m high, travelled 10 km inland on eastern side of Japan)<br>Disruption to:: travel and farming | Heavy rain caused landslides<br>Hunger due to crops being destroyed<br>Disruption to travel and farming |
| Immediate Responses | Military aircraft identified areas needed most urgent help<br>Roads cleared to bring water/food/ medical care / tents | Search & Rescue teams clear roads to reach people<br>Water / food / medical care / tents<br>Evacuation |
| Long-term Responses | Continued training, education and earthquake drills<br>Rebuild infrastructure (roads, electricity, buildings) | Education and evacuation drills<br>New and improved emergency response systems<br>Rebuilding infrastructure |