Year 4 Mountains, Earthquakes and Volcanoes

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| Context:  Earth is made up of huge pieces of flat rock called **tectonic plates.**  Mountains are formed when huge areas of land hit each other. The surface of the earth is made up of lots of  different sections called tectonic plates. Mountains can be formed in different ways: when these plates collide or when magma can get from the centre of the earth up to the surface.  Concepts:  Place, space, environment, change |

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| Facts |  |
| 1.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. | Vocabulary  Core, mantle, crust  molten rock  viscous, magma  plates, plate boundary, plate tectonics  convection currents fault/fault lines  converge, anticlines  synclines,  erosion/weathering  rock strata  Seismic waves – waves of energy that travel through the Earth’s surface.  The word “volcano” comes from the Roman name “Vulcan” – the Roman god of fire.    Image result for 5 main parts of a volcano  Image result for epicentre[Image result for pacific ring of fire](https://www.google.co.uk/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=2ahUKEwigrKuz6JjjAhWFD2MBHSzBBTAQjRx6BAgBEAU&url=https://www.thoughtco.com/ring-of-fire-1433460&psig=AOvVaw30DKUPU6haA7M20cjv29xQ&ust=1562245567715744)https://www.ducksters.com/science/earth_composition.gifImage result for layers of the earth |
| 2.The structure of the earth is made up of four layers-inner core, outer core, mantle and crust |
| 3. The earth surface (crust) is made of different sections called plates. There are 8 major plates-Eurasian, Pacific, Indo-australian, Antartic, Nasca, North American, South American and African |
| 4.Tectonic plates can be on land (continental) or under the sea (oceanic). For the most part continental plates mark the boundaries of the seven continents |
| 5. Convection currents: The earths plates are constantly moving (on average between 1-10cm per year) |
| 6. Converging plates: Occasionally two plates move closer to each other or converge this creates intense pressure causing the plates to buckle in different ways. This process forms a mountain |
| 7. There are three types of mountain – dome, fold and fault block |
| 8. Notable mountain ranges  Himalayas Asia  Rocky mountains North America  Andes South America  Ural mountain Europe  Alps Europe  Pyrenees Europe |
| 9 Everest is the largest mountain above sea level |
| 10. **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. If the earthquake is beneath the ocean it can create a huge tidal wave, called a tsunami. |
| 11. Almost 80% of all the planet's earthquakes occur along the rim of the Pacific Ocean, called the "Ring of Fire"; a region that encircles the Pacific Ocean. |
| 12. The **epicentre** of an earthquake is the area on the surface, above the point where the earthquake originated. The speeds of the **seismic waves** enable scientists to locate the epicentre of an earthquake.  The **hypocentre** of an earthquake is the area below the earth’s surface; it is the place where the earthquake began |
| 13. Foreshocks are tremors that occur before the earthquake and aftershocks are tremors occur after the earthquake. |
| 14.The size of an Earthquake is measured using the Richter magnitude scale. |
| 15.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. |
| 16. A volcano is an opening in the Earth’s crust that allows magma, hot ash and gases to escape. Volcanoes can look like mountains or small hills, depending on what type they are. |
| 17. Main parts of a volcano :   1. Magma chamber - a large pool of liquid rock beneath the surface of the Earth. 2. Conduit – underground passage magma travels through.   Vents - an opening in Earth's surface through which volcanic materials   1. escape. 2. Crater - mouth of a volcano 3. Slopes – sides of the volcano |
| 1. Types of volcano: 2. cinder cone volcanoes have steep, straight sides 3. composite volcanoes have a small summit crater   c)shield volcanoes are about 20 times wider than they are high. |
| 1. States of a volcano: 2. Active – eruptions can be anytime and often 3. Dormant – been a while since it erupted but could at anytime   c)Extinct – hasn’t erupted in a very long time and probably won’t ever again |
| 1. Living near volcanoes:   The land around volcanoes is often fertile with nutritious, rich soil and this often attracts settlers and farmers. |
| 1. Volcanoes don’t just occur on land, they can be found on the ocean floor |
| <https://youtu.be/S9ty-ta1wyI> (How mountains are formed you tube clip)  <https://www.bbc.co.uk/bitesize/topics/z849q6f/articles/z4g3qp3> Natural world - mountains  <https://www.rgs.org/schools/teaching-resources/mountains,-volcanoes-and-earthquakes/>  <https://www.nationalgeographic.com/science/earth/surface-of-the-earth/mountains/>  <https://www.youtube.com/watch?v=dJpIU1rSOFY>  <https://www.3dgeography.co.uk/what-is-a-volcano> |