

## Glossary [1]

The glossary below consists of terms used in the standard background pages and easy background pages.

### **active fault**

A fault that is likely to have another earthquake sometime in the future. Faults are commonly considered to be active if they have moved in the last 10,000 years.

### **Alpine Fault**

Major fault line running through the South Island where the Indo-Australian and Pacific Plates collide.

### **ash**

Volcanic ash consists of rock, mineral, and volcanic glass fragments, which are slightly larger than the size of a pinhead. Volcanic ash is like finely crushed window glass and is not soft like ash from wood and paper. It is made from rocks, which have shattered into tiny pieces during an eruption.

### **basalt**

Basalt is a hard, fine-grained black volcanic rock. It has a low viscosity, which means it can flow easily. The main minerals in basalt include olivine, pyroxene, and plagioclase. Basalt erupts at temperatures between 1100°C to 1250°C. Basalt is the most common rock type in the Earth's crust.

### **caldera**

A caldera is a large depression formed when magma is erupted from a shallow underground magma reservoir and the overlying rock has collapsed. Calderas are different from craters. Craters are smaller and created mostly by the explosive excavation of rock during eruptions.

### **cone**

A volcanic cone is a cone shaped hill or mountain built by lava and ash, rocks, bombs and lapilli from a volcanic eruption.

### **continent**

An enormous, unbroken area of land. Earth's surface is divided into Europe, Asia, Africa, North America, South America, Australia and Antarctica.

### **continental drift**

The movement of the Earth's crust (plates).

### **crater**

A large bowl shaped cavity caused by an explosion or an impact. In reference to volcanoes, it forms after a volcanic eruption.

## **Glossary**

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### **crust**

The outermost layer of the Earth, ranging from 10 to 65km in thickness worldwide. The uppermost 15-3 km of crust is brittle enough to produce earthquakes.

### **density**

The weight of a known volume of material.

### **earthquake**

A sudden movement of the Earth's crust caused by the release of stress accumulated along geologic faults or by volcanic activity.

### **effusive-magmatic**

An effusive-magmatic eruption is one which is dominated by the outpouring of lava. There is little to no contact with water. Without the steam from water it is not as explosive as a phreatic-magmatic eruption. Hawaiian and Strombolian eruptions are examples of effusive eruptions.

### **epicentre**

The point on the Earth's surface vertically above the hypocentre.

### **erosion**

Process of wearing away and transporting of rocks by wind, rain or ice.

### **fault**

A break in rock across which there is observable movement.

### **fault trace**

A visible break in the surface of the land caused by movement along a fault.

### **fissure**

A long narrow crack in the ground caused by earthquakes.

### **focus**

See hypocentre.

### **focal depth**

The depth of an earthquake's hypocentre.

### **fold**

A rock layer that has been bent by pressure.

### **gas**

Dissolved gases from magma are released during eruptions. Gases may also be released from below the ground through vents and soil.

### **geologist**

A scientist trained in the study of the Earth.

### **geology**

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The science of the make-up, shape and history of the Earth.

### **geosyncline**

Massive trough (depression) in the Earth's crust which fills with sediments.

### **Gondwana**

When ancient Pangaea divided into two continents Gondwana was the southern land mass. It included most of Africa, Madagascar, India, Australia, Antarctica and parts of South America.

### **hydrothermal activity**

Hot springs, geysers and warm ground created by heat from nearby volcanic activity.

### **hypocentre**

The point on the fault plane where the rupture starts.

### **igneous rocks**

Rocks formed by the cooling and crystallisation of magma.

### **intensity**

A measure of how strongly an earthquake manifests at the surface, based on its observable effects on people, buildings and the environment. Intensity is usually ranked using the 12 point Modified Mercalli Intensity (MMI) scale.

### **Laurasia**

Northern ancient continent split off from Pangaea.

### **lava**

Magma becomes lava when it erupts onto the Earth's surface. It is also the name given to the rocks formed after it has solidified.

### **lava flow**

Lava flows are lava, which flows out during and after an eruption. A lava flow is both the liquid flowing lava and the solidified lava. The extent of the lava flow depends on the amount of lava emitted, the viscosity of the lava and the topography of the land.

### **lava lake**

During an eruption, if magma keeps rising around a vent or depression, then a lava lake can form in the crater.

### **liquefaction**

A process in which water-saturated sediment temporarily loses its strength and acts as a fluid.

### **magma**

Molten rock beneath the Earth's surface.

## Glossary

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### **magnitude**

A measure of the energy released by an earthquake at its source. Magnitude is commonly determined from the shaking recorded on a seismograph. Each unit of magnitude on the scale represents a substantial increase in energy, for example a magnitude 6 releases 30 times more energy than a magnitude 5.

### **Pangaea**

Gigantic land mass which was once the only continent on Earth.

### **phreato-magmatic**

When water beneath the ground or on the surface is heated by magma, phreato-magmatic eruptions occur. They are driven by steam and are very explosive.

### **plate boundaries**

The edges of the plates that make up the crust of the Earth.

### **plates**

Blocks of the Earth's continental and oceanic crust.

### **rocks**

Rocks are the hard mineral material of the Earth's crust. They can be either on the surface or under the soil. They are a mixture of minerals, mineral matter, or organic materials. Sedimentary rocks are formed by weathering and mechanical sorting on the Earth's surface. They include sandstone, limestone and shale. Metamorphic rocks are rocks that have been transformed by the effects of high temperature and pressure. They include schist, marble, and gneiss. Igneous rocks or volcanic rocks come from magma. They include basalt, andesite, and rhyolite.

### **Rūaumoko (or Rūamoko)**

According to Māori tradition earthquakes are caused by Rūaumoko - the god of earthquakes and volcanoes.

### **rū whenua**

The Māori word for earthquakes, which translated means the shaking of the land.

### **sandblows**

When waves from a large earthquake pass through wet, loose sand, patches of sand erupt from below the surface on to the ground and form sandblow deposits, **also nicknamed miniature sand volcanoes.**

### **scoria**

When magma rich in dissolved gases erupts, scoria is formed. When gases escape during an eruption, bubbles become trapped in the magma. These bubbles appear as small holes in the scoria, known as vesicles. Scoria is dark grey or black. It can turn reddish if it is oxidised.

### **scoria cone**

A scoria cone is made of scoria that has been erupted from a vent. The rock

## **Glossary**

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fragments are called scoria. It usually has a crater in the centre of its cone. Scoria cones range from tens to hundreds of metres high. Lava flows erupt from scoria cones through the top as lava fountains, through a breach or through a vent at the side of the cone. Scoria cones are also known as cinder cones.

### **sediment**

Small particles of rock carried by water, air or ice.

### **sedimentary rock**

Formed from particles of pre-existing rock, which are carried and deposited by water, wind or ice.

### **seismograph**

The chart made to record the ground movement of an earthquake detected by a seismometer.

### **seismometer**

A device used by scientists to measure the seismic waves or motion produced by earthquakes.

### **seismic waves**

The waves of energy released by an earthquake.

### **shield volcano**

A shield volcano is a cone with gentle slopes. They are built by basalt lava, which flows easily for long distances. Shield volcanoes also have lava tunnels, which keep the lava hotter for longer and carry it further. Viewed from above they look like a warrior's shield.

### **slumping**

When loosely consolidated materials or rock layers move a short distance down a slope.

### **strata**

A particular layer of a rock.

### **subduction zone**

The area or zone where two tectonic plates come together, one riding over the other.

### **swarm**

An earthquake swarm is a sequence of nearby earthquakes striking in a short period of time.

### **tectonic**

The idea that the Earth's surface is a series of moving plates.

### **tsunami**

A series of powerful ocean surges caused by a large volume of the ocean floor being

## **Glossary**

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displaced – often by an undersea earthquake or landslide.

### **tectonic uplift**

Elevation of the ground caused by plate movement.

### **vent**

Vents are openings, fissures or tiny cracks in the Earth's crust from which molten rock and volcanic gases escape.

### **viscosity**

The more viscous a material is the less likely it is to flow easily. The greater a material's viscosity the greater its resistance to flow. Basalt lava has a low viscosity so it is able to flow more easily and further than other lavas.

### **viscous**

If something is viscous it has a thick, sticky consistency between solid and liquid. It does not flow easily.

### **volcano**

A volcano is a vent at the Earth's surface through which magma and volcanic gases erupt. It is also the cone built by effusive and phreatic eruptions.

### **volcanologist**

Volcanologists are scientists who study volcanoes and try to predict whether an eruption is going to occur and, if so, when. Their predictions may save many lives. They also catalogue the various volcanoes and study them to learn about what goes on beneath the surface of the earth.

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