



### What should I already know?

- Italy is in Europe. Pompeii is a Roman city buried under ash from a volcano.
- There are igneous, sedimentary and metamorphic rocks.
- There is physical and human geography
- The names/locations of the seven continents – Africa, South America, North America, Europe, Asia, Oceania, Antarctica

### Ring of Fire

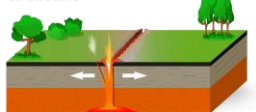
The Ring of Fire is a 25,000 mile line of volcanoes, tremors and earthquakes. The Ring of Fire contains 75% of the world's volcanoes. The Ring of Fire contains 90% of the world's earthquakes. The Ring of Fire is around the edge of the Pacific Ocean. The Mariana Trench is the deepest known trench in the ocean. Challenger Deep is the deepest known part of the ocean.

#### PLATE MOVEMENT

Conservative



Constructive



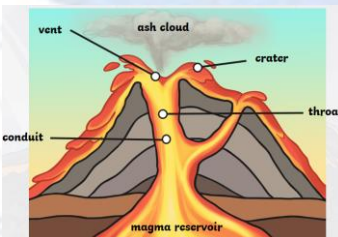
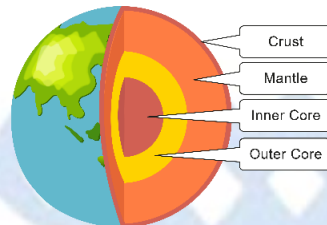
Destructive



### Earthquakes

- An earthquake is a sudden violent shaking of the ground, typically causing great destruction.
- Earthquakes usually occur on the edges of large sections of the Earth's crust called tectonic plates. They happen when two plates suddenly slip and a fault occurs. A fault is a crack or fracture in the Earth's surface.
- Earthquakes can cause huge waves in the ocean called tsunamis.
- Scientists use seismic waves to measure how big an earthquake is.
- They use a device called a seismograph to measure the size of the waves/magnitude. The magnitude is measured using the Richter Scale.
- The largest earthquake ever recorded in the world was in Chile in 1960. It measured a 9.6 on the Richter Scale

Mauna Loa in Hawaii is the largest active volcano.



### Values

Challenge	What challenges do earthquakes and volcanoes pose?
Commit	Why do we commit to living on faults?
Conquer	How do humans conquer earthquakes?
Celebrate	Is there anything to be celebrated about volcanoes?

### Tectonic plates

- The plates move 1-10cm each year.
- Alfred Wegener - These continents look like they "fit" together. They also have similar rock patterns and fossil records. These two pieces of evidence led me to believe that there was once a single land mass. This is my TECTONIC THEORY.

### Technical vocabulary

crust	the outer layer of Earth. It is about 18 miles thick. It is the part we live on.
mantle	Underneath the plates is thick, soft, hot flowing rock (magma) called the mantle.
core	The inner layer of the Earth.
plate tectonics	Earth's outer layer is made up of large, moving pieces called plates. All of Earth's land and water sit on these plates. The plates are made of solid rock.
Pangaea	Scientists believe that 220 million years ago, today's continents may have all been joined together as one supercontinent called Pangaea.
convection currents	Convection Currents in the mantle mean that the crust moves.
magma	Hot fluid or semi-fluid material below or within the earth's crust from which lava and other igneous rock is formed on cooling.
volcano	An opening in the Earth's crust from which lava, ash, and hot gases flow or are ejected during an eruption. Usually a cone shaped mountain.
fault	A fault is a crack or fracture in the Earth's surface
earthquake	A sudden violent shaking of the ground, typically causing great destruction, as a result of movements within the earth's crust or volcanic action.
ring of fire	the regions of mountain-building earthquakes and volcanoes which surround the Pacific Ocean. Over half of the world's volcanoes arise in the Ring of Fire.
continental drift	The hypothesis that the continents have moved over time relative to each other.
friction	the resistance created when one surface rubs against another.
Richter scale	A scale used to measure the size of an earthquake
Mercalli scale	A scale based on what people see and feel during an earthquake
impact	Having an effect on something
tsunami	Series of waves generated from an underwater earthquake

### Types of volcanoes

- Active - eruptions can be anytime and often.
- Dormant - has been a while since it has erupted, but could at anytime.
- Extinct, meaning it hasn't erupted in a very long, long time so it probably won't ever again.

### Constructive

Small earthquakes and shield volcanoes

### Destructive

Big earthquakes and big volcanoes

### Conservative

Big earthquakes