



Extreme Earth-natural disasters

(Intention) What we intend to cover in our learning

- **What are natural disasters and how are they different from extreme weather and climate change?**
- **The internal structure of the Earth and the nature of the crust, mantle and cores**
- **The discovery of plate tectonics and how different plate boundaries can cause types of volcano and earthquake**
- **How volcanoes form and erupt**
- **To research famous volcanoes and eruptions from history**
- **To understand the positive and negative impacts volcanoes have on the land and its people**
- **What causes earthquakes and how are they measured and compared?**
- **To locate active volcanoes on a map in the ring of fire**
- **Tornadoes, hurricanes and typhoons**
- **Drought and flood- which areas are prone and why?**
- **How can wildfires be beneficial and why are they getting worse?**

• **(Implementation) Key words I will use and need to know:**

- **Hurricane** – an intense tropical storm with powerful winds and heavy rain. Other names for a hurricane include cyclone, typhoon and tropical storm.
- **Eye of the storm** – a relatively calm, clear area at the centre of a hurricane.
- **Active volcano** –one that has erupted recently, and there is the possibility that it may erupt again.
- **Dormant volcano** –one that has not erupted for a long time, however, it may still erupt in the future.
- **Extinct volcano** –one which hasn't erupted in at least 10,000 years, and that won't erupt again for a very long time.
- **Molten** – something made into a liquid by heat.
- **Magma** – hot fluid or semi-fluid below the earth's crust.
- **Tectonic plate**– segments of the Earth's crust that move in relation to one another which can cause earthquakes or volcanic eruptions.
- **Drought**- Prolonged shortage of rainfall.
- **Tsunami**- a tidal wave.

(Implementation) Key knowledge we will learn:

- A natural disaster is an event caused by nature. They cause great financial hardship for people and sometimes even result in loss of life. They can be rare weather events or caused by seismic activity.
- **The Earth is made up of the crust, mantle and core. The hot temperatures under the Earth cause the crust's plates to move.**
- **The ocean and land rest upon these plates which move about, causing the oceans and continents to change.**
- **Plates that push or rub against each other at their boundaries can cause earthquakes, volcanoes and tidal waves.**
- **Volcanoes have generated over 80 of the Earths habitable surface and provide fertile soil for farming, but eruptions can destroy everything in their path.**
- **Tornadoes, hurricanes and cyclones are the same event in different places.**
- **Wildfires were often beneficial for clearing land for farming and creating fertile soils, allowing certain seeds to germinate.**

(Implementation) Things to do and find out at home:

Explore some of the topics on these sites:

www.bbc.co.uk/science/earth/collections/extreme_earth

http://www.bbc.co.uk/science/earth/natural_disasters

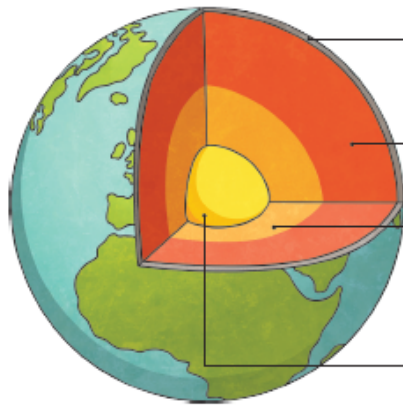
<http://www.nationalgeographic.org/topics/natural-disasters/>

<http://www.oxfam.org.uk/education/resources/dealing-with-disasters>

<https://www.coolkidfacts.com/tectonic-plate-facts/>

(Implementation) Some key pictures and facts linked to Extreme Earth

Layers of Earth



Crust

Thin outer layer. Hard rock. 10km–90km thick.

Mantle

Extremely hot rock that flows. 3000km thick.

Outer core

Iron and nickel. Mostly liquid with some rocky parts. 4000°C.

Inner core

Iron and nickel. Hottest layer at over 5000°C.

Tornadoes

- A tornado is a swirling funnel of air that forms when warm air rises from near the ground into big **cumulonimbus clouds**.
- There can be thunder and lightning at the same time.
- You can see tornadoes due to the dust and water droplets caught in the clouds.
- Storm chasers are film-makers and scientists who head towards the storms. They film the tornadoes and collect data about them.
- Most tornadoes happen in Tornado Alley in America – more than 500 each year.
- Tornadoes can happen in the UK but only around 30 per year.



Volcanoes

- Volcanoes are made when pressure builds up inside the earth. This affects the earth's crust causing **magma** to sometimes **erupt** through it.
- Active volcanoes have **erupted** in the last 10 000 years.
- Dormant volcanoes haven't **erupted** in the last 10 000 years but may erupt again.
- Extinct volcanoes aren't expected to **erupt** again.



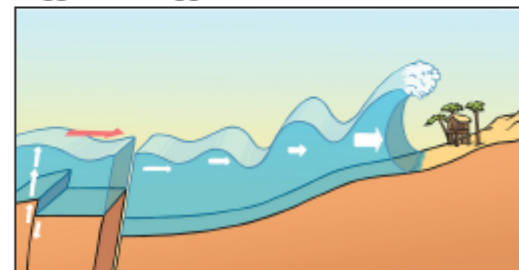
Earthquakes

- Earthquakes are caused when the earth's **tectonic plates** suddenly move.
- Most earthquakes occur near the **tectonic plate** boundaries.
- Earthquakes can cause lots of damage to roads, buildings and property.



Tsunamis

- A tsunami is a giant wave caused by a huge earthquake under the ocean.
- The earthquake causes a large amount of water to be displaced very quickly causing a series of waves. As the waves travel through shallower water near land, they get bigger and bigger. The wave crashes onto the land causing devastation to buildings and sometimes even lives.



(Impact) What we will aim to do at the end of our learning:

All children should be able to:

Name the layers that make up the Earth. • Name the key parts of a volcano. • Show where most volcanoes are found. • Explain how to keep safe during an earthquake. • Describe a tsunami. • Describe the damage caused by a tsunami. • Explain how tornadoes form. • Describe how scientists collect data about storms.

Most children will:

Describe the properties of the Earth's layers. • Explain how a volcano is formed. • Describe what happens when a volcano erupts. • Describe some risks and benefits of living near a volcano. • Explain why earthquakes occur. • Explain how tsunamis occur. • Explain how to keep safe in a tsunami. • Explain where tornadoes happen.

Some children will:

Compare the structure of the Earth to a common object. • Categorise volcanoes as extinct, dormant or active. • Explain the impact of volcanoes on people and the environment. • Compare the strength of earthquakes. • Explain how scientists compare tornadoes.

(Impact) The children will be assessed against these National Curriculum Programmes of Study:

Human and physical geography

Describe and understand key aspects of:

Physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle;

Human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

- Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied