Spring Term: 1st Half

Geography - Rocks, Relics and Rumble

Programme of study:

- Locate countries and major cities in Europe (including Russia) on a world map concentrating on their environmental regions, key physical and human characteristics, countries, and major cities.
- Name and locate significant volcanoes and plate boundaries and explain why they are important.
- Locate significant places using latitude and longitude.
- Classify, compare and contrast different types of geographical features.
- Describe how a significant geographical activity has changed a landscape in the short or long term.
- Describe the activity of plate tectonics and how this has changed the Earth's surface over time (continental drift).
- Name and describe the types, appearance and properties of rocks.
- Describe the parts of a volcano or earthquake.
- Name and describe properties of the Earth's four layers.

Rocks, Relics and Rumbles

Structure of Earth

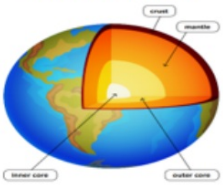
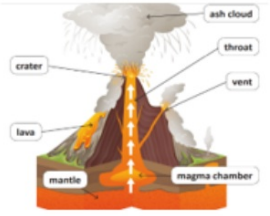


Plate tectonics

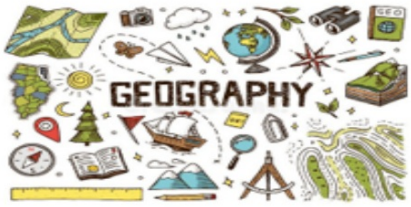
Sedimentary rocks	Igneous rocks	Metamorphic rocks
sandstone	granite	marble
limestone	obsidian	slate

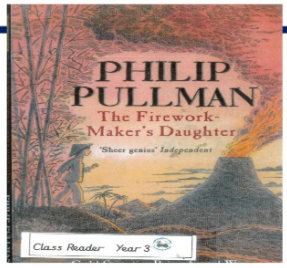


Key vocabulary	
Human geography	How human activity affects or is influenced by the Earth's surface.
Physical geography	Natural features of the Earth's surface.
Tectonic plate	A large slow; moving piece of rock that makes up the earth
Place knowledge	Environmental regions, countries, continents, cities, and key topographical features of an area.
Location knowledge	The specific area where a place is situated. It usually has absolute coordinates
Longitude	Imaginary lines that run around the Earth vertically (up and down) and meet at the North and South Poles.
Latitude	Imaginary lines that run around the Earth horizontally (across) parallel to the Equator.
Equator	An imaginary horizontal line around the middle of Earth halfway between the North Pole and the South Pole.
Capital city	A capital is a city where a region's government is located.

What I know now:

What I currently know:





Area of geography	Your understanding
Location knowledge	The exact place where somewhere is.
Place knowledge	The country or continent where somewhere is.
Human and Physical geography	Physical – Natural features of the Earth. Human – How human activity affects the Earth.
Geographical skills and fieldwork	Map reading and collecting information.


Craft supplies
200ml bottle
niceday

We will need to add:

- 2 pouches of baking powder
- squirt of fairy liquid
- a few drops of red food colouring
- 2/3 full of water and vinegar (add LAST)

Thursday 6th January

L.o To know the layers of the Earth and that the crust is broken up into huge areas called Tectonic plates.

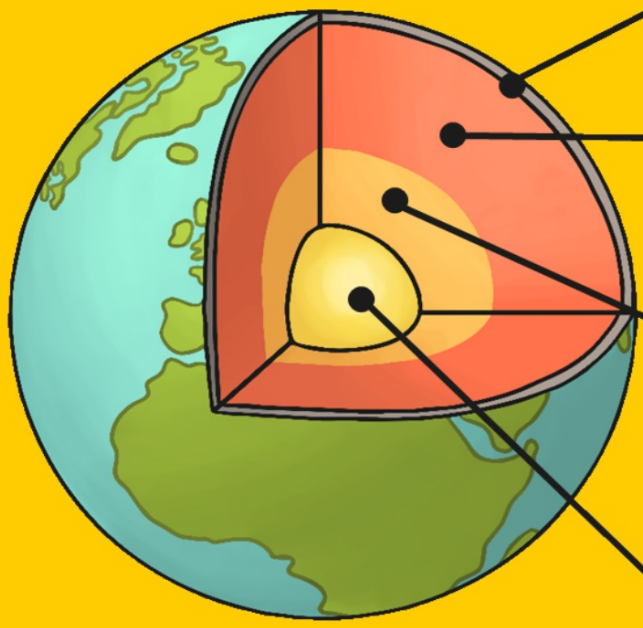
Imagine you are digging this hole.

What is at the bottom of the hole?

What different things might you find as you are digging?

Where would you end up?

Layers of the Earth



The **crust** is the thin outer layer of col
hard rock that covers the world
(10km-90km thick).

The **mantle** (extremely hot rock that
often flows like treacle) is 3,000 km thi

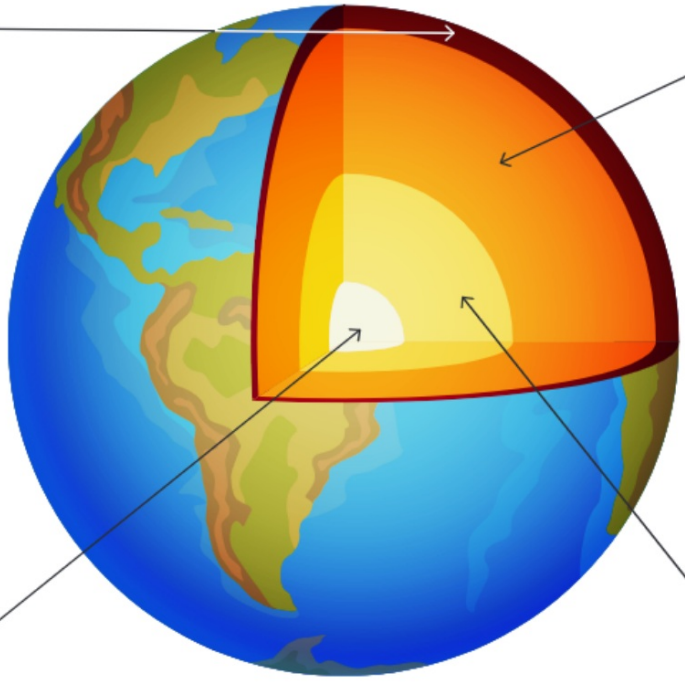
The **outer core** is mostly made of iron
with some nickel. It is over 4000°C. It
mostly liquid with some rocky parts.
Because the outer core moves around th
inner core, Earth's magnetism is created

The **inner core**, which is made of iron
and nickel, is the hottest layer at over
5000°C. It melts the metals in the outer
core to form magma.

Earth is made up of **four** layers.

crust
solid rock

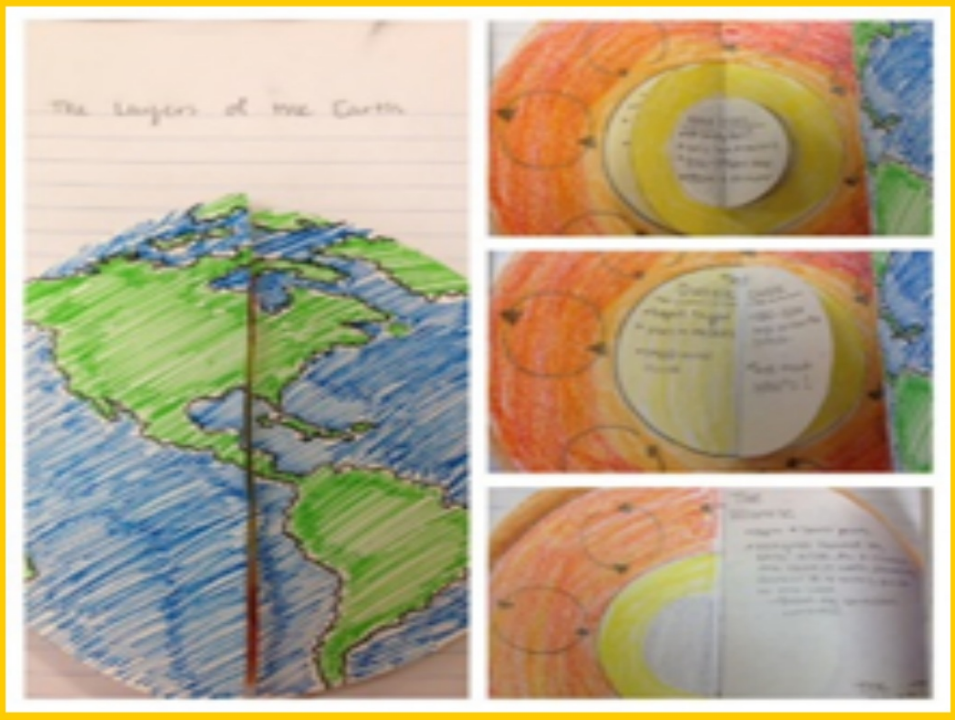
mantle
solid and molten rock



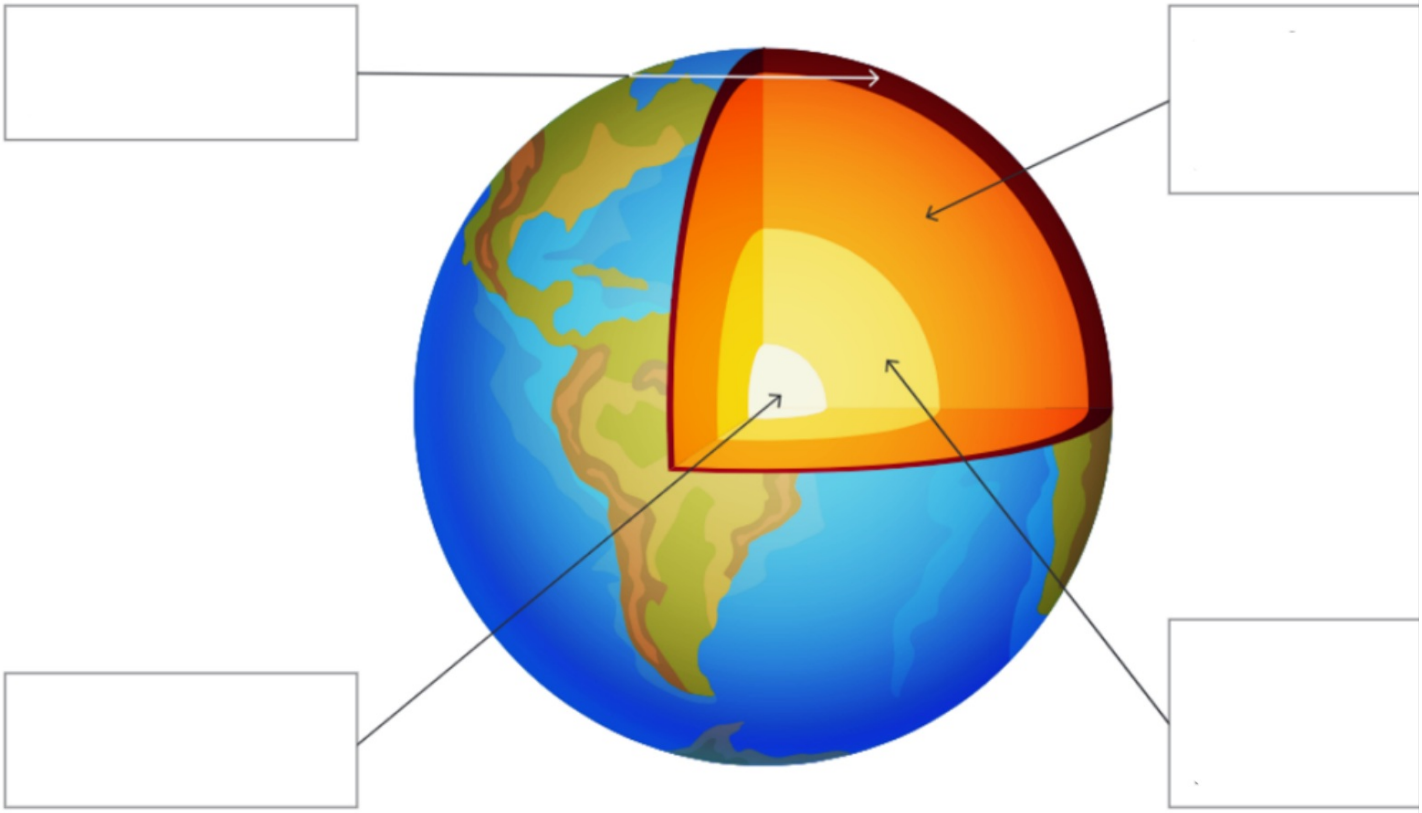
inner core
hot, solid metal

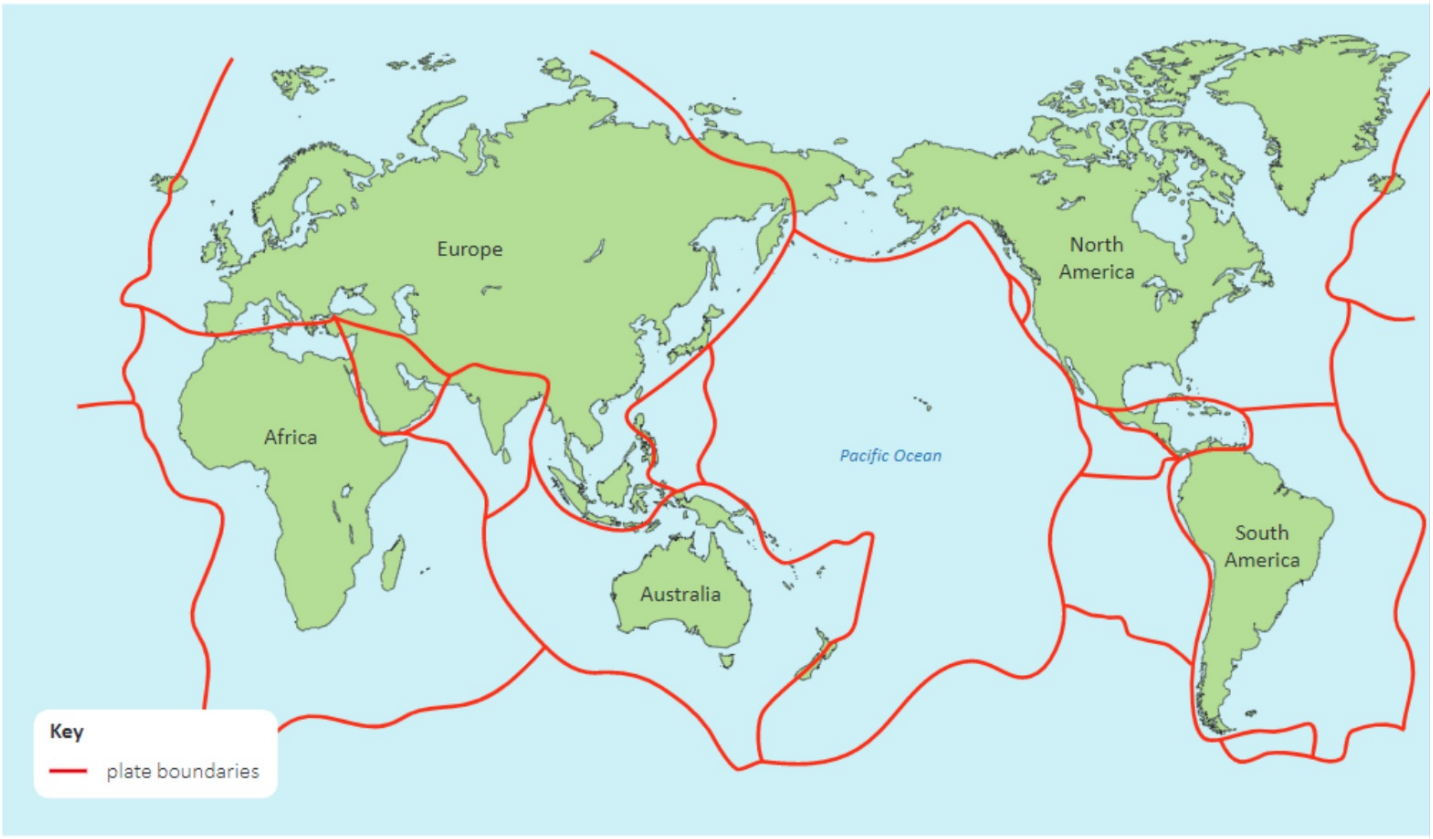
outer core
hot, molten metal


the
Binocs
SHOW

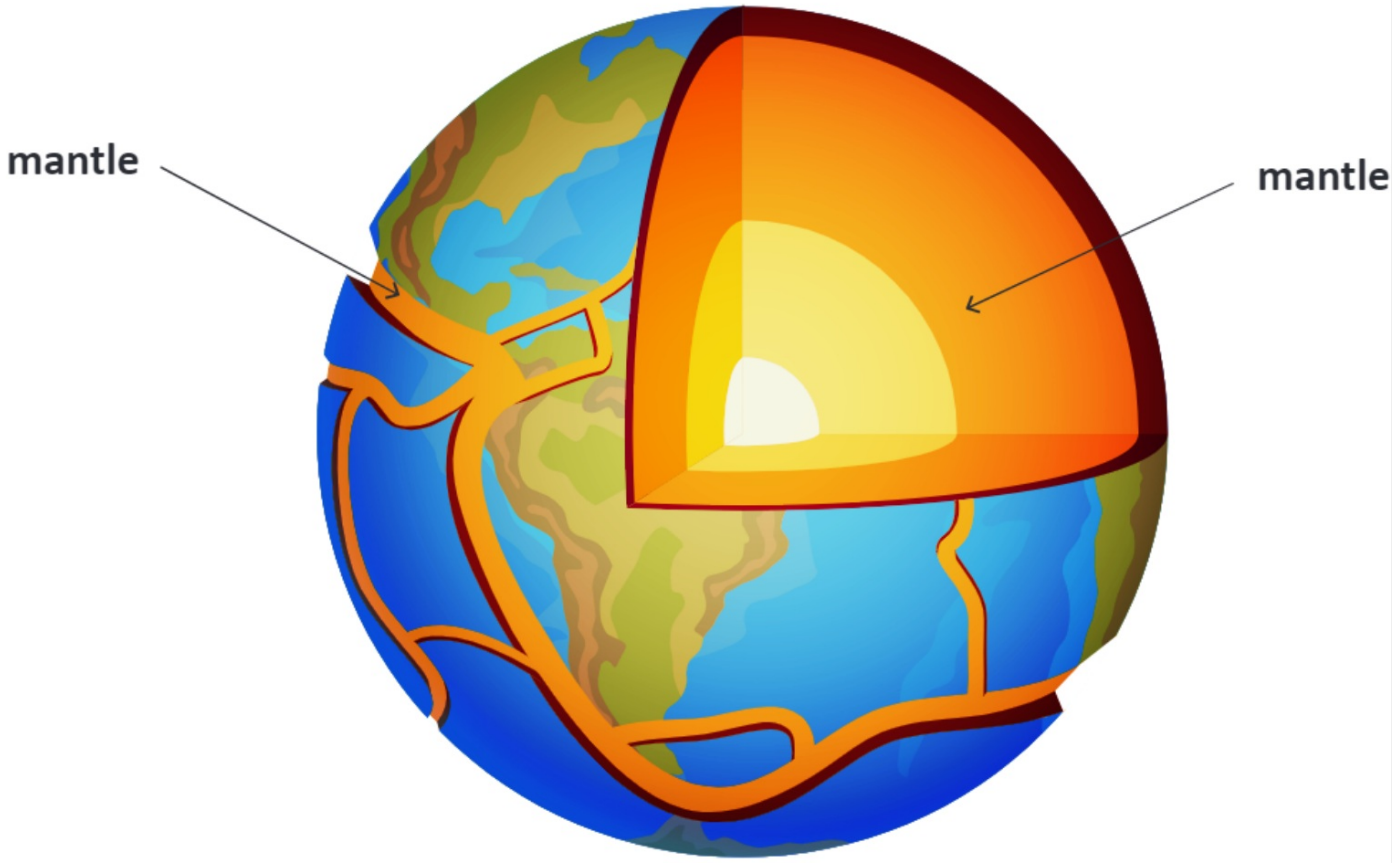

The Layers of the Earth

Earth is made up of **four** layers.

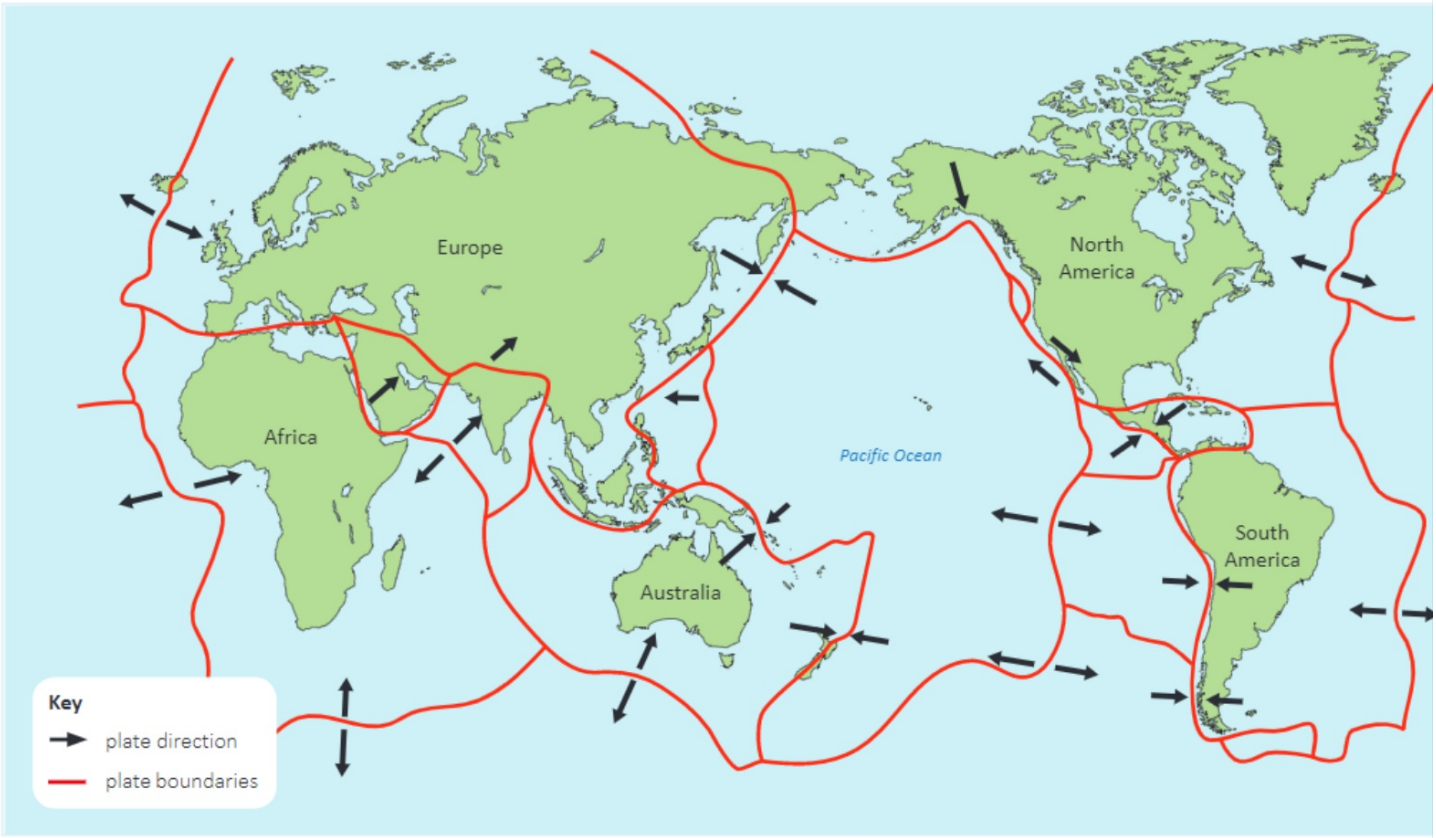




The Earth's crust is made up of different pieces called **tectonic plates**.
Where tectonic plates meet is called a **plate boundary**.

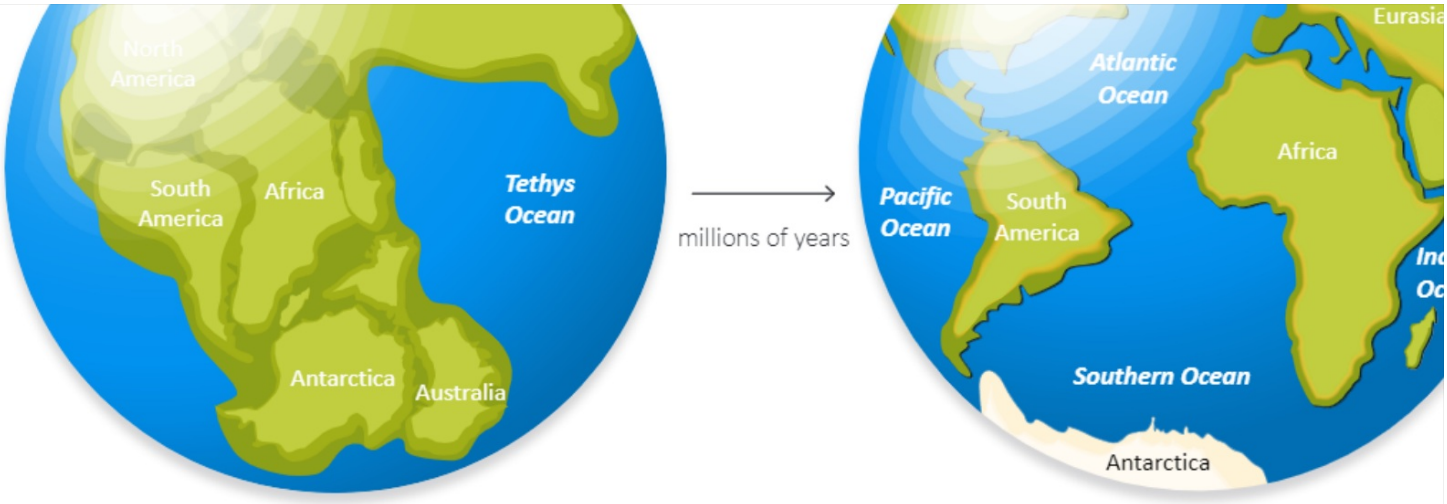


The tectonic plates float on top of the **mantle** and are constantly moving.



Tectonic plates move very slowly.
They can **push** together, **pull** apart or **slide** past each other.

Over 200 million years ago, all of Earth's continents were joined together a one **supercontinent** called **Pangaea**.



Over millions of years, the supercontinent broke up and the pieces moved away from each other to form separate continents. This process is called **continental drift**.

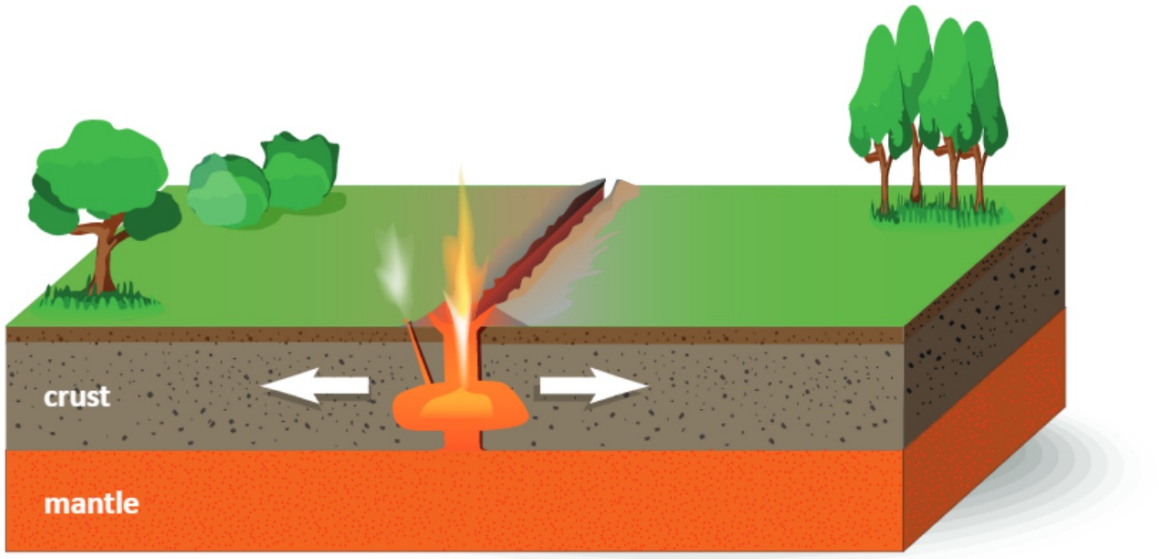
Examples

The Himalayas in Nepal and the Andes in Argentina were formed over millions of years by tectonic plates pushing together.

Himalayas, Nepal

Andes, Argentina

Divergent plate boundaries



Divergent plate boundaries are when two tectonic plates pull apart. At divergent plate boundaries, a gap forms in the Earth's crust that is filled with magma rising from the Earth's mantle. Mountains and volcanoes form over millions of years along the gap.

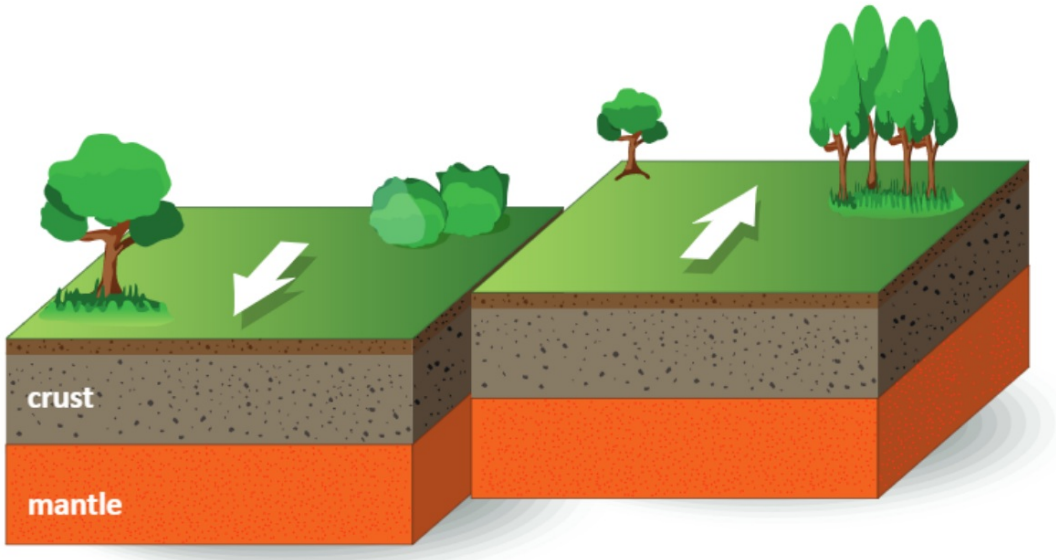
Examples

The Great Rift Valley in Kenya and the Thingvellir Valley in Iceland were formed over millions of years by tectonic plates pulling away from each other.

Great Rift Valley, Kenya

Thingvellir Valley, Iceland

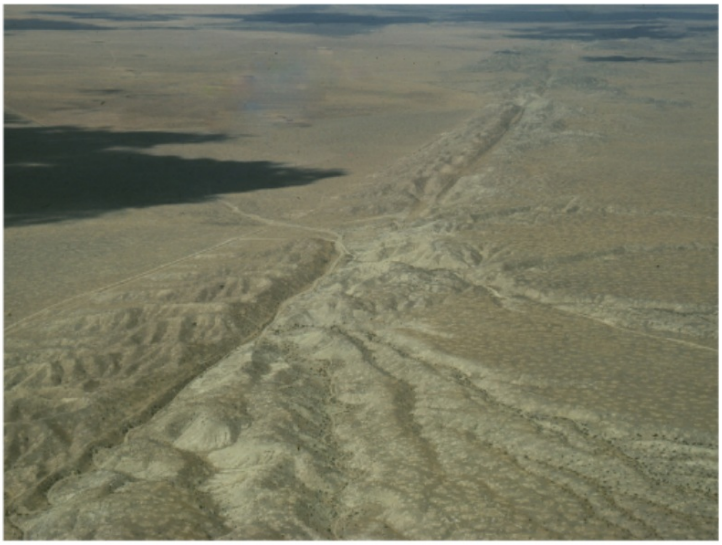
Transform plate boundaries



Transform plate boundaries are when two tectonic plates slide against each other. This sliding at transform plate boundaries cause earthquakes. If the tectonic plates get stuck as they slide, pressure builds up. When they release, major earthquakes can occur.

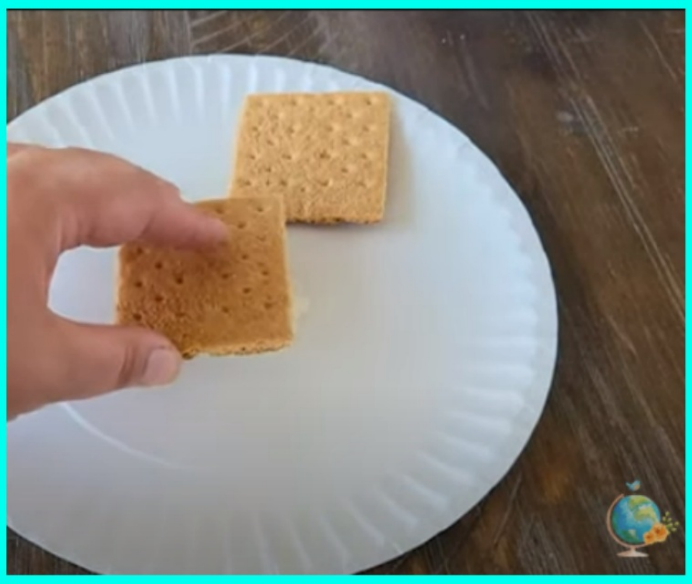
Examples

The San Andreas Fault in the United States of America and the North Anatoli
Fault in Turkey were formed by tectonic plates sliding past each other.



San Andreas Fault, USA

North Anatolian Fault, Turkey



Big 6 Questions

Who?

Who discovered how volcanoes are formed?

When?

When was the firs volcano discovered

Where?

Where are volcanoes located?

How?

How are volcanoes formed?

Why?

Why do volcanoes erupt at the Ring of Fire?

What?

What causes volcanoes to erupt?

Plenary

What are the layers of the Earth called?

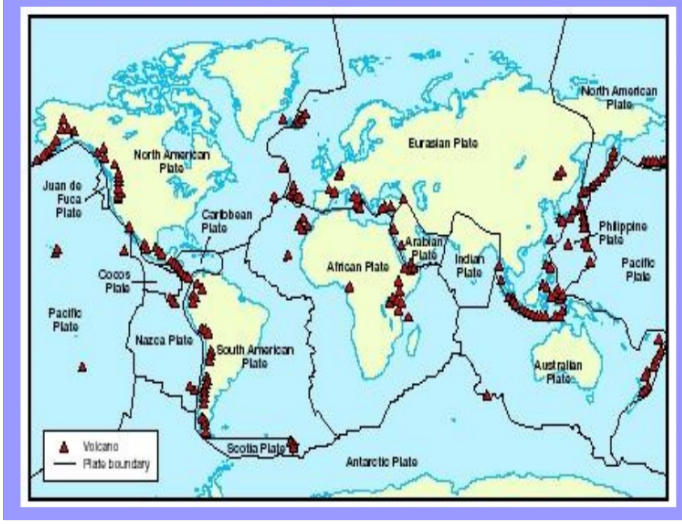
What are Tectonic plates?

Friday 7th January

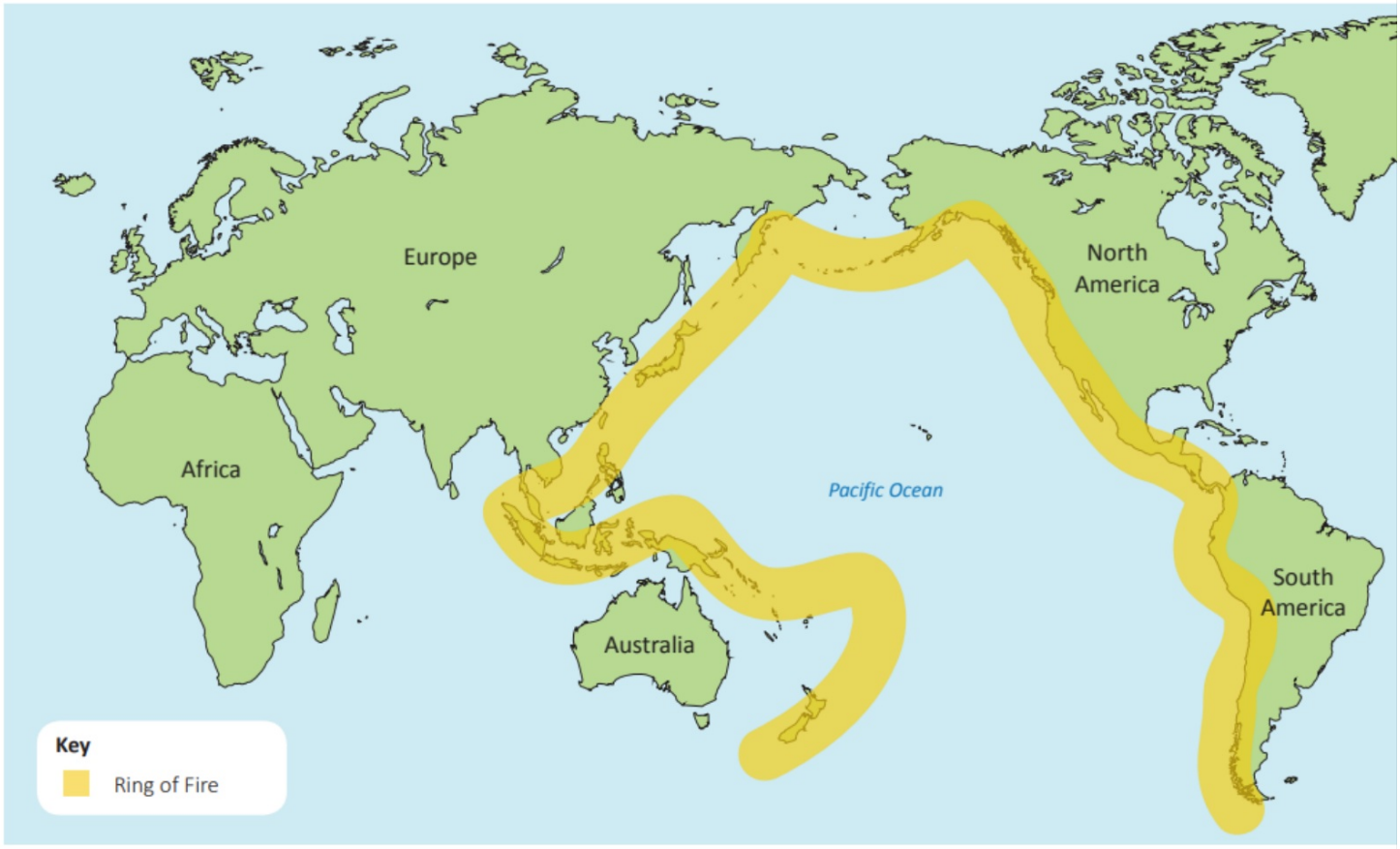
L.O Know that 3/4 of the world's volcanoes are located at the Ring of Fire

What is a volcano?

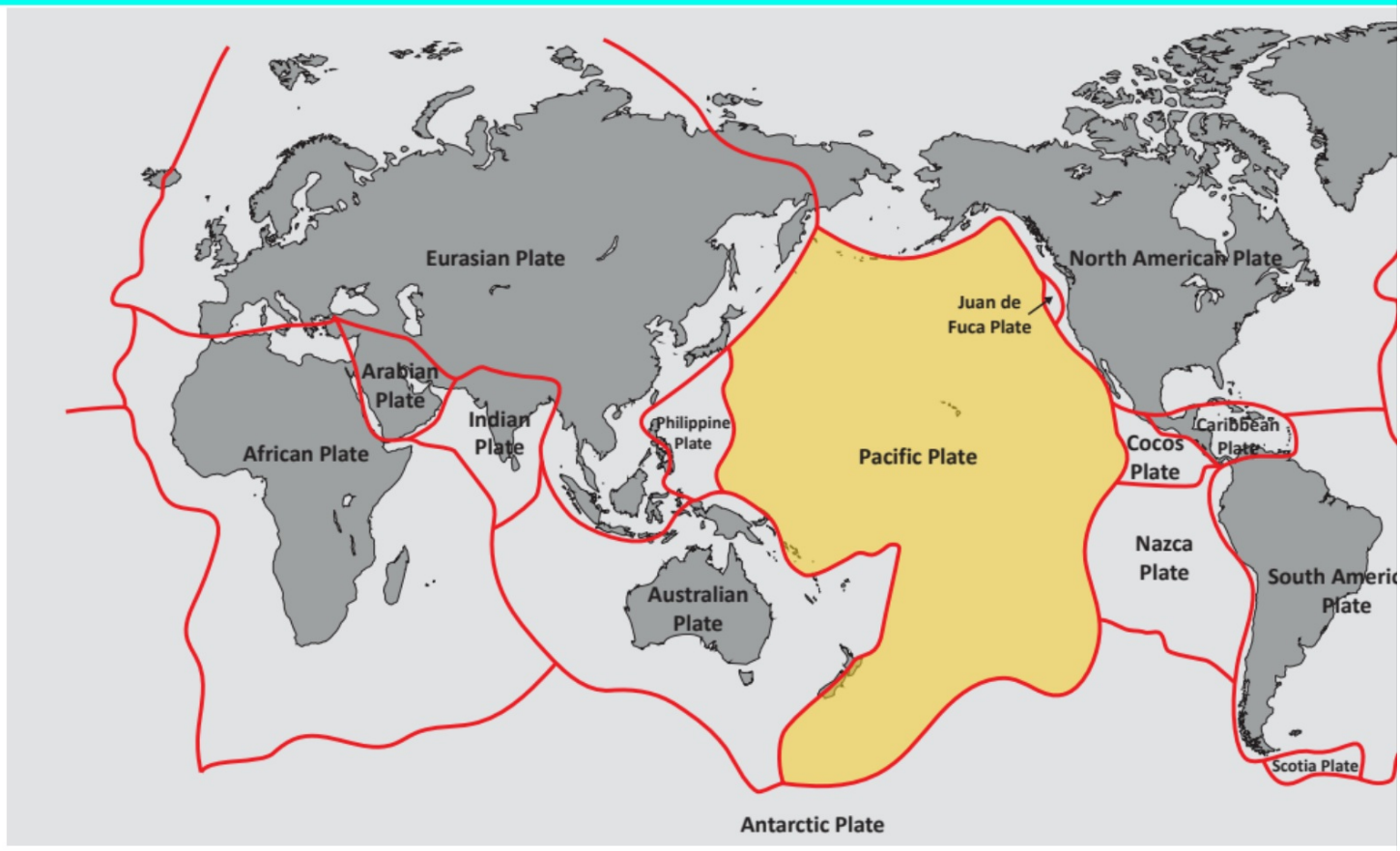
Watch these 2 clips on the ring of fire...



Ring of Fire

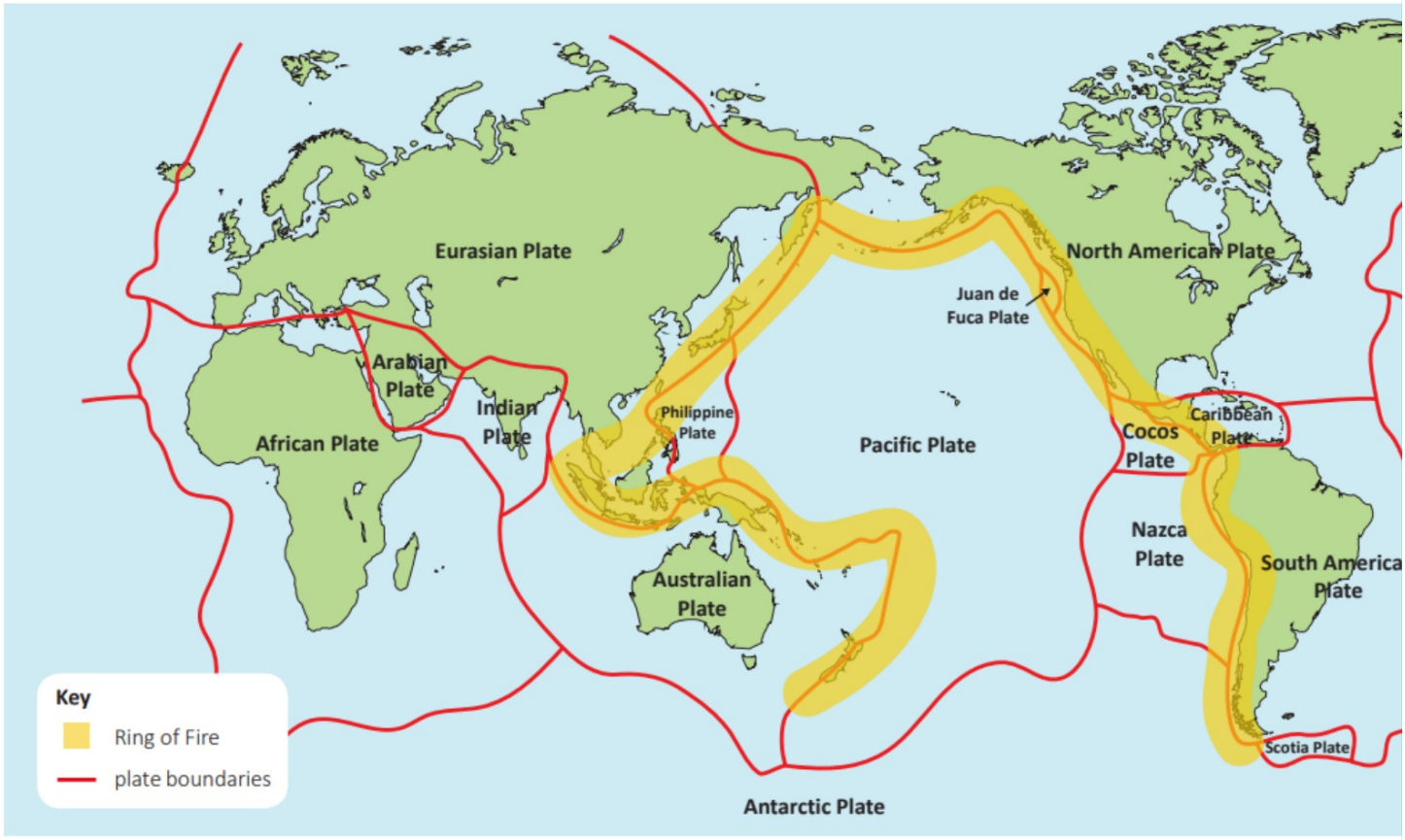


The **Ring of Fire** is a large area around the Pacific Ocean where many earthquakes and volcanic eruptions occur.

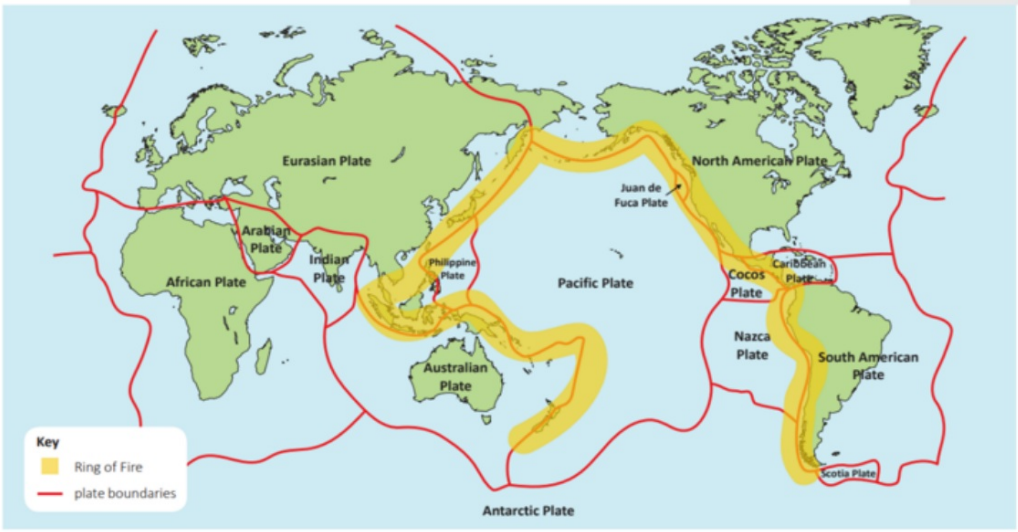


The Earth's crust is made up of different pieces of rock called **tectonic p**

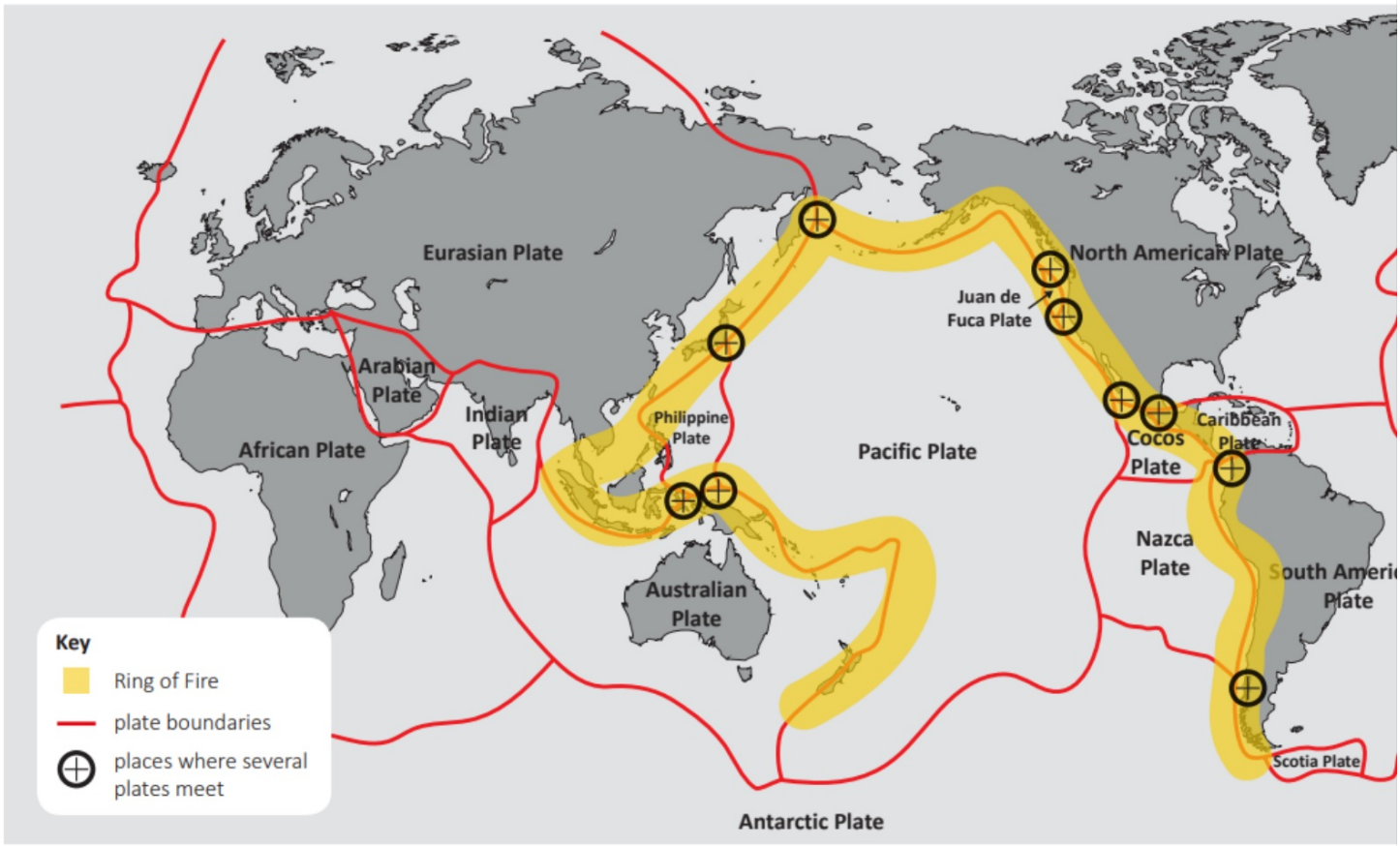
Most of the Ring of Fire is along the edge of the **Pacific Plate**.



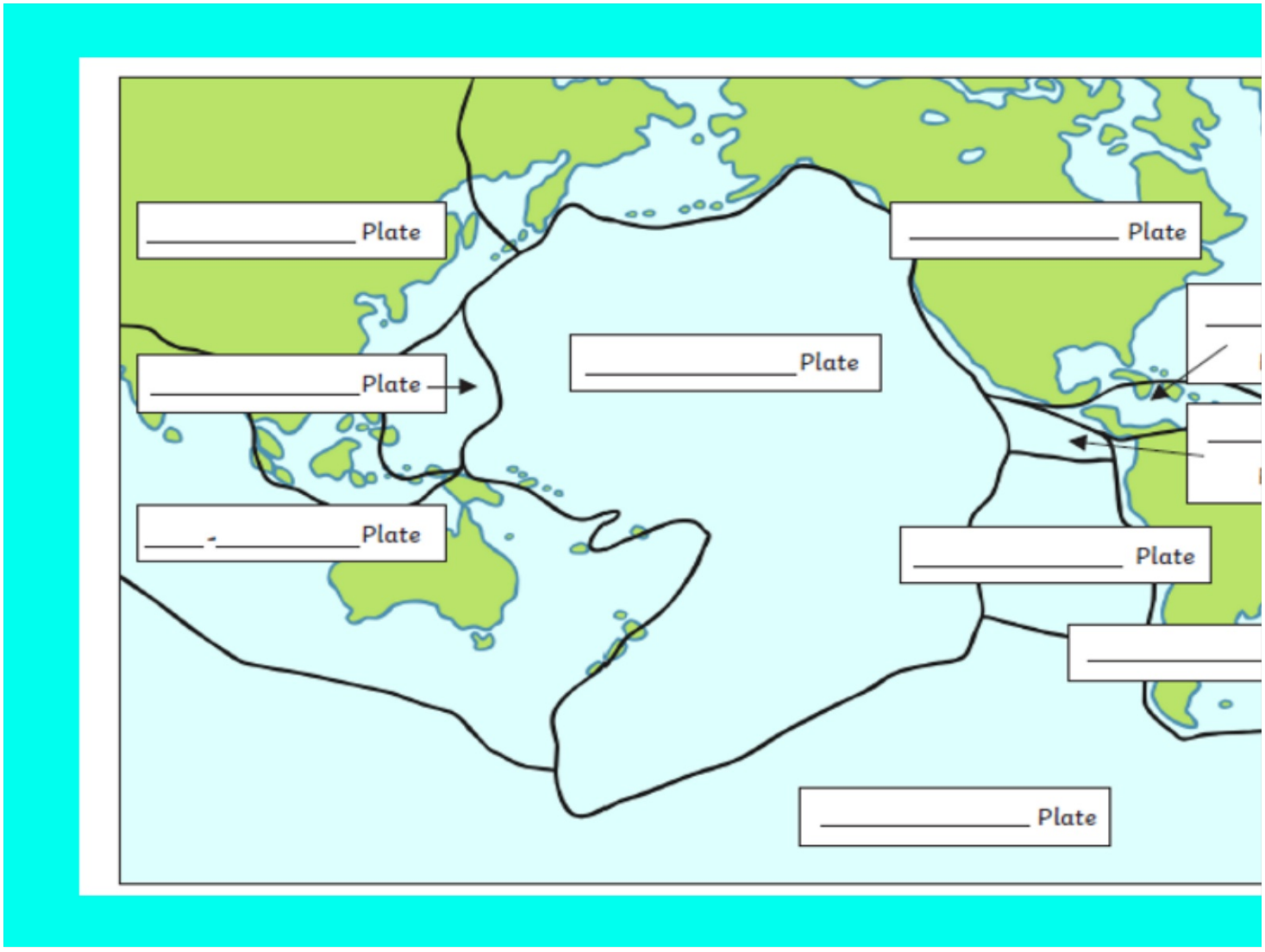
The places where tectonic plates meet are called **plate boundaries**. Movement
plate boundaries can cause earthquakes, volcanic eruptions and tsunamis



1. What are the places where tectonic plates meet, called?
2. What can happen when the tectonic plates move?



There are many earthquakes and volcanic eruptions along the Ring of Fire so many tectonic plates meet along it.


_____ Plate
_____ Plate
_____ Plate
_____ Plate
_____ Plate
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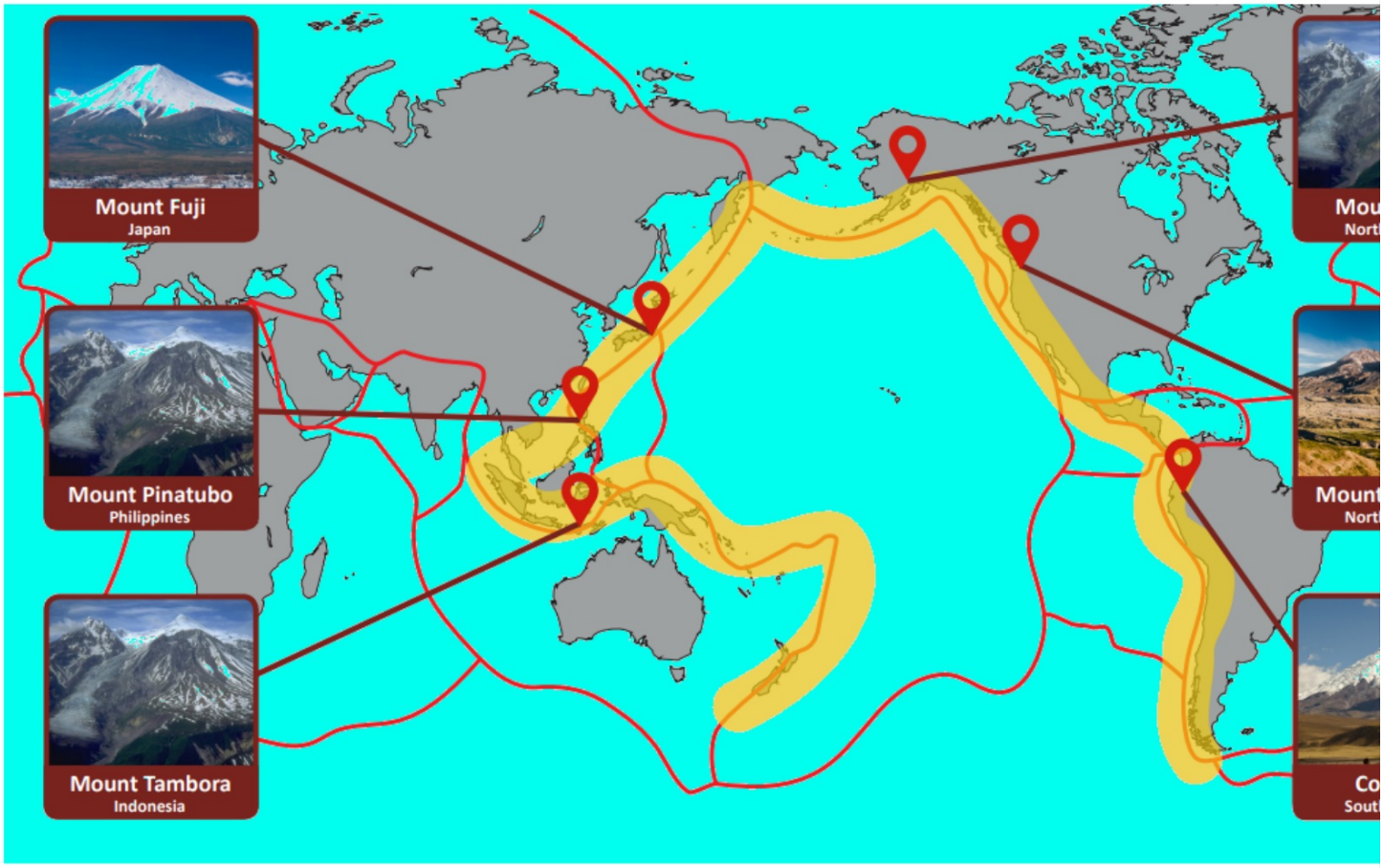
_____ Plate

Over three-quarters of Earth's volcanoes are along the Ring of Fire and it is also where most earthquakes happen.

1. Why are so many volcanoes located around the Ring of Fire?
2. How many volcanoes **are here?**
3. What else can happen in this area and why?



There are more than **450 volcanoes** along the Ring of Fire.

True	False
found urope.	The Ring of Fire is a large area where many earthquakes and volcanic eruptions occur.
ns or pen when into each de against	Tectonic plates move very quickly.
on top of lates.	The countries along the Ring of Fire are at a lesser risk of volcanic eruptions and earthquakes than anywhere else in the world.
an 450 ng of Fire.	All of Earth's volcanoes are found along the Ring of Fire.

Why is it good to live near a volcano?

When volcanic rock breaks down into dirt it becomes a mineral rich soil. These minerals provide food and life for all kinds of plants. Vegetables, grapes, herbs and flowers can grow in volcanic soil. It is a great area to start a farm.

Fertile Soil

complete together

Advantages of living by a volcano	Disadvantages of living by a volcano

Friday 14th January

L.O. To understand that volcanoes are formed when two tectonic plates collide.

We are studying: Rocks, Relics and ~~Rubles~~ Rumbles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

The layers of the Earth are crust, mantle, outer core and inner core.

3/4 of the world's volcanoes are located at the Ring of Fire.

The movement of tectonic plates can cause volcanoes.

Today we will learn:

What an active, dormant and extinct volcano are.

There are four main types of volcano : shield, stratovolcano, cinder cone and lava dome.

There are two types of explosions effusive and explosive.

We need to know this because:

It is part of physical geography and the earth we live on.

Volcanoes

What is a volcano?

A **volcano** is a mountain or hill with an opening in the Earth's crust that allows magma, gas and ash to reach the surface.

Types of volcanic eruption

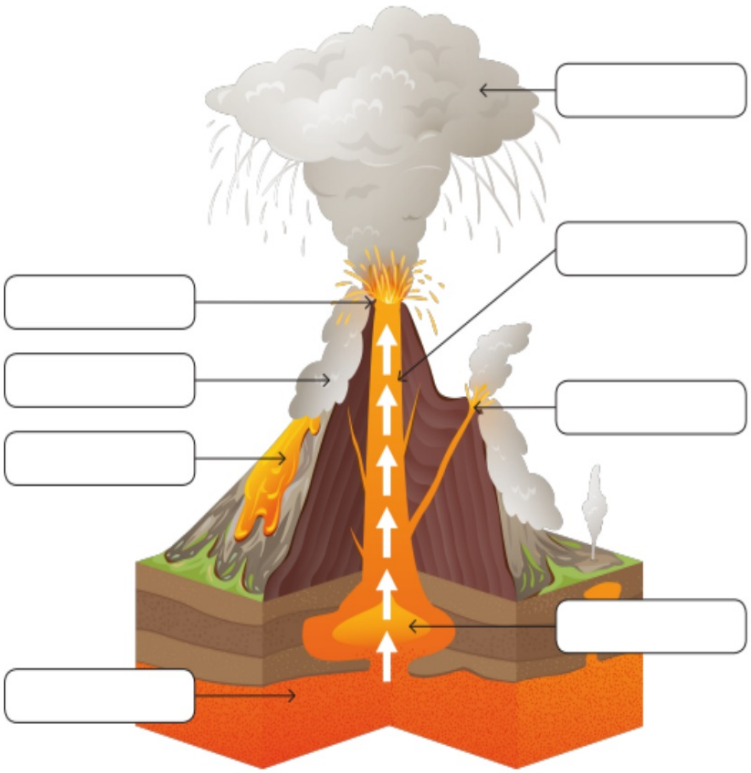
There are two types of volcanic eruption.

What are the two types of volcanic eruptions?

effusive

explosive

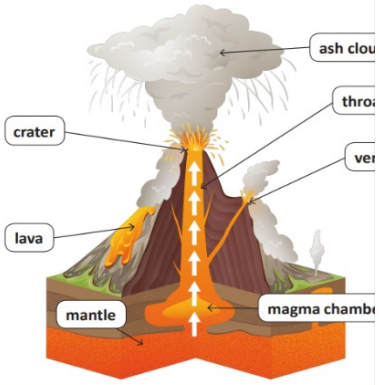
w and label a volcano

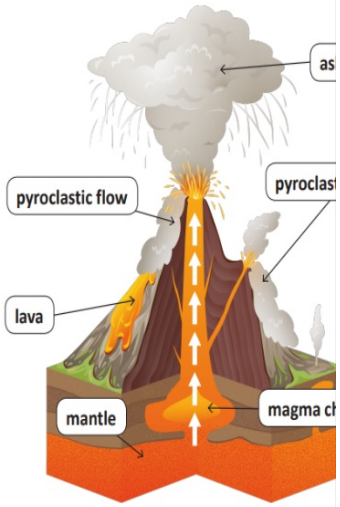


Useful words

- ash cloud
- crater
- lava
- magma chamber
- mantle
- pyroclastic flow
- throat
- vent

Stages of





Status of volcanoes

The status of volcanoes can be classified in three different ways.

active

dormant

extinct

What is active, doormant and exticnt?

Active – Mount Etna, Sicily

Active volcanoes have erupted at least once in the last 10,000 years and are probably going to erupt again.

What is an active volcano?

Dormant – Mauna Kea, Hawaii

Dormant volcanoes haven't erupted for more than 10,000 years but they may erupt again.

What is a dormant volcano?

Extinct – Mount Snowdon, Wales

Extinct volcanoes are not expected to erupt again and may no longer have a magma supply.

What is an extinct volcano?

Types of volcano

There are four main types of volcano.

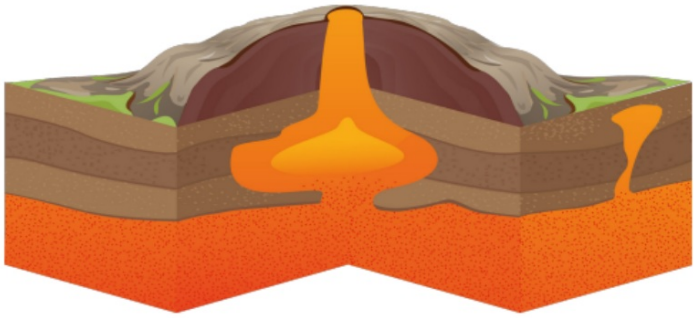
shield

stratovolcano

cinder cone

lava dome

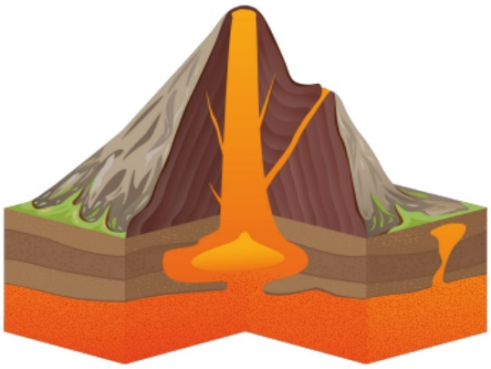
Shield volcanoes



Shield volcanoes have low,

s

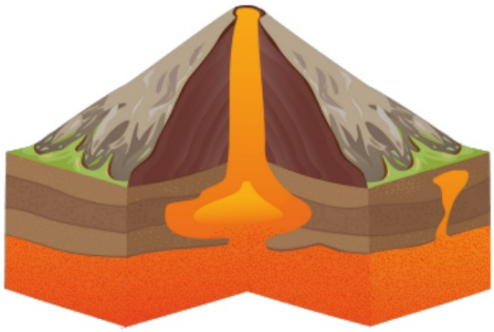
Stratovolcanoes



Stratovolcanoes are

ite

Cinder cone volcanoes



Cinder cone volcanoes are
sh
co

Lava dome volcanoes

Lava dome volcanoes are

si

cr

Plenary

Can you explain to your partner what an atcive, dormant extinct volcano are?

Friday 21st January

L.O. To use lines of longitude and latitude to locate volcanoes.

We are studying: Rocks, Relics and Rubles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

What an active, dormant and extinct volcano are.

There are four main types of volcano : shield, stratovolcano, cinder cone and lava dome.

There are two types of explosion effusive and explosive.

Today we will learn:

What the lines of longitude and latitude are.

Lines of latitude run horizontally and the lines of longitude run vertically.

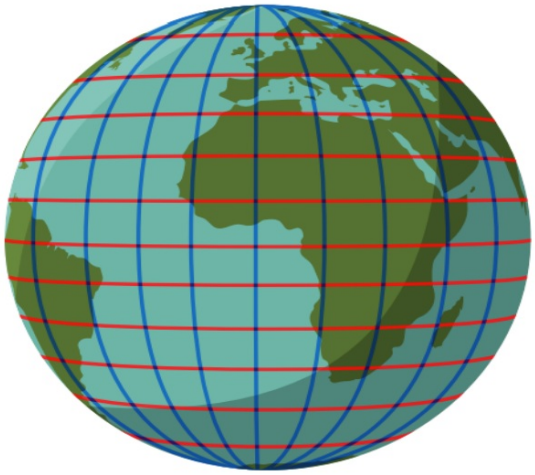
They help us to locate exact locations on Earth.

We need to know this because:

It will help us use lines of longitude and latitude to be able to locate places.

Latitude and longitude

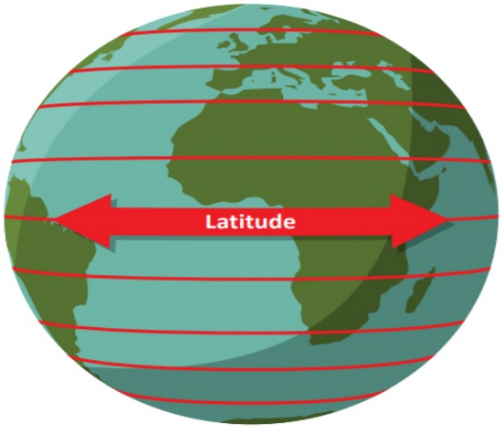
What are the lines of latitude and longitude?

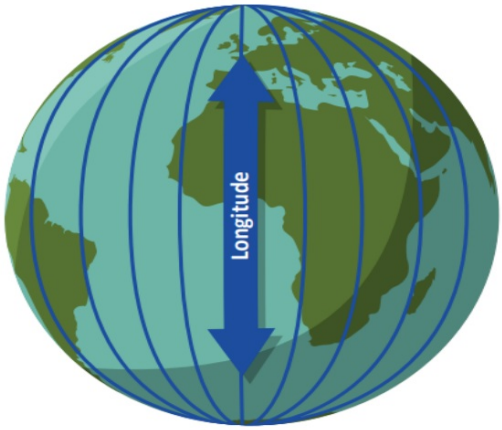


The **lines of latitude and longitude** are imaginary lines around Earth. They cross each other, forming a grid.

The lines of latitude and logitude are...

Lines of latitude and longitude



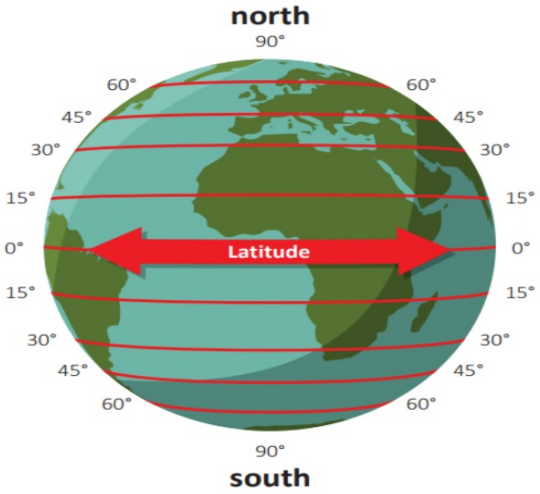


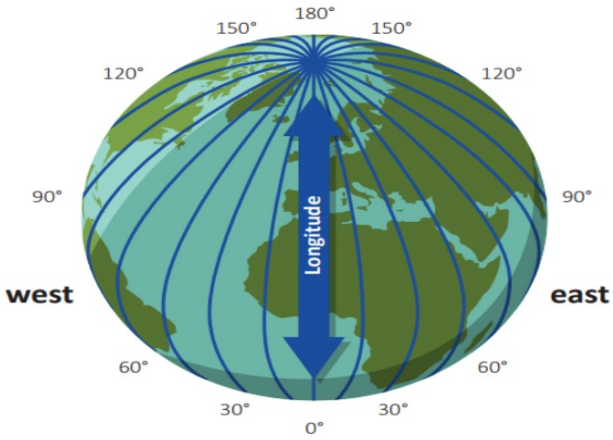
The lines of latitude run **horizontally** from east to west around Earth.
The lines of longitude run **vertically** from north to south around Earth.

The lines of latitude run....

The lines of longitude run....

What are their uses?

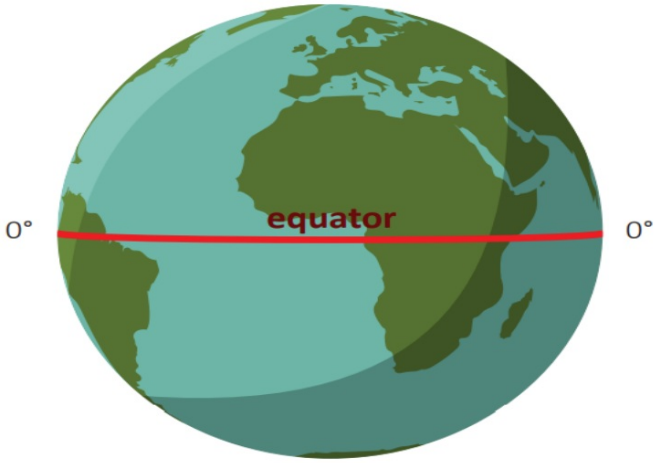


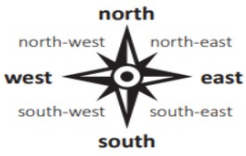


Lines of latitude and longitude are measured in **degrees**.
They help us to pinpoint exact locations on Earth.

They help us to.....

Equator



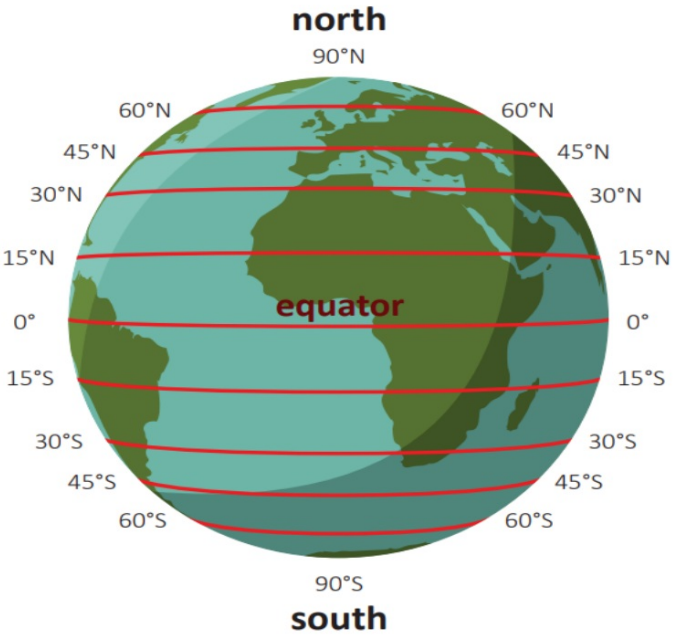


The **equator** is a special line of latitude. Its latitude is **0°**.
The equator is halfway between the geographical North and South Poles.

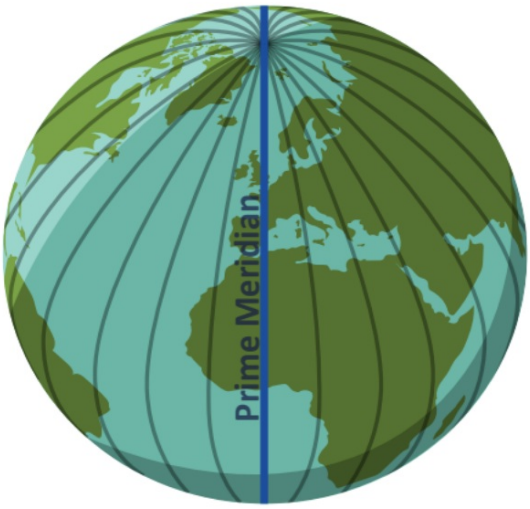
The equator is.....

Lines of latitude

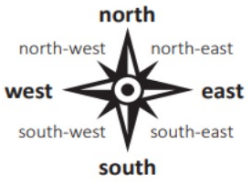
- equal distance apart
- measure how far **north** or **south** a point is from the equator
- labelled **N** to the north of the equator
- labelled **S** to the south of the equator



Prime Meridian



0°



The **Prime Meridian** is a special line of longitude. Its longitude is **0°**. The Prime Meridian passes through the geographical North and South Poles.

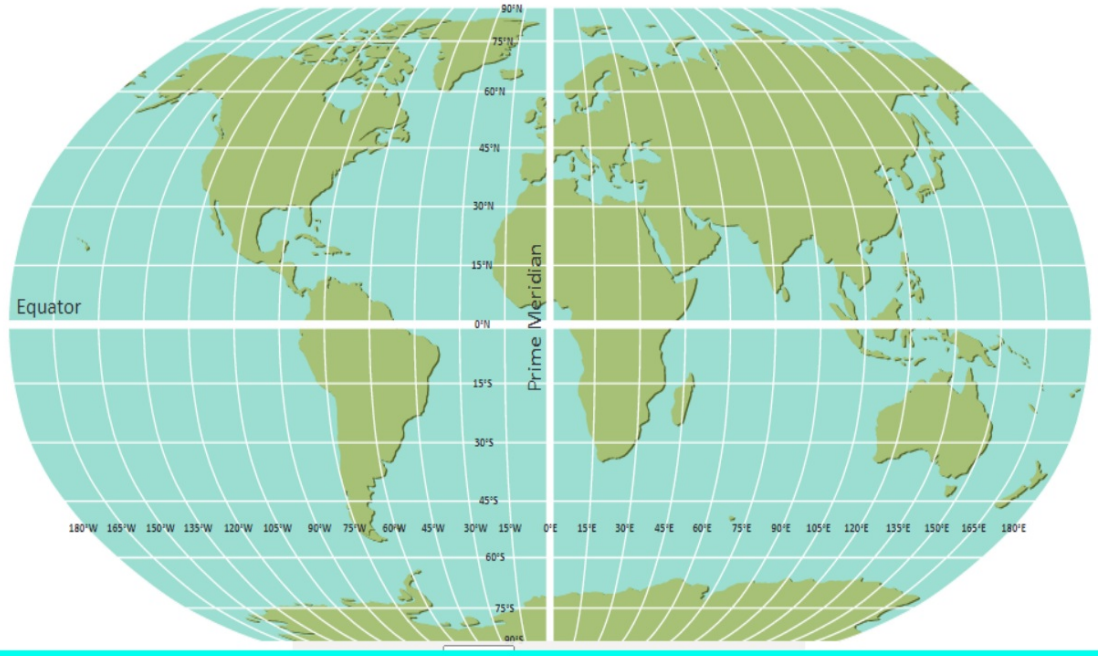
The Prime Meridian....

Use your knowledge of lines of longitude and latitude to locate volcanoes.

Locating volcanoes

Locate these volcanoes on the world map, using the latitude and longitude coordinates.

1	Krakatoa	6°S	105°E
2	Mount St Helens	46°N	122°W
3	Mount Fuji	35°N	139°E
4	Mount Tambora	8°S	118°E
5	Mount Pinatubo	15°N	120°E
6	Mount Vesuvius	41°N	14°E
7	Cotopaxi	1°N	78°W
8	Mount Spurr	61°N	152°W
9	Kīlauea	19°N	155°W



Friday 28th January

L.O. To know the consequences of a volcanic eruption.

We are studying: Rocks, Relics and Rumbles

We are learning about: The consequences of volcanic eruptions.

Last lesson we discovered:

What the lines of longitude and latitude are.

Lines of latitude run horizontally and the lines of longitude run vertically.

They help us to locate exact locations on Earth.

Today we will learn:

The consequences of volcanic eruptions

To know the advantages and disadvantages of living by a volcano.

Volcanoes can change the landscape.

We need to know this because:

It will help us to understand what life is like for people living near a volcano.

Why is it good to live near a volcano?

When volcanic rock breaks down into dirt it becomes a mineral rich soil. These minerals provide food and life for all kinds of plants. Vegetables, grapes, herbs and flowers can grow in volcanic soil. It is a great area to start a farm.

Fertile Soil

complete together

Advantages of living by a volcano	Disadvantages of living by a volcano


24 August 79 AD

Clips

Pompeii - The Mystery of the People Frozen in Time promo
DURATION: 00:34

What happened when Vesuvius erupted in 79AD?
DURATION: 06:13

What happened at Herculaneum, the town not far from Pompeii?
DURATION: 05:56

How did the victims of Pompeii die?
DURATION: 04:54

Why weren't the clothes of the Pompeii victims destroyed by the heat of a pyroclastic current?
DURATION: 04:19

How were the casts of the victims of Pompeii made?
DURATION: 03:30

Can science reveal what two of the victims of Vesuvius actually looked like?
DURATION: 07:15

Days Before 24th August

Tremors were felt around the area of Mount Vesuvius but these were not considered completely unusual and many had been felt in the time leading up to the eruption.

Life in Pompeii continued as normal.

24th August

Morning

Mount Vesuvius' first eruption phase began with a small explosion. A tremor was felt and thin ash cloud was sent into the sky.

It is thought that the feeling in Pompeii at this point was still relatively normal as tremors often happened near to the volcano.

24th August

Early Afternoon (around 1 p.m.)

Vesuvius erupted violently.

A massive ash cloud was expelled up to 20km high, dominating the sky and blocking out the sun. The whole sky turned dark as the cloud was carried south-east and Pompeii was plunged into darkness.

Ash began to fall to the ground soon afterwards.

24th August

Afternoon (around 2 p.m.)

Ash and pumice was falling on Pompeii and panic had risen dramatically among the people of the city. Rocks and debris begin to land on buildings and build up on rooftops.

25th August

Midnight

The volcanic cloud reached its peak at the estimated height of over 30km in the air. This cloud began to plummet back down to earth.

A pyroclastic surge of extremely hot gas, rocks and volcanic material flowed with huge force and speed down the north-west side of the volcano into Herculaneum. Here, it killed many people.

It is thought that the pyroclastic surge travelled at an astonishing 350km per hour.

25th August

Early Morning (around 2 a.m.)

The eruption cloud collapsed once again.

Mount Vesuvius released a second pyroclastic surge, closely followed by a third surge, which was even stronger than the last.

The surge was growing ever closer to Pompeii.

25th August

Morning (around 7 a.m.)

The cloud above Mount Vesuvius collapsed again.

A fourth surge of rock and gas was released and travelled with even greater force. It reached Pompeii and killed everyone remaining and destroyed any final buildings left standing.

Darkness still hung over the Bay of Naples due to the drifting ash cloud in the air.

25th August

Morning (around 8 a.m.)

Additional surges followed, bringing more rock, gas and debris down onto Pompeii. By the end of the entire eruption process, the city was buried under tonnes of volcanic material.

Volcanologist's report

Fill in the report about your chosen volcano.

Name of volcano _____ **Location** _____

Date of significant eruption _____ **Status** _____

Image of volcano

Summary of the eruption

_____

_____

_____

_____

Consequences for people

_____

_____

_____

_____

Consequences for the landscape

_____

_____

_____

_____

Now you need to create a safety poster, warning of a volcanic eruption.

What could you include?

Friday 4th February

L.O. To know how Igneous, sedementary and metamorphic rocks are formed.

We are studying: Rocks, Relics and Rubles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

The consequences of volcanic eruptions.

The advantages and disadvantages of living by a volcano.

Volcanoes can change the landscape.

Today we will learn:

There are three types of rocks.

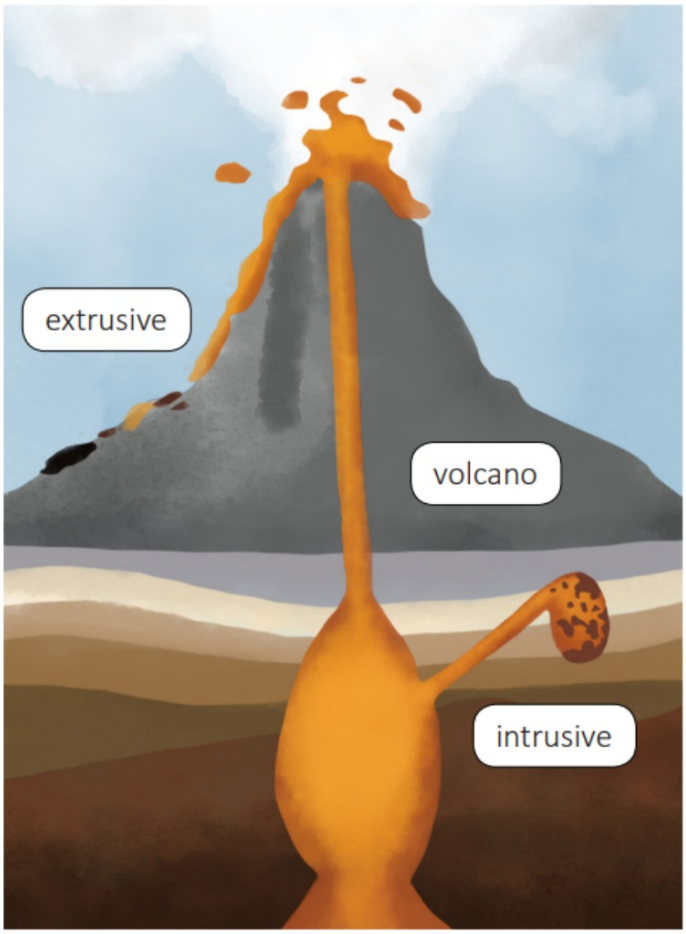
The three types of rocks are: Igneous, sedimentary and metamorphic.

We will learn how these rocks are formed.

We need to know this because:

It will help us to understand the diffeent rocks on our Earth.


ROCKS



Igneous rocks

Igneous rocks are formed when molten (liquid) rock called magma cools and hardens.

Extrusive igneous rocks are formed above the Earth's surface when the magma erupts as lava from a volcano. The lava quickly cools and becomes hard rock.

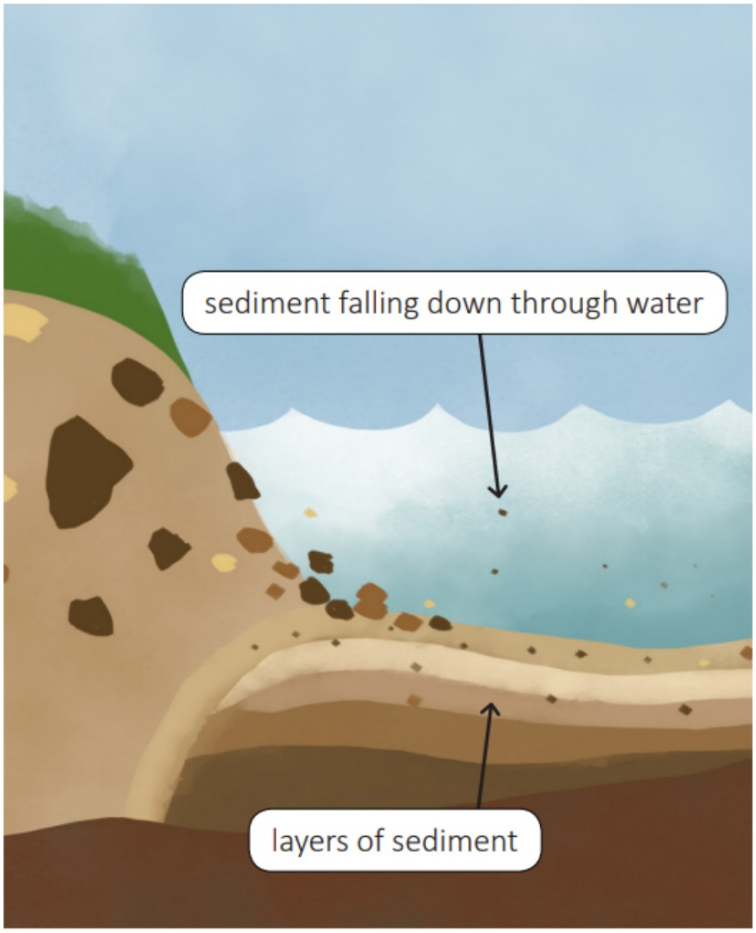
Intrusive igneous rocks are formed when magma below the Earth's surface cools down slowly and becomes hard rock.

Igneous rocks

Melting chocolate

Can look shiny and glasslike when formed quickly.

Can sometimes have small holes from the gas bubbles.



Sedimentary rocks

Sedimentary rocks are formed from particles of sand, shells and pebbles. Together, this is called sediment. Sediment settles at the bottom of seas, lakes and rivers. Layers of sediment build up over time. The sediments on top squash the older layers underneath them. Over millions of years, the layers turn into rock.

Sedimentary rocks

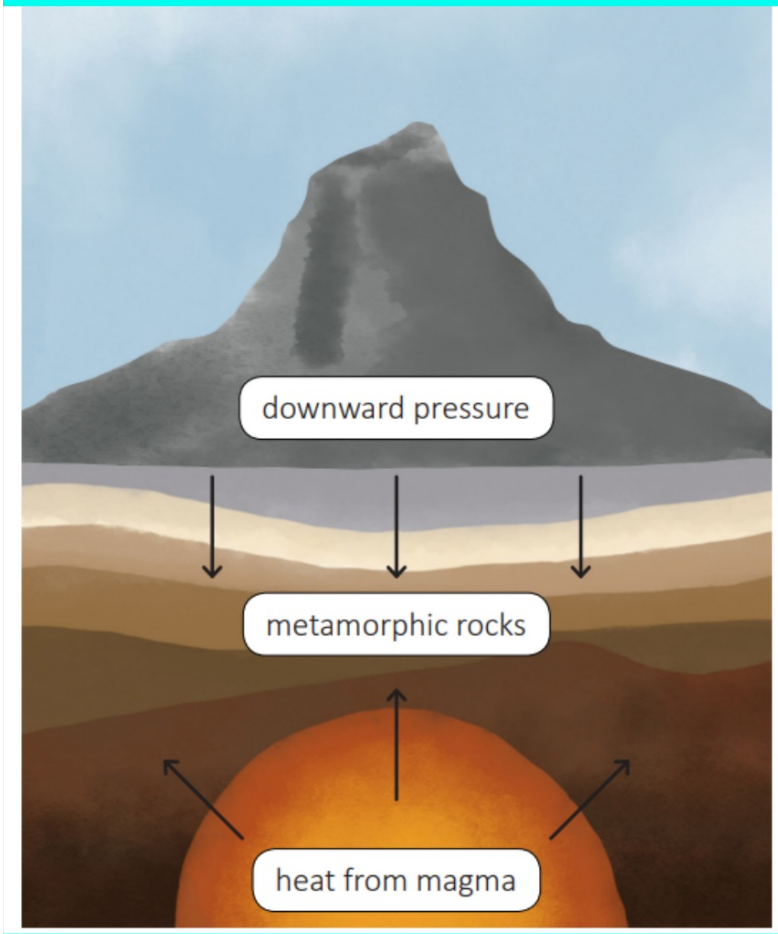
white chocolate = animal bones and shells
milk chocolate = mud

Which rock do you think is harder? Sedimentary or igneous? Why?

Sedimentary rocks

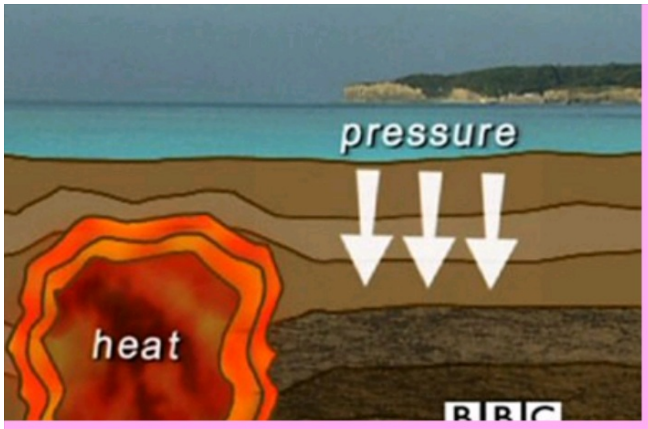
white chocolate = animal bones and shells
milk chocolate = mud

Which rock do you think is harder? Sedimentary or igneous? Why?



Metamorphic rocks

Metamorphose means to change into a different form. Metamorphic rocks may have been sedimentary, igneous or existing metamorphic rocks but have been changed over time due to the pressure and heat underground.



Metamorphic rocks

Put both of the sedimentary rocks you have just made together and apply pressure.

Often have ribbonlike layers.
Can have crystals from forming slowly.

Friday 11th February

L.O. To know how to read and use a 4 point compass for directions.

We are studying: Rocks, Relics and Rubles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

There are three types of rocks.

The three types of rocks are: Igneous, sedimentary and metamorphic.

We learned how these rocks are formed.

Today we will learn:

To know that a four point compass has North, South, East and West directions.

We will use the four point compass directions to locate places.

We will use the four point compass to follow directions.

We need to know this because:

It will help us to follow directions and locate places.

		Volcano 			Tsunami 	
House 				hospital 		
	taxi rank 		postbox 			cafe 
fire station 		toy shop 		airport 		
	school 		vet 		pool 	
theme park 		police station 				beach 
bus stop 		dentist 	Start		supermarket 	

Compass directions: the town

1. From the start, go north 4 squares. Where are you now? _____
2. Go east 3 squares. Where are you now? _____
3. Go south 3 squares. Where are you now? _____
4. Go west 6 squares. Where are you now? _____
5. Go east 2 squares. Where are you now? _____
6. Start at the school. How do you get to the taxi rank? _____
7. Give directions from the dentist to the toy shop. _____

Where Mount Merapi might be? Can you help Lila and create a map with all the locations Mount Merapi might be?

Friday 11th February

L.O. Locate cities and countries on the European map.

We are studying: Rocks, Relics and Rubles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

That a four point compass has North, South, East and West directions.

How to use the four point compass directions to locate places.

To use the four point compass to follow directions.

Today we will learn:

To locate cities and countries on a European map, including Russia.

To use an atlas to help us locate different countries and cities.

Know where countries are in relation to one another.

We need to know this because:

It will help us to where European countires and cities are and how to use an atlas.

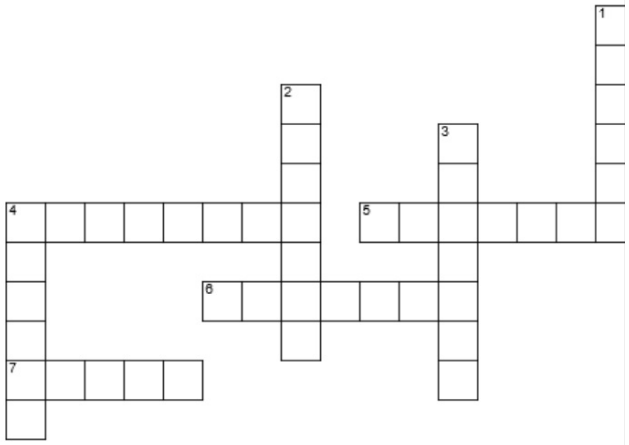
We're missing some countries on our European map. Can you use an atlas to find them?

Map of Europe

Can you use a map of Europe to fill in the gaps of Europe's neighbouring countries?

Neighbouring countries in Europe

Using a map, find the neighbouring countries using the clu
help you!



ACROSS
4 What country is south of Romania?
5 What country is north east across the border of Sweden?
6 What country is across the border of Algiers?
7 What country is south east of France?

DOWN
1 What country is north of Slovakia?
2 What country is south of Belarus?
3 What country is across the border north of Berlin?
4 What country is west of Poland?

Finding the neighbouring countries in Europe.
In your partners, can you complete the crossword?

Friday 18th February

L.o. To understand Human and Physical Geography

We are studying: Rocks, Relics and Rubles

We are learning about: Volcanoes, how they are fomed and where they are located

Last lesson we discovered:

THow to locate cities and countries on a European map, including Russia.

To use an atlas to help us locate different countries and cities.

Know where countries are in relation to one another.

Today we will learn:

The difference between physical and Human Geography.

That physical geography features have been formed by nature.

Human gepgraphy is the impact of humans on our Earth.

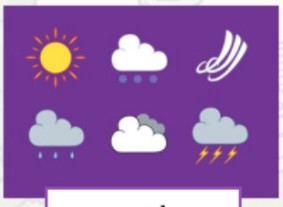
We need to know this because:

It will help us identify physical and human geography features.

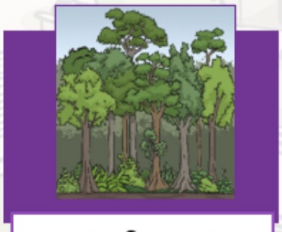
Geography

Are these examples of human or physical geography?

Can you explain why?

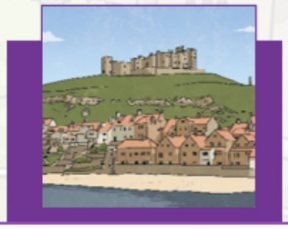


weather

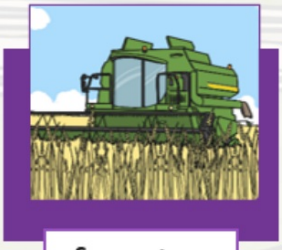


rainforests

rivers



towns and cities



farming

population

volcanoes

Human and Physical Geography

Human Geography

Human geography relates to human activity or something that is humanly-constructed.

It studies the interaction between human activity and the planet.

Human geography might answer questions like:

- What is the largest city in Africa?
- Why is the UK population growing?
- Why do we experience global warming?

Physical Geography

Physical geography relates to geography that is naturally occurring.

It studies the natural environment and landscapes of our planet.

Physical geography might answer questions like:

- What happens when a volcano erupts?
- Why does a river flood?
- How are mountains formed?

Quiz Challenge

Look at the photo.

- Is this an example of human or physical geography?
- What aspect of physical geography might you be learning about? It could be more than one!

Quiz Challenge

Look at the photo.

- Is this an example of human or physical geography?
- What aspect of human or physical geography might you be learning about? It could be more than one!

el the photographs below with a) the physical features and
nan features

Photograph A

- Physical geography is the study of natural features of earth
deserts, weather etc. Human geography is the study of
le fatures of earth e.g. buildings, towns, people, industries etc

Trees
House
Fields/
River
Roads
Tennis

ow
cal

atures

Human Features

Human Features | Physical features

Wembley Stadium

Location:

London

twinkl.com

Tower Bridge

Location:

London

twinkl.com

The Angel of the North

Location:

Gateshead

twinkl.com

Edinburgh Ca

Location:

Edinburgh

London Eye

Location:

London

twinkl.com

Houses of Parliament

Location:

London

twinkl.com

Roman Baths

Location:

Bath

twinkl.com

Kings Colleg

Location:

Cambridge

Durdle Door

Location:

The Jurassic Coast, Dorset

Flamborough Head

Location:

Flamborough, North Yorkshire

Ben Nevis

Location:

Scottish Highlands

Mount Snowd

Location:

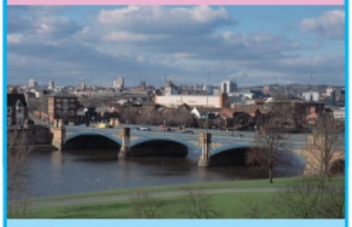
Location: Snowd Wales

The Peak District

Location:

Derbyshire

River Trent



Location:

Nottinghamshire

Loch Ness

Location:

Scottish Highlands

Fistral Beac

Location:

Newquay, Corn

The Eden Project

Location:

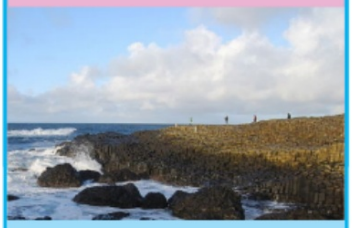
St Austell, Cornwall

Stonehenge

Location:

Amesbury, Wiltshire

Giant's Causeway



Location:

County Antrim, Northern Ireland

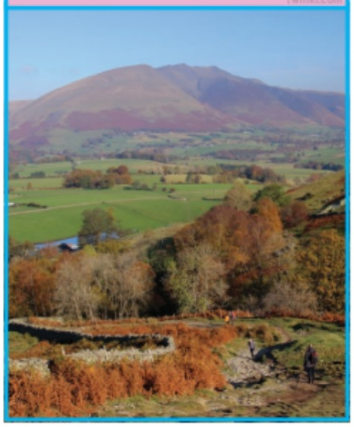
Windsor Cas

Location:

Windsor

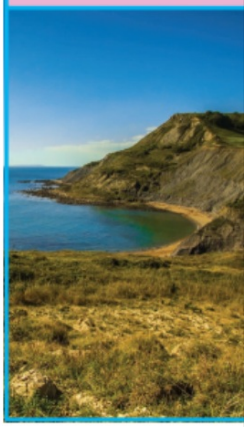
Valley

Hill



Bay

Coastline



Beach

Cliff

Mountain

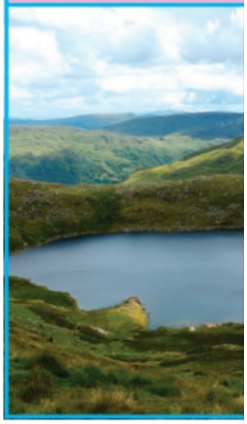
River

Stream

Waterfall

Sea

Lake



Moorland

Gorge