



Geography Curriculum Content

Milestone Two

Year 4

Autumn

Spring

Summer

Unit

Transportation and Trade

Earthquakes and Volcanoes

The Water Cycle and Climate Change

Geographical Places to Study

Sheffield/London

'Ring of Fire' – Pacific Ocean

Enquiry Question

How important is transport and trade?

If tectonic plates move, does it matter?

Is Climate change a crisis?

Learning Experiences/ Hook

'Volcanoes and Rocks' workshop
Magna

Yorkshire Water Education Centre

Planting trees?

Knowledge Categories

Fingertip Facts

1. Transport (or transportation) is the movement of people or things from one location to another using road, air, rail and water networks.
2. Each form of transport has advantages and disadvantages eg. congestion, pollution
3. International trade is the exchange of goods and services between countries.
4. The world's biggest food exporter is the United States of America.
5. Not all countries have suitable conditions for growing food. Different climates allow different types of food to be grown.

1. The Earth has an inner and outer core, a mantle and a crust.
2. Earthquakes occur and volcanoes can form or erupt when the plates move.
3. The scale for measuring the magnitude of earthquakes is called the Richter scale
4. When earthquakes with high magnitude occur and volcanoes with high explosivity erupt they can cause natural disasters.
5. Most of the world's volcanoes and earthquakes are formed in the Pacific Ocean.

1. Clouds are formed when water on Earth evaporates into the sky and condenses high up in the cooler air.
2. Rain, snow, sleet and hail falling from clouds is called precipitation.
3. Climate is the long-term temperature expected in a place.
4. Climate change (or global warming), is the process of our planet heating up.
5. The changing climate will make our weather more extreme and unpredictable.

Investigate Places

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<p>Disciplinary Knowledge (Being a Geographer)</p>	<p>Ask and answer geographical questions about the physical and human characteristics of a location. • Explain own views about locations, giving reasons. • Use fieldwork to observe and record the human and physical features in the local area using a range of methods including graphs and digital technologies. • Use a range of resources to identify the key physical and human features of a location. • Identify human and physical characteristics, including hills, mountains, cities, rivers, key topographical features and land-use patterns; and understand how some of these aspects have changed over time.</p> <p><u>Investigate Patterns</u></p> <ul style="list-style-type: none"> • Describe some of the characteristics of different geographical areas. <p><u>Communicate Geographically</u></p> <p>Describe key aspects of: • human geography, including: settlements and land use. • Use the eight points of a compass, fourfigure grid references, symbols and key to communicate knowledge of the United Kingdom and the wider world</p>	<p>Ask and answer geographical questions about the physical and human characteristics of a location. • Explain own views about locations, giving reasons. • Use maps, atlases, globes and digital/computer mapping to locate countries and describe features.</p> <p><u>Investigate Patterns</u></p> <p>Describe some of the characteristics of geographical areas where volcanoes are formed and earthquakes occur.</p> <p><u>Communicate Geographically</u></p> <p>Describe key aspects of: • physical geography of volcanoes and earthquakes</p>	<p>Ask and answer geographical questions about the physical and human characteristics of a location. • Explain own views about locations, giving reasons. • Use a range of resources to identify the key physical and human features of a location.</p> <p><u>Investigate Patterns</u></p> <ul style="list-style-type: none"> • Describe geographical similarities and differences between countries. <p><u>Communicate Geographically</u></p> <p>Describe key aspects of: • physical geography, including: water cycle.</p> <p>Describe ways to reduce climate change.</p>
<p>Substantive Knowledge</p>	<p><u>Transportation</u></p> <p><u>Human Processes</u></p> <p>Transport (or transportation) is the movement of people or things from one location to another.</p> <p>Within large cities, people need transport to take them from one place to another and goods need to be delivered to businesses. There are several different types of transport, each of which has its advantages and disadvantages. Disadvantages- congestion and pollution.</p>	<p><u>Physical Features</u></p> <p>The Earth has an inner and outer core, a mantle and a crust.</p> <p>The crust is the rocky surface that makes up the surface of the Earth and floats on top of the mantle. The crust has ‘cracks’ in it and so it is actually in pieces. These pieces are called plates.</p> <p><u>Physical Processes</u></p> <p>The boundaries of the plates are called fault lines and movement along these lines causes earthquakes and volcanoes.</p> <p>The plates move in three different ways:</p>	<p><u>The Water Cycle</u></p> <p><u>Physical Features</u></p> <p>The main cloud types include stratus, cumulus and cirrus. Stratus clouds are dark and featureless, creating grey skies. Cumulus clouds are puffy, like cotton wool floating in the sky. Cirrus clouds are thin and wispy, and appear high in the sky.</p> <p><u>Physical Processes</u></p> <p>The water cycle is a physical process that happens on the surface of the Earth and in the Earth's atmosphere.</p>

People travel within the United Kingdom for a variety of reasons – some personal and some business.

There are different types of roads and pathways in the UK eg. railway, footpath, bridleway, motorway.

International transportation involves the movement of people or goods between countries.

Almost all international travel causes pollution.

Tourism and the trade of goods and services between countries are the main reasons for international transportation.

Cargo ships carry goods in large quantities to ports.

Trade

Human Processes

International trade is the exchange of goods and services between countries.

Countries can earn money by exporting food to other countries.

Humans are reliant on natural resources for survival and if the resources are not available in a country then they must be imported.

Location

The term 'food miles' is used to describe how far the food we eat travels from where it is first produced, before it ends up on our tables.

Although food trade is essential, the vehicles that transport the food cause pollution.

Diversity

- away from each other, which forms ridges
- towards each other, which causes earthquakes and forms volcanoes and mountains
- side by side, which causes earthquakes.

Earthquakes and volcanoes differ in their magnitude. Some are more violent than others.

The Pacific Ring of Fire is a result of plate tectonics: plates are colliding with each other which causes a process called subduction where one plate is pushed below another. The heat and the pressure forms mountains and volcanoes.

When earthquakes with high magnitude occur and volcanoes with high explosivity erupt they can cause natural disasters.

Location

The Pacific Ring of Fire is an arc around the Pacific Ocean where most of the world's volcanoes and earthquakes are formed.

About three-quarters of the world's dormant and active volcanos are here.

The water cycle describes the movement of water on the surface and in the atmosphere of the Earth. It is a continuous process that is made up of five steps: 1) Water from oceans, seas, rivers and lakes evaporates and rises into the air as a vapour. Evaporation is the process of water turning into a vapour. It is caused by the heat of the sun. 2) As the vapour rises, it cools and condenses from a vapour to a liquid to form clouds. This process is called condensation. 3) As the clouds become heavy, precipitation occurs. This is the process of liquid falling from the clouds as rain, snow, sleet or hail. 4) This creates run-off, which is water that travels on the surface and collects in bodies of water such as rivers, lakes, oceans and seas. 5) Sometimes this water is soaked into the ground. This process is called percolation and involves the water flowing downward under the layers of the soil. This ends the water cycle, which then starts again.

Climate Change

Human / Physical Processes

Climate change (or global warming), is the process of our planet heating up so that temperatures are higher than would be expected. The Earth has warmed by an average of 1°C in the last century, and although that might not sound like much, it has an effect on people and wildlife around the globe. Unfortunately, rising temperatures don't just mean that we'll get nicer weather. The changing climate will make our weather more extreme and unpredictable. As temperatures rise, some areas will get wetter and humans and animals will need to adapt.

	<p>Foods that are traded in huge quantities across the world include: • soya beans • wheat • palm oil • sugar • corn</p> <p>Each resource occurs more commonly in some parts of the world than in others.</p> <p><u>Physical/human features</u></p> <p>Different climates allow different types of food to be grown.</p> <p>Natural resources are all the land, forests, energy sources and minerals existing naturally that can be used by people.</p> <p>Common natural resources:</p> <p>water oil forests rocks minerals soils animals</p>		<table border="1" data-bbox="1570 150 2112 405"> <thead> <tr> <th>Causes</th> <th>Effect on the planet</th> <th>Effect on animals</th> <th>Effect on humans</th> <th>Management</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> Burning fossil fuels such as coal and oil emits <u>carbon dioxide</u> which acts like an invisible greenhouse, making the Earth warmer. Farming - <u>methane</u> gas released from 1.5 billion cows worldwide, during <u>excretion</u>, adds to the greenhouse effect. <u>Deforestation</u> - trees absorb carbon dioxide but many forests are being cut down and so the carbon dioxide is not absorbed. </td> <td> <p>A warmer climate could affect our planet in a number of ways:</p> <ul style="list-style-type: none"> More rainfall Changing seasons Shrinking sea ice Rising sea levels </td> <td> <p>Climate change is already affecting wildlife all over the world.</p> <ul style="list-style-type: none"> <u>Polar bears</u> have fewer places to hunt and rest as their habitat (sea ice) is melting. <u>Orangutans</u>, living in the rainforests of Indonesia, are under threat as their habitat is cut down. <u>Sea turtles</u> lay their eggs on nesting beaches, many of which are threatened by rising sea levels. </td> <td> <p>Farming communities in developing countries are facing higher temperatures, increased rain, floods and droughts.</p> <p>In Kenya, climate change is making rainfall patterns less predictable. Often there will be droughts followed by large amounts of rain, which makes it difficult to grow crops such as tea.</p> </td> <td> <p>Over recent years there have been many attempts to reduce carbon emissions, such as:</p> <ul style="list-style-type: none"> low energy light bulbs hybrid and electric vehicles more efficient petrol engines recycling and reusing materials reducing 'food miles' </td> </tr> </tbody> </table> <p>How can children help to prevent climate change?</p> <p>https://kids.nationalgeographic.com/nature/save-the-earth/article/13-ways-to-save-the-earth-from-climate-change</p>	Causes	Effect on the planet	Effect on animals	Effect on humans	Management	<ul style="list-style-type: none"> Burning fossil fuels such as coal and oil emits <u>carbon dioxide</u> which acts like an invisible greenhouse, making the Earth warmer. Farming - <u>methane</u> gas released from 1.5 billion cows worldwide, during <u>excretion</u>, adds to the greenhouse effect. <u>Deforestation</u> - trees absorb carbon dioxide but many forests are being cut down and so the carbon dioxide is not absorbed. 	<p>A warmer climate could affect our planet in a number of ways:</p> <ul style="list-style-type: none"> More rainfall Changing seasons Shrinking sea ice Rising sea levels 	<p>Climate change is already affecting wildlife all over the world.</p> <ul style="list-style-type: none"> <u>Polar bears</u> have fewer places to hunt and rest as their habitat (sea ice) is melting. <u>Orangutans</u>, living in the rainforests of Indonesia, are under threat as their habitat is cut down. <u>Sea turtles</u> lay their eggs on nesting beaches, many of which are threatened by rising sea levels. 	<p>Farming communities in developing countries are facing higher temperatures, increased rain, floods and droughts.</p> <p>In Kenya, climate change is making rainfall patterns less predictable. Often there will be droughts followed by large amounts of rain, which makes it difficult to grow crops such as tea.</p>	<p>Over recent years there have been many attempts to reduce carbon emissions, such as:</p> <ul style="list-style-type: none"> low energy light bulbs hybrid and electric vehicles more efficient petrol engines recycling and reusing materials reducing 'food miles'
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<p>Vocabulary</p>	<p>advantages: positive or good things</p> <p>disadvantages: negative or bad things</p> <p>congestion: extremely crowded with traffic</p> <p>pollution: a poisonous or dirty substance</p> <p>vulnerable: at risk of being hurt</p> <p>networks: systems of routes that cross at many points</p> <p>frequently: often</p> <p>bridleway: a countryside track for horses</p> <p>conflict: disagreement</p> <p>international: between countries</p> <p>destination: a place to which someone is travelling or goods are being sent</p> <p>cargo: goods carried by a vehicle</p> <p>transport: the movement of people or things from one location to another using road, air, rail and water networks.</p> <p>trade: the exchange of goods or services</p>	<p>volcano: a mountain from which lava, gas, steam and ash from inside the Earth sometimes burst</p> <p>earthquake: shaking of the ground caused by movement of the Earth's crust</p> <p>dormant: not active, but capable of becoming active in the future</p> <p>collision: when one moving object hits another</p> <p>magnitude: the size or scale of something</p> <p>meteoric: sudden and extremely strong</p> <p>intensity: magnitude</p> <p>tsunami: a very large wave, caused by an earthquake</p> <p>natural disaster: extreme, sudden events caused by environmental factors</p> <p>meteoric: sudden and extremely strong</p> <p>intensity</p> <p>tsunami: a very large wave, caused by an earthquake</p>	<p>atmosphere: the gases that surround a planet</p> <p>continuous: happening all of the time without any breaks</p> <p>precipitation: rain, snow, sleet or hail falling from clouds</p> <p>cumulonimbus: thunder clouds</p> <p>stratus: featureless rain clouds in layers</p> <p>cumulus: small puffy clouds</p> <p>cirrus: thin wispy clouds</p> <p>climate: the long-term expected temperature</p> <p>weather: the day-to day differences in conditions</p> <p>adapt: change behaviour</p> <p>carbon dioxide: a greenhouse gas</p> <p>methane: a greenhouse gas</p> <p>excretion: getting rid of waste from the body</p> <p>deforestation: cutting down large areas of trees</p>										

