

### **Topic 1: Violent Planet**

# What is the structure of the Earth?

There are four layers of the Earth: the inner core, the outer core, the mantle and the crust. There are two types of crust: oceanic and continental.

### Why do tectonic plates move?

The crust is broken up into tectonic plates which have moved over time from the supercontinent of Pangaea to the world today. The Earth's crust moves because of convection currents (circular movements of magma in the mantle).

### What are plate boundaries?

There are four types of plate boundaries. Plates move apart at destructive plate boundaries. Plates move together at constructive plate boundaries. Plates move past each other at conservative plate boundaries. Finally two continental plates move together at collision plate boundaries.

### How are volcanoes formed?

Magma rises through a gap in the mantle and solidifies. This repeats over time until a volcano is formed. Volcanos are formed along destructive and constructive plate boundaries.

# Are all volcanoes dangerous?

Volcanoes can either be active, dormant or extinct. There are two types of volcanoes: composite and shield.

# Why did the Mount Saint Helen's volcano erupt?

The tectonic plates got stuck causing pressure to be built up over time. Eventually the plates jerked past each other and the pressure was released, causing magma to rise to the surface in the form of a volcanic eruption.

### What are the effects of a volcanic eruption?

There are social, economic and environmental effects of volcanic eruptions. These are either primary or secondary effects.

How can we reduce the effects of a volcanic eruption? Effects can be made less severe by prediction, planning and protection measures.

#### How can we respond to volcanic eruptions? There are different responses to volcanic eruptions

How do earthquakes happen?

including creating risk assessments and hazard maps.

Why do people choose to live near volcanoes? People live near volcanoes for a number of reasons including: employment opportunities, fertile ground, faith in the government to protect them or the presence of family and/or friends.

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Guided reading opportunity – are all volcanoes dangerous? Pupils explore active, dormant and extinct volcanoes. Guided reading opportunity – Mount St Helens case study exploration Extended writing opportunity – Mount St Helens case study Extended writing opportunity - explain one advantage and one disadvantage of living near volcanoes Group work discussion – how can we respond to volcanic eruptions? Montserrat decision making exercise 'Turn and talk' opportunity – identifying different effects from an image Homework tasks will be given every second lesson. Homework will support knowledge acquisition and retention. Challenge Homework homework tasks will be provided. All homework will be recorded on EduLink. Subject specialist keywords: Inner core Outer core Mantle Crust Volcanoes Oceanic crust Continental crust Tsunami Tectonic plate **Convection currents** Destructive plate boundary Conservative plate boundary Collision plate boundary Constructive plate boundary Earthquakes **Risk assessment** Magma Lava Active Dormant Extinct Hazard Composite Secondary Primary Social

Economic



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tsunami that moves towards the shore.	
Water is displaced and moves upwards, creating a	
volcanic eruptions or landslides on the ocean floor.	
Tsunamis happen due to underwater earthquakes,	
How do tsunamis happen?	
pressure is released as an eartiquake.	
pressure is released as an earthquake.	
Eventually the plates jerk past each other and the	
plates get stuck causing pressure to be built up over time.	
Earthquakes can happen at any plate boundary. Tectonic	Environmental

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Students have opportunities to critically examine our own values and attitudes (in debating issues, contributing in class etc.)

Democracy: Students explore and discuss injustices and inequalities (perceived or real) and challenge and debate these through the exploration of geographical topics.

### Careers Links:

Seismologist Volcanologist Land use surveyor Countryside officer Tour guide Oceanographer Cartographer

Topic 2: Inequality <u>What is inequality?</u>		Guided Reading Opportunities: Inequality within the UK.
Inequality is the differences between poverty and wealth as well as between wellbeing and social opportunities		Guided Reading Opportunities: Types of inequality and their effects.
e.g. job access. There are different types of inequality including gender inequality, economic inequality and political inequality.		Extended writing opportunity – Explain what inequality is and what the different types of inequality are.
Is there inequality on a global scale? There is inequality globally, this can be seen by looking at GDP and a range of indicators, such as Literacy rate and life expectancy.		Extended writing opportunity – Explain what the north/south divide is in the UK and the problems this causes for a country.
What are the effects of inequality? Inequality can impact areas in different ways. This is linked to other factors that are in place for each country.		'Turn and talk opportunity – inequality within the UK and within Wolverhampton.
<u>How can we tackle global inequality?</u> There is a global response to try and tackle inequality. The 2032 Agenda for Sustainable Development, adopted by all United Nation States in 2015, provides a shared		Debate opportunity – Which of the 17 Sustainable Development Goals is the most effective for tackling global inequality.
blueprint for peace and prosperity for people and the planet, now and in the future. There are 17 Sustainable Development Goals.	Homework	Homework tasks will be given every second lesson. Homework will support knowledge acquisition and retention. Challenge
How can we measure inequality?		homework tasks will be provided. All homework will be recorded on EduLink.



Inequality within a country can be measured using models. The Lorenz curve is a way of showing the distribution of income within an economy. It is designed to represent the wealth inequality within a nation or social group. The Gini coefficient is a measure of the degree of inequality in a society. This can then be used to compare between countries over time.

Are there regional differences in the UK?

The north-south divide is a term used to describe the social, economic and cultural disparities between London and the south-east of England and the rest of the UK. The UK government has issued £4.8 billion to the Levelling Up Fund that is used to help UK communities Level Up.

How can the UK reduce regional differences? The UK has a very high level of income inequality compared to other developed countries.

Is there inequality where I live?

Wolverhampton is located within the West Midlands. In Wolverhampton there are high levels of inequality compared to the south of England and London.

# Subject specialist keywords: Inequality Poverty Wealth Social opportunities Gender inequality Economic inequality Political inequality Globally **Development indicators** Literacy rate Life expectancy GDP (Gross Domestic Product) Sustainable Development Goals United Nations Lorenz Curve Gini Coefficient North-South Divide Income inequality Levelling-Up

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Tolerance of different cultures and religions: Students understand the importance of identifying and combating discrimination including tackling stereotypes.

# Careers Link:

Social worker Spatial inequality worker Youth worker Primary school teacher Secondary school teacher University lecturer Transport logistics manager

### **Topic 3: Weather and climate change**

### How is weather different to climate?

Weather is the current state of the atmosphere whereas climate is the long term average of weather in a particular place.

What are low pressure weather systems? Low pressure weather systems are created by rising warm air, cooling and condensing. An example of a low pressure weather system is a depression.



Guided reading opportunity – exploration of the effects of global warming



Extended writing opportunity – explain the social, economic and environmental

consequences of climate change

Extended writing opportunity – describe the possible effects of climate change on the UK



What are high pressure weather systems?		
High pressure weather systems are created by	$(=)_{\frown}$	'Turn and Talk' opportunity: What are the
descending air, which reduces the formation of cloud and	22	effects of global warming.
leads to light winds and settled weather conditions.	1 22	
What are greenhouse gases? Greenhouse gases are those gases in the atmosphere that raise the surface temperature of planets such as the Earth. They include: carbon dioxide, methane and nitrous oxide.	Homework	Homework tasks will be given every second lesson. Homework will support knowledge acquisition and retention. Challenge homework tasks will be provided. All homework will be recorded on EduLink.
How do humans causo global warming?		Subject specialist keywords:
How do humans cause global warming?		Atmosphere
Humans burn fossil fuels (coal, oil and gas) for industry		Climate
and transportation. Deforestation and agriculture also		Weather
cause global warming.		Low Pressure weather system
		High Pressure weather system
Is climate change natural?		Depression
Volcanic eruptions and sunspots are two natural causes		Greenhouse gases
of climate change.		Fossil fuels
		Deforestation
Is there evidence of climate change?		Agriculture
Evidence that climate has changed over time includes		Global warming
tree rings, ice cores and pollen analysis.		Mitigation
		-
What are the global consequences of climate change?		Sunspots
Global consequences of climate change include: melting		
ice caps, sea level rise, ocean acidification, increased		
temperatures and extreme weather events.		
How is climate change affecting glaciers?		
Glaciers are melting and retreating as a result of rising		
temperatures. Conditions are no longer cold enough for		
ice formation.		
What are consequences of climate change for the UK? Consequences include: increased demand for water, extreme weather, sea level rise, increased food prices		
and impacts to tourism.		
How can we prevent climate change? Climate change can be prevented through mitigation and adaptation strategies. An example of mitigation is afforestation and an example of adaptation is building flood defences.		
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# Careers Link:

Climate change analyst Climatologist Pollution analyst Town planner GIS specialist



Topic	4:	Resources
ropic	<b></b> -	Resources

How do resources influence wellbeing? The essential resources (food, water and energy) improve quality of life and standard of living.

How are resources distributed globally? Resources are unevenly distributed. HICs tend to have more whilst LICs tend to have fewer.

# What are impacts of food insecurity?

Food insecurity is when a country can't supply enough food to feed its population. Impacts include: famine, undernutrition, soil erosion, rising prices and social unrest.

# How can we increase food supply?

Globally there is enough food to feed the world's population. Food supply can be increased for specific regions by: irrigation, aeroponics/hydroponics, the 'new' green revolution and technology.

How can we make food production sustainable? The production and distribution of chocolate and bananas is a long process. Fairtrade tries to make it sustainable by improving social and economic conditions for primary producers.

# How do fossil fuels give us energy?

Fossil fuels are a type of non-renewable energy that are often burnt to create energy. There are three main types of fossil fuels: coal, oil and gas. These are finite resources and will run out.

What are the main sources of renewable energy? Renewable energy are infinite energy sources which are more environmentally friendly. Examples of renewable

energy include: solar power, wind power and hydroelectric power. How has the UK's energy mix changed over time?

Historically the UK used mainly non-renewable energy sources however now uses more renewable sources in its energy mix.

# What are the advantages and disadvantages of using nuclear power?

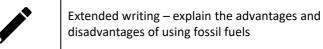
Advantages of nuclear power include: low carbon emissions, investment to ensure safety and low running costs. Disadvantages of nuclear power include: storing waste can be expensive, it is highly radioactive and accidents can be deadly.

How did nuclear power affect Chernobyl?

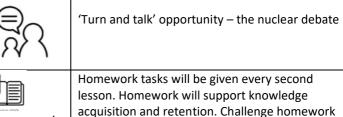


Guided reading opportunity - exploration of fossil fuels

Guided reading opportunity - the Chernobyl disaster



disadvantages of using fossil fuels Writing opportunity – using a graph, describe the UK's energy mix Extended writing – to what extent should we consider using nuclear energy?



recorded on EduLink.

tasks will be provided. All homework will be

# Homework

Subject specialist keywords: Essential Resources Quality of Life Standard of Living Unevenly distributed High Income Country (HIC) Low Income Country (LIC) Insecurity Famine Undernutrition Soil erosion Global Supply and demand Irrigation Fairtrade Sustainable Fossil fuels Social Economic Finite Renewable energy Infinite Non-renewable energy Hydro-Electric Power (HEP)



The Chernobyl disaster was caused by workers ignoring safety protocols during routine maintenance of the power plant. The effects of the disaster were: 28 people died, roughly 100 people were injured, childhood cancer cases increased and the land was contaminated. Many effects are long term.

#### The Nuclear Debate

Opinions on using nuclear power vary significantly.

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Tolerance of different cultures and religions: Students understand the importance of identifying and combating discrimination including tackling stereotypes.

Mutual respect: Students have opportunities to understand our responsibilities to conserve resources and play our part in sustainable development.

#### Careers Link:

Climate change analyst Climatologist Pollution analyst Wind turbine technician Research scientist Oil and gas operations manager Nuclear engineer

### **Topic 5: Factfulness**

### Are we wrong about the world?

A fact based world view is only carrying opinions for which you have supporting facts. An overdramatic worldview draws people to the most dramatic and negative answers.

### Is the world better than we think?

Historically, countries had a low life expectancy (less than 40 years) and low income per person (less than \$3,000). Today, all countries however have over 40 years life expectancy and over \$3,000 income per person however the difference between rich and poor is enormous.

### Where are the majority?

The majority of people in the world are found in middle income countries (levels 2 and 3).

How is life different on each income level? Quality of life improves from Level 1 to Level 4. Factors considered are: cooking, eating, drinking water, transportation and sleeping.

How can Dollar Street teach us about development?



#### Factfulness by Hans Rosling

Guided reading opportunity - Pupils read an introduction extract from Factfulness exploring worldviews

Guided reading opportunity - Pupils read an extract from Factfulness exploring the four income levels

Guided reading opportunity – is the world a dangerous place?

Guided reading opportunity – is Africa's destiny to remain poor?

Extended writing opportunity - Pupils explain two reasons why we can be more positive about the world

Extended writing opportunity - Pupils explain why the statement *"If you keep saving poor children, you'll kill the planet by causing overpopulation"* is incorrect



Images are useful tools for learning about development. Pupils must be able to navigate Dollar Street. There are inequalities between countries. There are inequalities within countries. Why should we be positive about the world we live in?		Extended writing opportunity – pupils write a final report answering the enquiry question "Are we wrong about the world? Are things better than we think?"
Slow change is different to no change. Things can be bad but still be better than they were eg more people were in extreme poverty in 1800 compared to now		'Turn and talk' opportunity - Are humans smarter than chimps? Class vote using mini whiteboards.
Are all lines straight? Global population is not thought to exceed 11 billion, this is due to the fill up effect.		Think-pair-share - how useful are averages when studying data?
Is the world a dangerous place? The reason natural disasters kill so many fewer people today is not that nature has changed. It is that the majority of people no longer live on Level 1. Disasters hit		'Turn and talk' - what are examples of bad things that are decreasing in the world? What are examples of good things that are increasing in the world?
countries on all income levels, but the harm is very different. With more money comes better preparedness.		Homework tasks will be given every second lesson. Homework will support knowledge acquisition and retention. Challenge homework
<u>Is Africa's destiny to remain poor?</u> Mozambique is located in south-east Africa. Africa is a continent made up of 54 countries. Standard of living and	Homework	tasks will be provided. All homework will be recorded on EduLink.
quality of life in Mozambique has improved over time.		Subject specialist keywords:
Development indicators show that on average Africa is		Fact-based world
behind other continents however there is progress being		Life expectancy
made e.g. the fall in extreme poverty		Low income
		Middle income countries
Why is a single story wrong?		Quality of life
Africa is a continent made up of 54 countries. Not all of		Development
these countries are developing/low-income/Level 1		Inequalities
countries! 'A single story' – looking at a concept/place		Dollar Street
from one perspective only e.g. Africa is poor. Nigeria is		Slow change
located on the west coast of Africa. Makoko is a slum		Extreme poverty
area that is not representative of the entire country.		Fill-up effect
		Global
How can Gapminder teach us about development?		Natural disasters
There are various development indicators which tell us		Development indicators
about development e.g. life expectancy, babies per		Slum
woman, income and child mortality. These are different		Infant mortality
for each country and change over time.		
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Tolerance of different religions and cultures: Students understand the importance of identifying and combating discrimination including tackling stereotypes.

Students learn to understand and respect the traditions of other cultures.

Rule of Law: Students have opportunities to explore and understand how governments have influenced and shaped nations through law.

Tolerance of different cultures and religions: Students understand the importance of identifying and combating discrimination including tackling stereotypes.



# Careers Link:

GIS specialist Climateologist Environmental researcher University lecturer