Zig Zag Education

Geography

GCSE

GCSE Geography Emergency Cover Lessons

Volume 2

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POD 9204

Contents

Teacher's Introduction

As a former Geography teacher and Head of Humanities for many years, I know the value of a ready-to-go resource for GCSE cover lessons! This resource is designed as a 'dip-in', with lessons spread across eight key themes of geography: Hazards, Climate, Ecosystems and UK Landscapes (for the physical elements), and Urbanisation, Development, the UK, and Natural Resources (to cover the human aspects).

A lot of the time, cover lessons unfortunately come down to a revision guide, and the instruction to 'make notes' then answer questions. While revision guides have good diagrammatic information, they don't provide sufficient depth or include any extension, and students know that often no one will find time to mark the work they are doing. With this resource, however, the marking and feedback cycle could be completed within the lesson, while any additional activities can be set for homework.

The resource provides meaningful and stimulating learning during periods of cover, allowing students to apply their knowledge and practise key skills while progressing within the topic area they are studying. For a teacher, being able to decide at the last minute the lesson to be studied – and knowing that their class is on-task during an unplanned absence – is a godsend!

This resource is one part of a set of four volumes which are available in this Emergency Cover Lessons range for GCSE Geography. The full index of lessons for all four volumes is given on the following pages, cross-referencing each lesson to the exam board specifications for which it is suitable. The content within this volume is presented distinctly from that of the others.

Each volume contains lessons in every theme. Broadly, each volume builds upon the foundations and content in previous volumes. With this structure, Volume 1 is perfect for providing cover early on in a topic teaching block, or as consolidation of the basics at a later stage in the topic. Lessons in Volume 4 might be more suitable towards the end of a block of teaching, or to stretch and challenge students in a top set!

The lessons in all volumes have been designed for non-specialist use and independent student study, allowing any cover teacher the opportunity to photocopy the relevant sheets, distribute these to the class, and offer minimal support throughout the lesson. A specialist Geography teacher may, of course, decide to be more hands-on with the delivery of the lesson.

I hope you find this resource, and indeed the full set of volumes, useful in your school!

February 2019

Lesson Index by Volume/Specification – Physical Geography

Lessons	Volume	AQA	Edexcel A	Edexcel B	OCR A
Theme 1: Natural Hazards					
What causes extreme weather? (I)	1	✓	✓	✓	✓
What causes extreme weather? (II)	1	✓	✓	✓	✓
Tropical storms: Formation & Distribution (I)	2	✓	✓	✓	✓
Tropical storms: Formation & Distribution (II)	2	✓	✓	✓	✓
Tropical storms: Impacts & Mitigation (I)	3	✓	✓	✓	✓
Tropical storms: Impacts & Mitigation (II)	3	✓	✓	✓	✓
Extreme weather in the UK (I)	4	✓	✓	✓	✓
Extreme weather in the UK (II)	4	✓	✓	✓	✓
Tectonics: Earth structure and processes (I)	1	✓		✓	
Tectonics: Earth structure and processes (II)	2	✓		✓	
Impacts of earthquakes	3	✓		✓	
Mitigation and prediction of earthquakes	4	✓		✓	
Impacts of volcanoes	3	✓		✓	
Mitigation and prediction of volcanic eruptions	4	✓		✓	
Theme 2: Climate Change					
Natural climate change: Patterns, causes, evidence	1	✓	✓	✓	✓
Human causes of climate change	2	✓	✓	✓	✓
Impacts of climate change	3	✓	✓	✓	✓
Mitigation and adaptations for climate change	4	✓	✓	✓	✓
Theme 3: Ecosystems					
What are ecosystems and biomes? (I)	1	✓	✓	✓	✓
What are ecosystems and biomes? (II)	1	✓	✓	✓	✓
Tropical Rainforest: Structure & characteristics	2	✓	✓	✓	✓
Tropical Rainforests: Deforestation	3	✓	✓	✓	✓
Tropical Rainforests: Sustainable management	4	✓	✓	✓	✓
Theme 4: UK Physical landscapes					
Coastal processes (I)	1	✓	✓	✓	✓
Coastal processes (II)	2	✓	✓	✓	✓
Coastal landforms	3	✓	✓	✓	✓
Human activity and management of coasts	4	✓	✓	✓	✓
River processes	1	✓	✓	✓	✓
River landforms	2	✓	✓	✓	✓
Human activity and management of rivers (I)	3	✓	✓	✓	✓
Human activity and management of rivers (II)	4	✓	✓	✓	✓
Glacial processes and landforms	1	✓	✓		
Human activities in glaciated landscapes	2	✓	✓		

Lesson Index by Volume/Specification – Human Geography

Lessons	Volume	AQA	Edexcel A	Edexcel B	OCR A
Theme 5: Urbanisation					
What is urbanisation?	1	✓	✓	✓	✓
Megacities	2	✓	✓	✓	✓
Lagos: A case study	2	✓	✓	✓	✓
How cities change	3	✓	✓	✓	✓
UK Regeneration: A case study	3	✓	✓	✓	✓
Sustainable living in cities	4	✓	✓	✓	✓
Liuzhou Forest City, China: A case study	4	✓	✓	✓	✓
Theme 6: Development					
What is development?	1	✓	✓	✓	✓
How is development measured?	1	✓	✓	✓	✓
Development theories	2	✓	✓	✓	✓
Uneven development	2	✓	✓	✓	✓
Globalisation and trade (I)	3	✓	✓	✓	✓
Globalisation and trade (II)	3	✓	✓	✓	✓
Development strategies and aid (I)	4	✓	✓	✓	✓
Development strategies and aid (II)	4	✓	✓	✓	✓
Theme 7: The UK					
Physical distinctions of the UK (I)	1	✓	✓	✓	✓
Physical distinctions of the UK (II)	1	✓	✓	✓	✓
Population change & demographics in the UK	2	✓	✓	✓	✓
Migration in the UK	2	✓	✓	✓	✓
Employment change in the UK	3	✓	✓	✓	✓
UK & the wider world (I)	4	✓	✓	✓	✓
UK & the wider world (II)	4	✓	✓	✓	✓
Theme 8: Natural Resources					
What are natural resources? (I)	1	✓	✓	✓	✓
What are natural resources? (II)	2	✓	✓	✓	✓
Food (I)	3	✓			
Food (II)	4	✓			
Energy (I)	3	✓	✓	✓	✓
Energy (II)	4	✓	✓	✓	✓
Water (I)	3	✓	✓		
Water (II)	4	✓	✓		

To order additional volumes call us on 0117 950 3199:

- **Vol 1**: ZZBR/9203 – 15 Lessons
- **Vol 2**: ZZBR/9204 – 15 Lessons
- **Vol 3**: ZZBR/9539 – 16 Lessons
- **Vol 4**: ZZBR/9540 – 17 Lessons

Tropical storms: Formation & distribut

	Description
Task 1	Draw on a map the locations and dates of t opical storms
Task 2	Work out which factors are true a w ch are false in the caus
Task 3	Draw a timeline to sh w tropical storms are formed, and e
Task 4	Understa st ucture of a tropical storm

In this lesso vill:

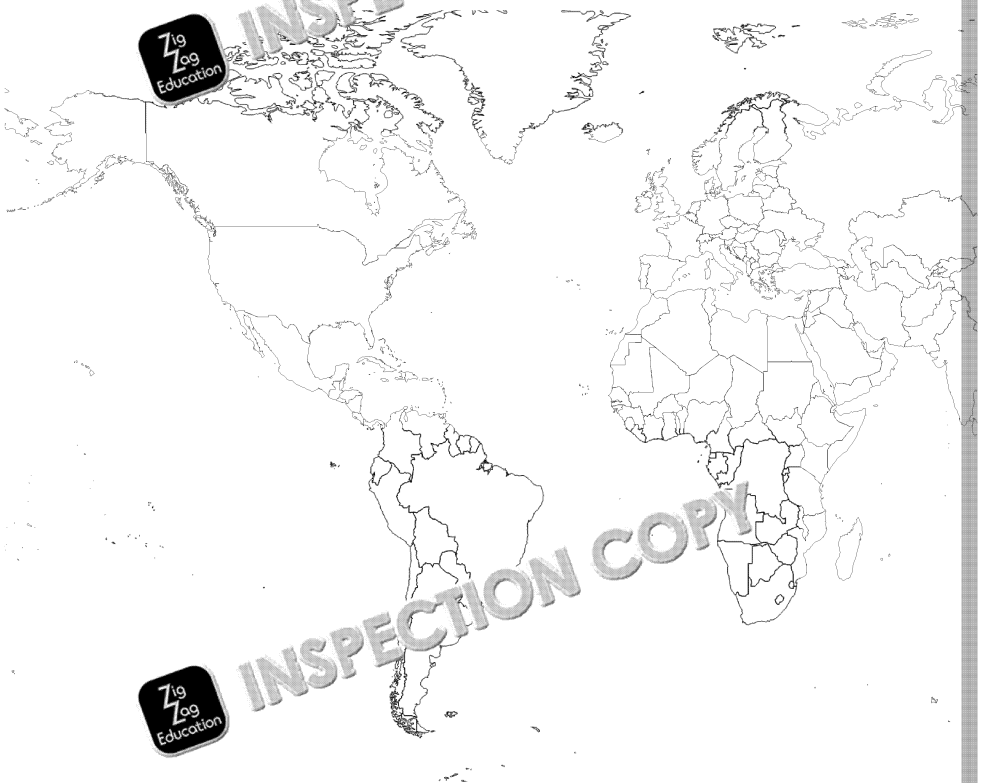
- ✓ locate r ons in which tropical storms occur
- ✓ decide which are the factors that cause a tropical storm
- ✓ draw a timeline of the development of a tropical storm
- ✓ complete a paragraph on the structure of a tropical storm

Task 1

Tropical storms are called different names around the world. They also occur at d

Below is a series of labels. Write each label in the correct position on the map be

Cyclones January–March	**Hurricanes** August–October	
Cyclones December–March	**Typ ons** M y– December	



Task 2

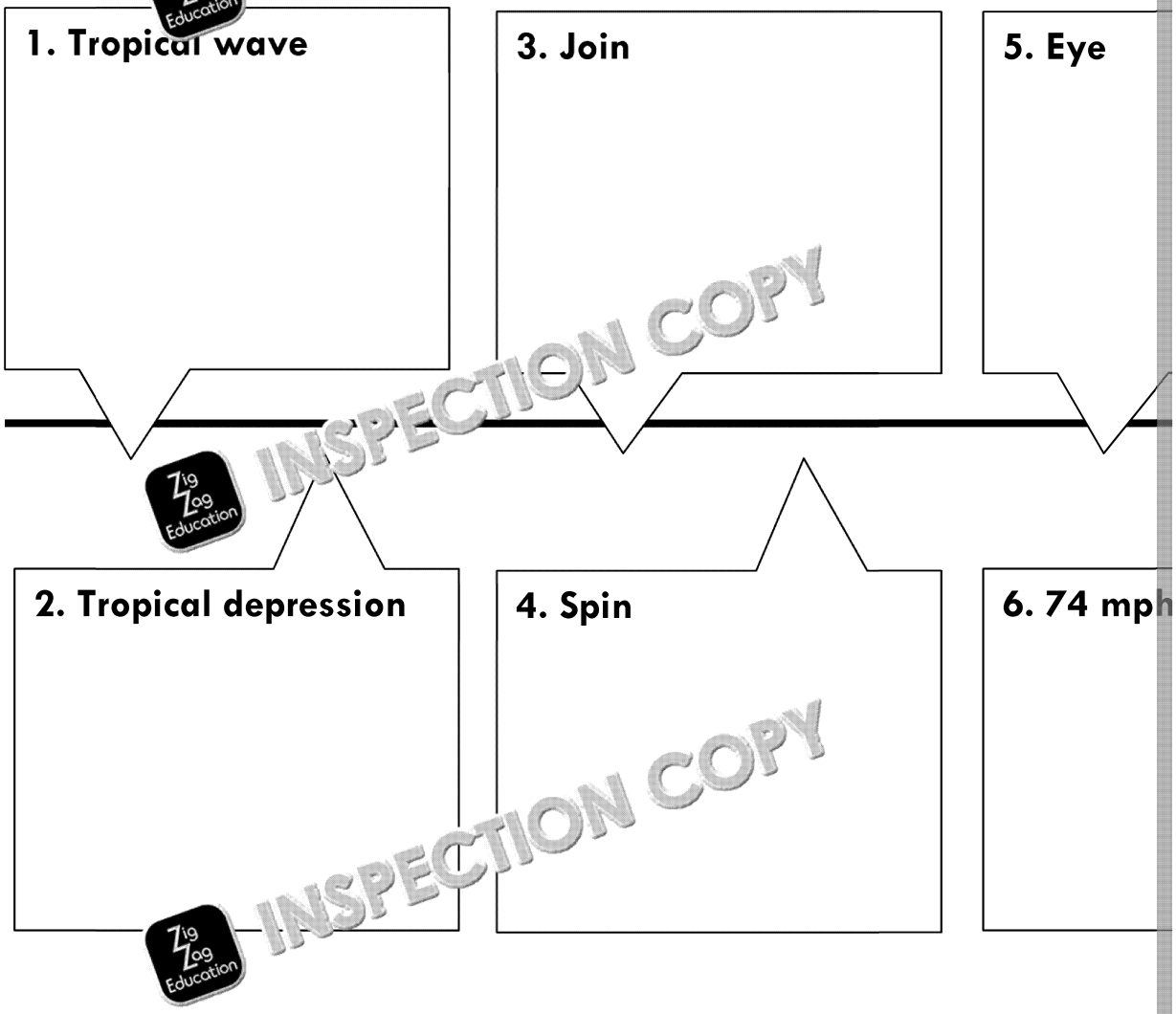
In this task you will decide which of the statements are true. The statements refe
a hurricane to form.

Using a pencil, cross out the incorrect statements.

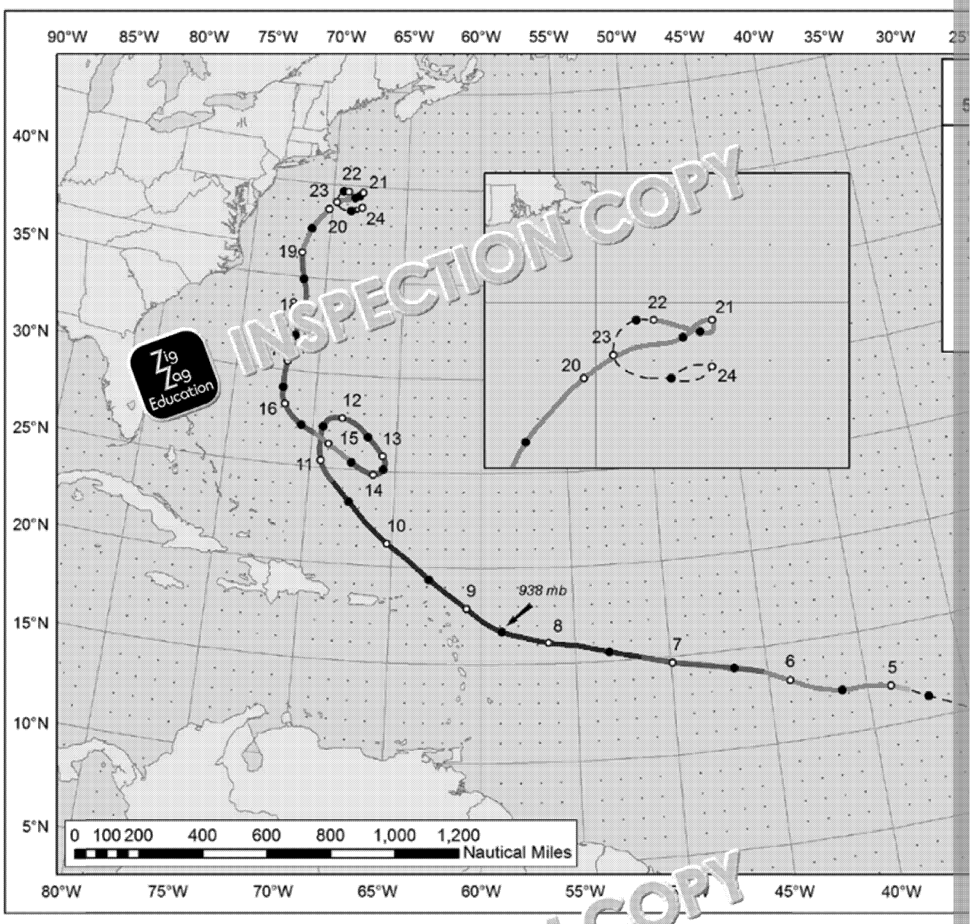
- Tropical storms are high-pressure weather sys
- Tropical storms form wh the s are low shear winds.
- Sea su te peratures need to be cool (20 °C or below).
- Tropical storms are low-pressure weather systems.
- Tropical storms need to occur a few degrees from the equator, up to ar
- Tropical storms need a starting point such as a disturbance, e.g. a tropic
- Tropical storms occur on the equator.
- Tropical storms form where there are high shear winds.
- Sea surface temperatures need to be warm (26.5 °C or above), and to
  or more).

Task 3

Complete the timeline, which outlines the formation of a tropical storm (through to the formation of a h
illustrations on your timeline (or both)!



Study the map of the storm track below, showing data for Hurricane Jose, in 2017



Explain why Hurricane Jose was a [illegible] hurricane.

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Task 4

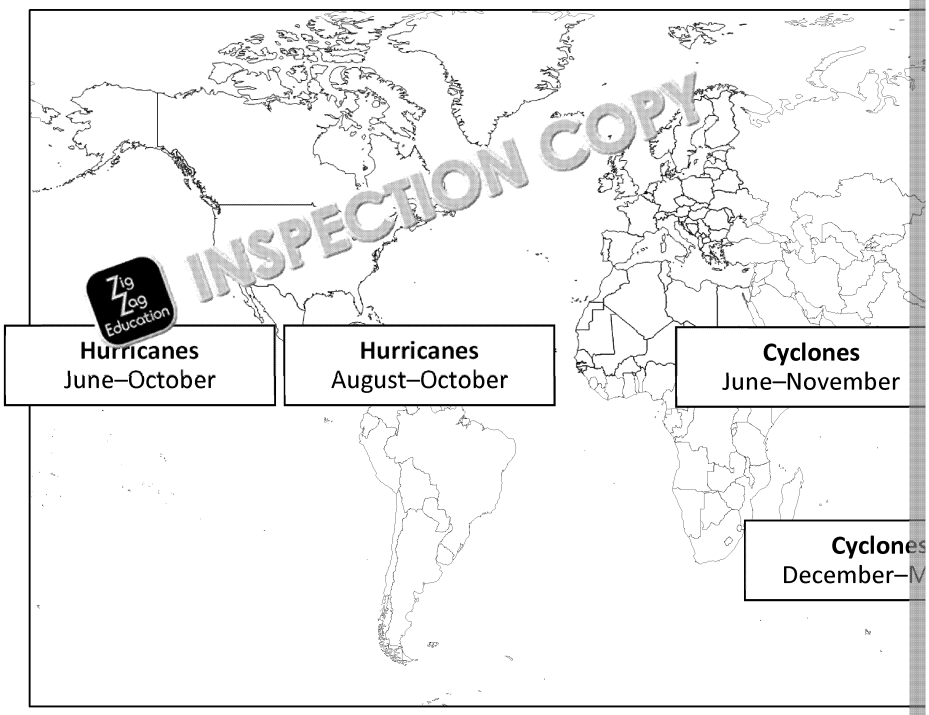
Complete the paragraph using the words below.

In the centre of the storm is the _____. Here warm air _____ cool air descends; however, the winds are very calm. Very high winds and _____ _____, which is made of thunderstorms. Rainfall is also very _____ in this part of the storm. Further out there are _____ (which may _____ _____). Sometimes _____ may form. These can be seen from above due to the circular _____ cloud above.

high	rain bands	thunderstorms
eye wall	eye	tornadoes

Tropical storms: Formation & distribution (I) answers

Task 1



Task 2

- ~~**Tropical storms are high-pressure weather systems.**~~
- Tropical storms form where there are low shear w
- ~~**Sea surface temperatures need to be cool**~~
- Tropical storms are low pressure
- Tropical storms need to
- Tropical storms
- ~~**Tropica**~~
- ~~**Tropica**~~
- Sea surf

Task 3

1. A tropical wave develops – for example, a thunderstorm. There is no rotation.
2. A tropical depression – low pressure occurs as air warms and rises above a warm oc
   a storm and causes wind at the surface.
3. Several thunderstorms may join together.
4. The Coriolis effect causes the storm to spin.
5. The eye of the storm develops, wind speeds increase and a tropical storm develops.
6. Once the sustained maximum wind speeds reach 74 mph, the storm reaches 'hurrica
   or cyclones elsewhere). Rain bands spiral around the eye.
7. The storms eventually weaken and travel toward
8. The storm may eventually become

Hurricane Jose:

- Tracks towards t
- Turns r
- Storm i

Task 4

In the centre of the storm is the **eye**. Here warm air **rises** and cool air descends; however,
winds and rainfall occur at the **eye wall**, which is made of thunderstorms. Rainfall is also
Further out are **rain bands** (which may also consist of **thunderstorms**). Sometimes **tornad**
unlikely to be seen from above due to the circular **cirrus** cloud above.

Tropical storms: Formation & distributi

	Description
Task 1	Discuss changes to storms as a result of climate change

In this lesson you will:

- ✓ analyse a source based on how climate change might affect tropical storms

Task 1

Read the following extract written by NASA, and complete the questions below.

'Global warming could affect storm formation by decreasing the temperat poles and the equator. That temperature difference fuels the mid-latitude Earth's most populated regions.

'Warmer temperatures could increase the amount of water vapor that ent result is a hotter, more humid environment. At the equator, where condit humid, the change isn't expected to be large. At the poles, however, the a extra heat and water vapor could raise temperatures greatly. As a result, the temperature difference between the poles and the equator to decrease decreases, so should the number of storms.

'But even as a warming climate might decrease the overall number of stor increase the number of intense storms. As temperatures continue to rise, could evaporate into the atmosphere. And water vapor is the fuel for storm

'Some scientists have speculated that a warmer climate that allows more would also allow more hurricanes. Warmer temperatures may also heat the Equator, expanding the reach of large tropical storms.

'Even if tropical storms don't change significantly, other environmental c global warming could make the storms more deadly. Melting glaciers and sea levels to rise, which would make coastal flooding more severe when a

Source: NASA

1. Describe how the atmosphere is likely to change in the future?

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2. Explain why these changes might alter the number of storms?

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3. Suggest how the sea temperatures might change?

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4. State the 'indirect' [illegible] associated with climate change?

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5. If you have already studied tropical storms, compare how the themes in the [illegible] understanding of tropical storms?

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6. The ar[illegible]es words including 'could', 'might' and 'some scientists have sp[illegible] a degree of uncertainty over the effects of climate change on tropical storms

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Tropical storms: Formation & distribution (II) answers

Task 1

1. Warmer and moister at the poles, with less effect closer to the equator. Therefore, t
equator will be lessened. However, there will still be increased warming and increas
equator.

2. Possibly fewer storms because the temper[illegible]ence is a factor in the develop

3. Sea surface temperatures [illegible]el[illegible]ncrease – both in temperature and spatially.
more intense sto[illegible]

4. Sea leve[illegible]e increases the chance of storm surges.

5. Answers will depend on what the students have already learnt, or any prior knowled

6. Allow any suitable answers based on:
   - model output uncertainty and accuracy
   - limitations of data for models, e.g. wind speed and historical data
   - complex variety of factors and feedback mechanisms
   - unknowns

	Description
Task 1	Assess whether earthquakes occur at plate boundaries
Task 2	Identify at which type of boundary certain features are experien
Task 3	Complete an article on the hazards at a plate boundary

In this lesson you will:

- ✓ assess the location of earthquakes in relation to plate boundaries
- ✓ match features to types of plate boundary
- ✓ assess the hazards experienced at a plate boundary

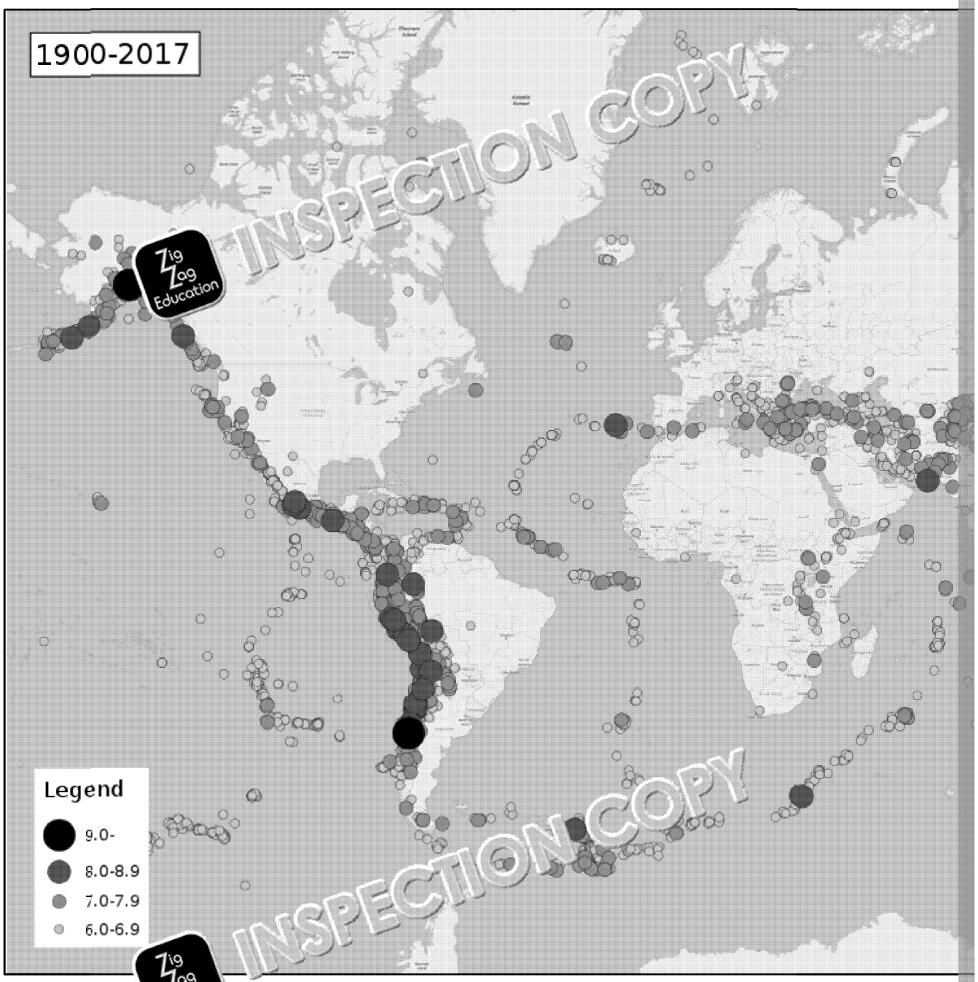
Boundary or margin?

You will sometimes see 'boundary' and 'margin' depending on your source. They me

Similarly, constructive = divergent; destructive = convergent; conservative = transfo

Task 1

Take a look at the map below, which shows all of the earthquakes above a magnit
since 1900. Then answer the questions below.



1. Describe the pattern of earthquake distribution. Where do the most powerf

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2. Can earthquake patterns be used to map the plate boundaries? Justify your a

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3. Are there any earthquakes lo[illegible] from plate boundaries? You can use
in Task 2 to help you

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Task 2

There are different hazards and processes which occur at the different types of pl

State whether each hazards or process occurs at a destructive, constructive or co

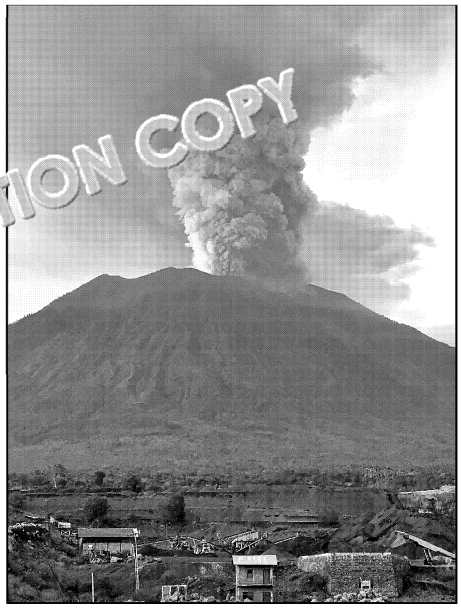
Hazard or process
Oceanic pl su d below a continental plate.
Eruptions of volcanoes are effusive (gentle).
Seismic activity is likely to be low magnitude.
Powerful earthquakes are likely to result.
Volcanic eruptions are likely to be violent and explosive because the magma is hi
Tsunamis may result if powerful earthquakes occur under water.
Two plates pull apart, creating new land – often e ocean, creating a ridg
Plates move past each othe ora e directions, or at different speeds.
Land is ne eated nor destroyed.
Composite volcanoes (stratovolcanoes) are likely to develop.

Task 3

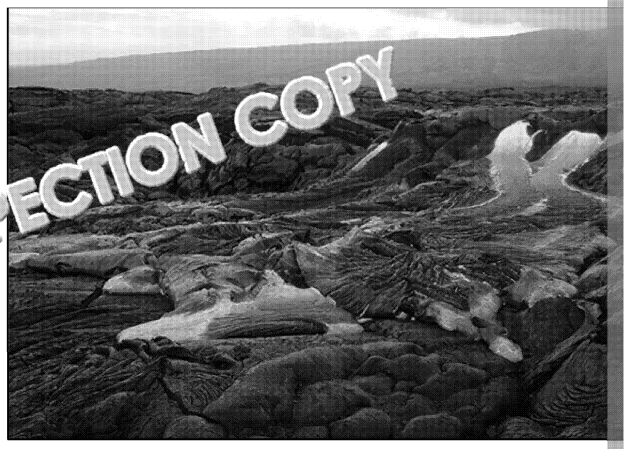
The images below were taken at different plate boundaries. Choose one of the p
a magazine based on the plate boundary. You may like to include some of the fo

- The landscape
- The processes which occur in the region (e.g. subduction, formation of new l
- Hazards – earthquakes and volcanoes
- Opportunities (tourism, mineral wealth)

Conservative plate boundary (e.g. San Andreas F



Destructive plate boundary (e.g. Pacific Ring-of-Fir



Constructive plate boundary (e.g. Iceland) or Hotspot (e.g

Tectonics: Earth structure and processes (II) answers

Task 1

1/2. The outlines of the plates can be clearly seen. The most powerful earthquakes occur
The Pacific Ring of Fire can be clearly seen.

3. Yes – there are intraplate earthquakes shown, such as in Australia. These earthquak
the scale shown. Note that there are also some earthquakes shown along fault lines

Task 2

Hazard or Process
Oceanic plate is subducted below a continental plate.
Eruptions of volcanoes are effusive (gentle).
Seismic activity is likely to be low magnitude.
Powerful earthquakes are likely to result.
Volcanic eruptions are likely to be violent and explosive because the magma is highly vis
Tsunamis may result if powerful earthquakes occur under water.
Two plates pull apart, creating new land – often under the ocean, creating a ridge.
Plates move past each other in opposite directions, or at different speeds.
Land is neither created nor destroyed.
Composite volcanoes (stratovolcanoes) are likely to develop.

Human causes of climate change

Learning objective: to know how human activities affect the Earth's climate, and

1. In your notes, write the word CLIMATE down your page and add as many wo what you already know about climate change. A few ideas have been given f

C	
L	
I	ce core samples
M	
A	
T	emperatures will increase
E	

2. The greenhouse effect occurs naturally in the Earth's atmosphere and is the r enough to support life. Where do you think it gets its name from?
   a) The fact that it impacts on living things, which are usually green.
   b) The way heat from the Sun's rays becomes trapped in the Earth's atmos shines on a glass greenhouse.
   c) The colour of the building in which scientists first came up with the idea was warming.

   Write the correct reason into your notes.

3. The greenhouse effect happens because certain gases in the atmosphere beh greenhouse. They allow in short-wave solar radiation (light) but reflect back Earth. Unscramble the sentences to define the term 'greenhouse gas':

Earth's wa	**causing the**	**A gas that**	**from the Sun,**	**atmo**

4. Copy and complete the following paragraph, choosing the correct word wher

   The **atmosphere/Earth** is made up of many gases, but is mostly nitrogen (78%) **liquids/gases** such as carbon dioxide (CO_2) account for a very **small/large** volu have a **major/minor** impact on our climate. Without them the average tempe **warmer/colder** (around -18 ˚C). Levels of greenhouse gases in the atmosphere because human activity is causing **more/less** heat to be trapped. The Earth is than it would naturally. This affects weather systems, **stabilising/changing** the

5. Study Figure A on the next page showing greenhouse gases produced by hum our atmosphere.

   Rank them from highest to lowest by their:
   a) amount produced by human activi
   b) warming power (compared to CO_2) on the Earth's atmosphere.
   c) contribution to global warming.

6. Study Figure B. How many sources of greenhouse gases can you find? Creat
show each type of gas and the sources that it comes from.

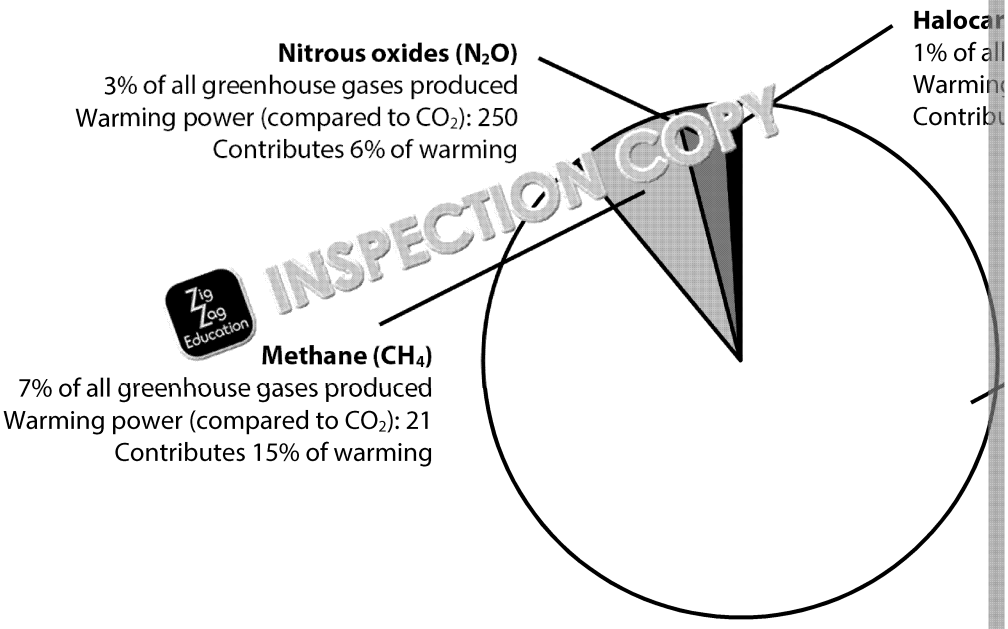


Figure A: Greenhouse gases from human ac

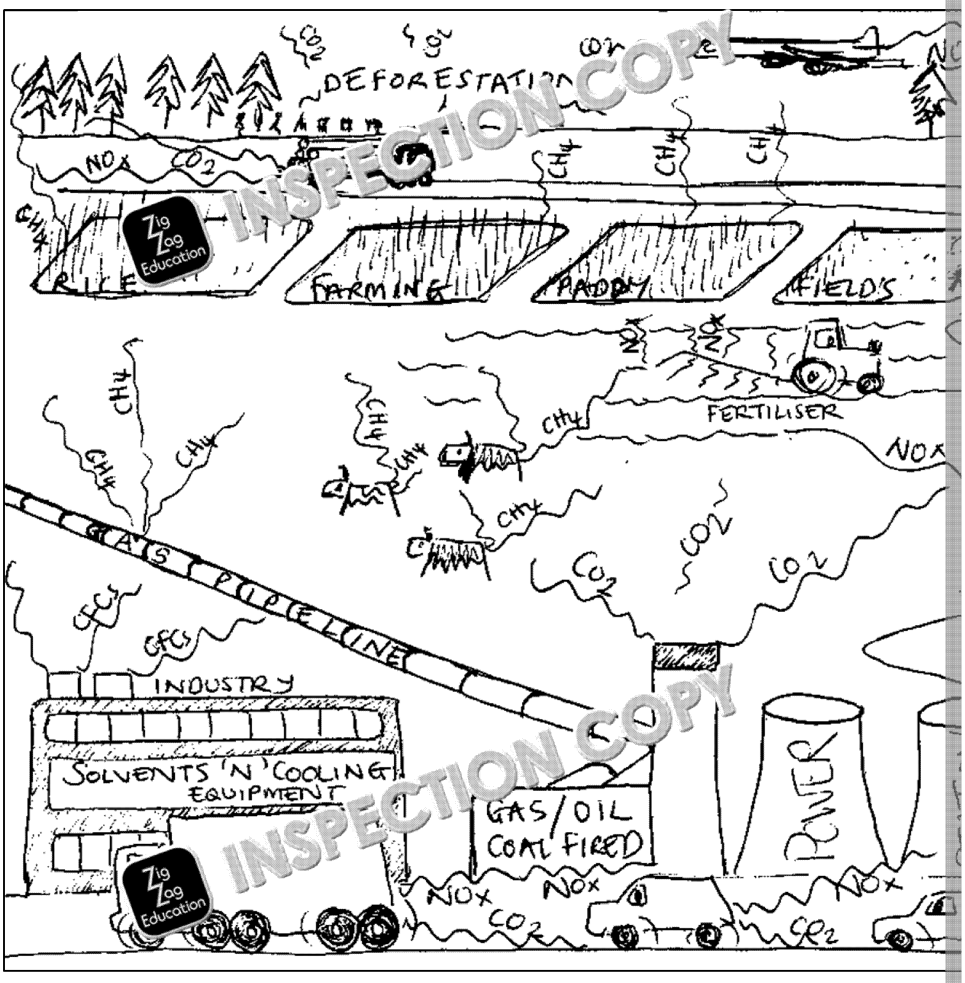


Figure B: Sources of greenhouse gases

7. Figure C shows the naturally occurring greenhouse effect.
   a) Make a copy of it in your notes.

   b) Add to your diagram **the enhanced greenhouse effect** that human activi
   diagram with these captions:

The temperature on Earth increases. We call this **global warming**.	More of the long-wave radiation (heat) is reflected by the Earth's atmosphere.	

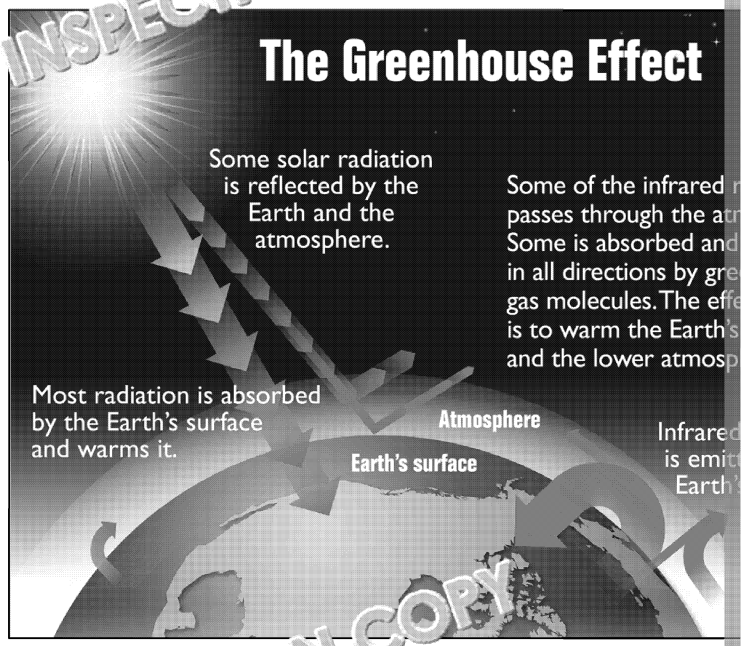


Figure C: The natural greenhouse effect

8. How do we know t' h m activity is causing an enhanced greenhouse effe
   change sc ists are recording. The climate is warming faster than histo

   a) Rearrange the sentences to find the five sources of evidence for the imp
   Industrial Revolution began 150 years ago.

   b) Match each finding to the correct description – write the correct answe

Over the last 150 years	Descrip
21 cm levels risen Sea have by	This may seem like a small amount bu that the increase has occurred more r emissions have grown.
increased The average has temperature by 0.85 °C	90% of glaciers have experienced som faster than s fall can replace it.
ice Arctic by over 50% has shrunk	Se wa expands as it gets warm (th nd there is more water in the ocean ice.
weather event reco er and frequent	Monitoring has shown a very rapid de sea ice in the last 40 years.
smaller Glaciers in of the world mountainous regions have got	Warmer temperatures have caused g droughts and heatwaves across the w

9. Finally, study Figure D below – it shows the distribution of emissions of gree
activity across the world in 2006.

a) Describe the pattern of emissions. You could use the following words in

higher	less developed	more developed	lo

b) Suggest reasons for the discrepancy in emissions between the wealthiest
world.

c) Explain how you expect the pattern will have changed by the year 2100.

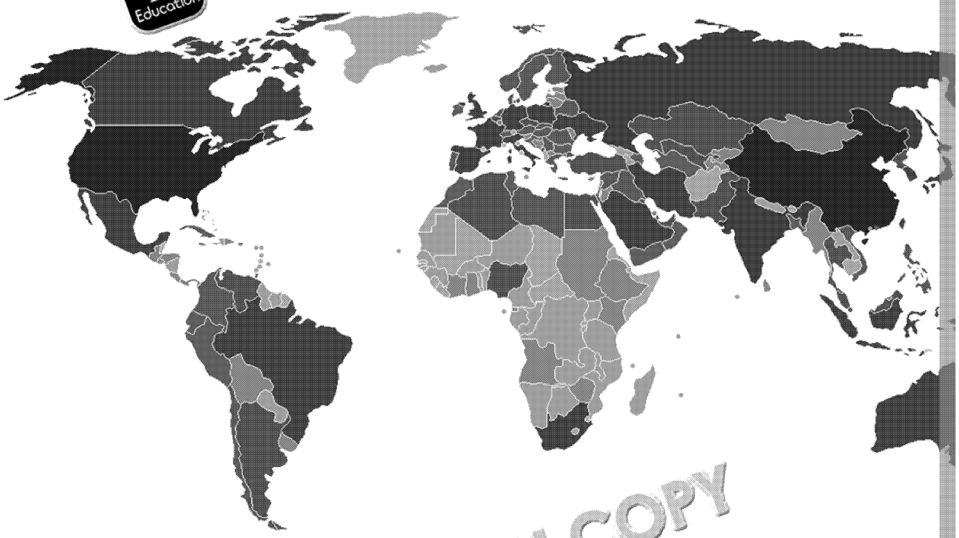


Figure D: Carbon dioxide emissions worldwide, 2

Extension

The term 'carbon footprint' has been used to describe the impact of mankind on t
through activities that emit CO_2. The approach enables people to make choices th
carbon they are responsible for producing on an individual, company or national l
offsetting this (e.g. by planting trees or capturing emissions). With reference to th
collected during today's lesson and your wider understanding of climate change, a
style question:

To what extent does the idea of a carbon footprint help us understand how human

Lesson 2 Answers

1. No correct answers; students' choice of words relating to past knowledge and under

2. Correct answer: B. The way heat from the Sun's rays becomes trapped in the Earth's Sun shines on a glass greenhouse.

3. Sentence should read:

A gas that	**traps radiation**	**from the Sun**	**causing the**	**atmos**

4. Paragraph should read:
The **atmosphere** is made up of many gases, but is mostly nitrogen (78%) and oxygen carbon [illegible] account for a very **small** volume of the total atmosphere, but ha Without [illegible] the average temperature on Earth would be much **colder** (around -18 the atmosphere are **increasing** because human activity is causing **more** heat to be tra than it would naturally. This affects weather systems, **changing** the climate of our pl

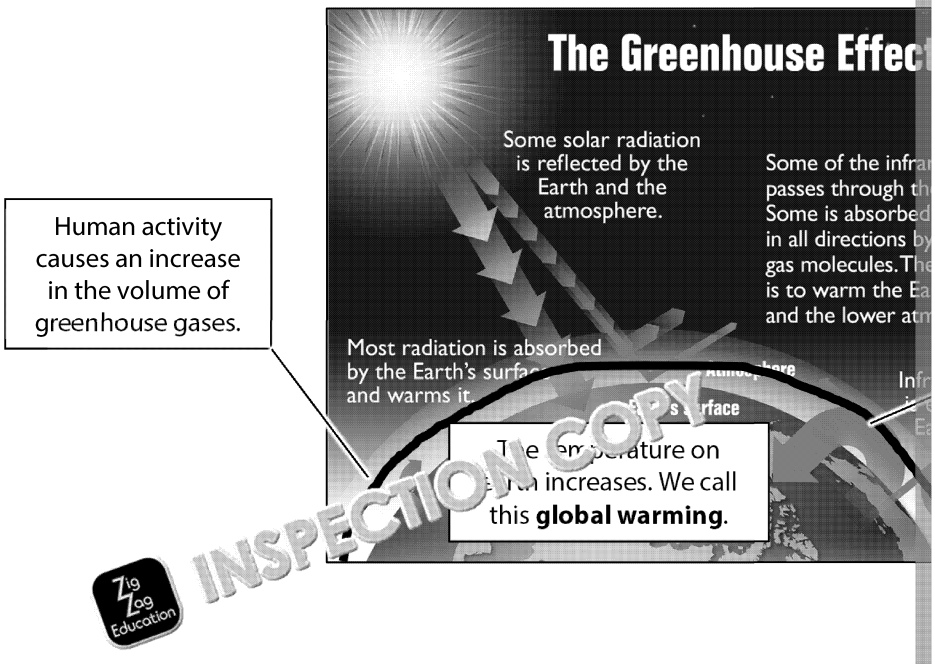
5. Correct ranking should be:

(a) amount produced by human activity	**(b) warming power (compared to CO_2) on Earth's atmosphere**	**(c)**
CO_2 – 89% CH_4 – 7% N_2O – 3% CFCs – 1%	CFCs – 3000 N_2O – 250 CH_4 – 21 CO_2 – 1	CO_2 CH_4 CFC N_2O

6. Mind map should recognise the following information:

Gas	**CO^2**	**CH^4**	**N_2O**
Sources	• Burning of gas, oil, coal, e.g. for power • Road vehicles • Deforestation	• Leaking gas pipes • Livestock farming • Rice farming	• Aircraft • Road vehicl • Sewage pro • Fertilisers

7. Annotated diagram should look something like this:



8. Correct answer is:

Over the last 150 years	Descriptio
Sea levels have risen by 21 cm.	Sea water expands as it gets warm (this is there is more water in the oceans from m
The average temperature has increased by 0.85 °C.	This may seem like a small amount but m the increase has occurred more rapidly as grown.
Arctic ice has shrunk by over 50%.	Monito[illegible] shown a very rapid decre[illegible] in the last 40 years.
More extreme and frequent weather events have be[illegible] recorded.	Warmer temperatures have caused great drought and heatwaves across the world.
Glacie[illegible] mountainous regions of the wo[illegible] got smaller.	90% of glaciers have experienced some sh faster than snowfall can replace it.

9. a) Emissions of CO_2 are higher in the more developed countries of the world and l countries of the world.

   b) Reasons should reflect information learnt so far this lesson, relating specifically emissions of CO_2 and the map from 2006 emissions data:
   - Wealthier nations are more developed, i.e. they have more vehicles on th from fossil fuels.
   - Poorer nations are less developed, i.e. they have fewer road vehicles and

   c) Explanation should reflect understanding of development and the evolution of however, marks should be awarded for reasoning, not accuracy of prediction; f

Emissions in wealthier countries decrease due to evolution of renewable energies – emerge[illegible] of solar and wind energy production and [illegible] suggests this could be a reality.	Emissions in wealthie increase as no chang climate change as a r new technologies an of fossil fuels.
F[illegible] countries remain low as these c[illegible] develop using renewable energy sources in recognition of the risk of climate change to these regions.	Emissions in poorer industrialise along a that experienced by

Extension

Mark students' responses in line with your chosen specification.

Students could draw on the following ideas (or any other valid points):

In support of the approach:
- It helps individuals recognise the activities that lead to the emission of CO_2 so they ca their choices.

Against the approach:
- It doesn't capture the effects of other greenhouse gases, specifically N_2O and CFCs.
- For really major change, national [illegible] need to act – not just individuals.
- It requires changes in the [illegible] to make less harmful sources of energy and food

Tropical rainforests: Structure and charac

	Description
Task 1	Create a poster exploring the characteristics, structure and proces

In this lesson you will:

✓ Create a poster showing the characteristics, structure and processes of tropic

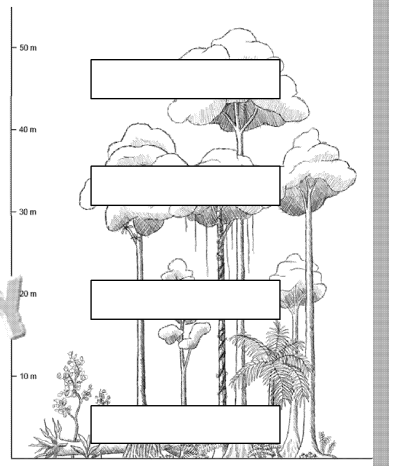
Task 1

Create a poster about tropical rainforests, using the template provided.

THE TROPICAL RAIN

Where do we [illegible] rainforests? Shade the area on the map.

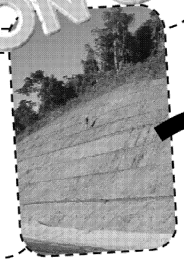
Label the layers of the tropical rainfores



Sketch a climate graph that you would expect fo[illegible] rainforest.

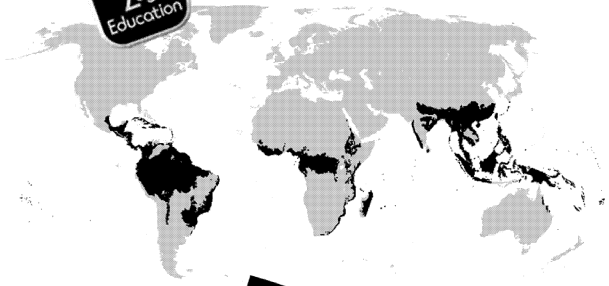
Sketch a typical nutrient cycle in a tropical rainforest.

Describe the soils in a trop[illegible] rainforest.

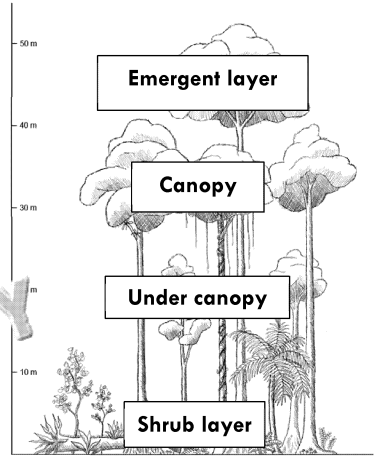


TROPICAL RAIN

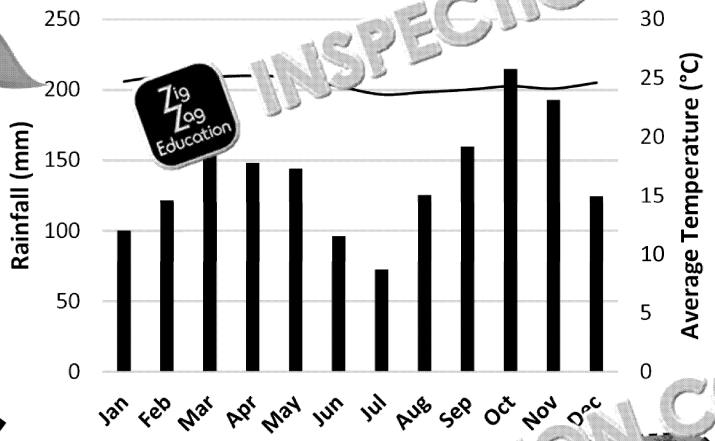
Where do we find tropical rainforests? Shade the area on the map.



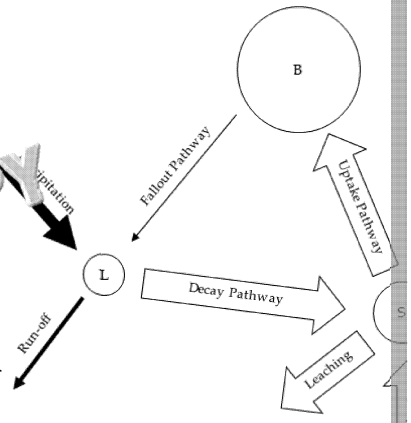
Label the layers of the tropical rainforest



Sketch a climate graph that you would expect for a tropical rainforest.



Sketch a typical nutrient cycle in a tropical rainforest.



Describe the soils in a tropical rainforest.

Deep due to [illegible] of parent material, poor [illegible] - high leaching and rapid nutrient [illegible] Mainly mineral content (red due to iron), very thin organic layer.

Coastal processes (II)

	Description
Task 1	How erosion and deposition work together to form headlands a
Task 2	Rock types and concordant/discordant coasts

In this lesson you will:
- ✓ explain how headlands and bays are formed
- ✓ explain how geology affects coastlines (longer answer)

Task 1

Describe how erosion and deposition work together to form headlands and bays.

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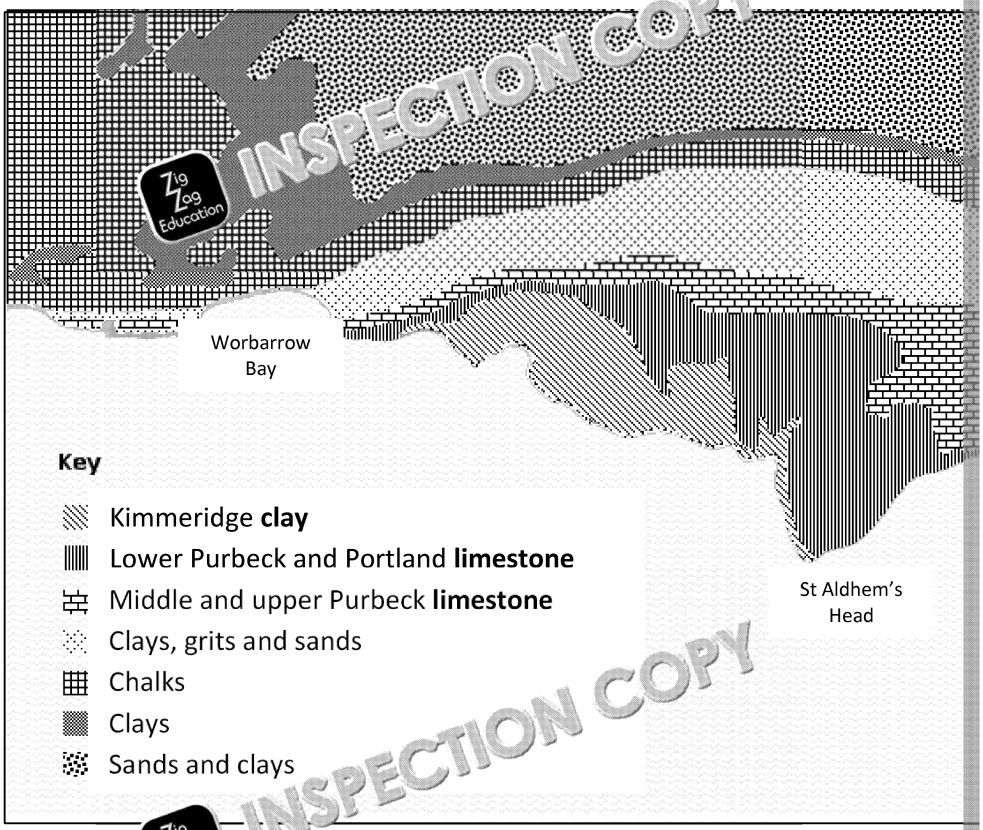
Task 2

Study the geology map below.



Using the m cuss how geology can affect the shape of the coastline.

You should consider some of the following points:
- Concordant and discordant coastlines (including coves, headlands and bays)
- Rock type – sedimentary, metamorphic and igneous and associated harnesse
- Structure – faulting, folding, joints
- Dip (slope towards or away from the land)

Coastal processes (II) answers

Task 2

- Headlands and bays form in discordant coastlines, due to differential erosion.
- Harder rocks are eroded more slowly.
- Wave refraction occurs.
- Material is transported towards the bays, and mat[illegible]is deposited in the bays.

River landforms

	Description
Task 1	Identify different landforms using maps and photographs
Task 2	Fill in the gaps to understand the stages of waterfall formation, and th each stage
Task 3	Understand the formation of interlocking spurs
Task 4	Order the stages of oxbow lake formation, and draw a cross section th
Task 5	Order sentences to describe how levees are formed
Task 6	Draw the long profile of a river to show a waterfall, and describe how it is formed

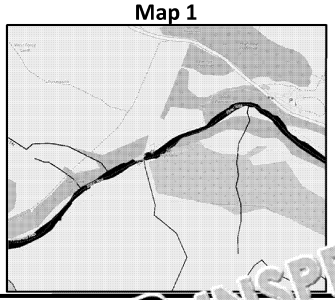
In this lesson you will:

- ✓ identify different landforms using maps and photographs
- ✓ consolidate your knowledge of the stages of waterfall formation
- ✓ consolidate your knowledge of the formation of interlocking spurs
- ✓ consolidate your knowledge of the formation of an oxbow lake
- ✓ order sentences to show how levees are formed
- ✓ draw a long profile of a waterfall and explain how geology changes along a ri

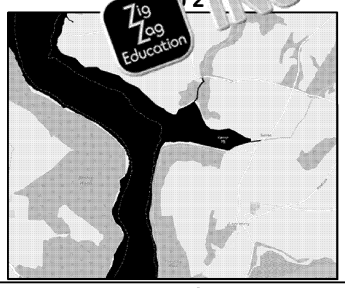
Task 1

Match the maps to the photographs.

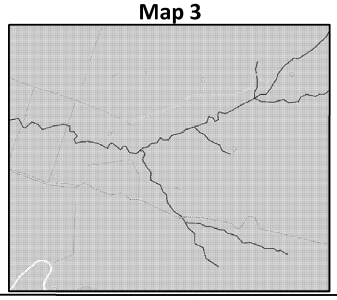
Map 1



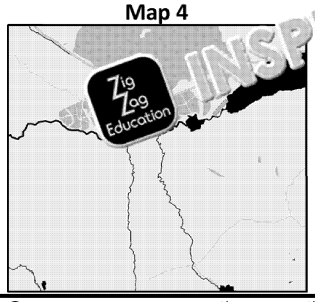
Map 2

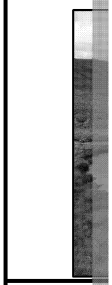


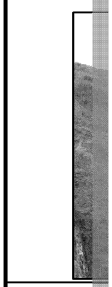
Map 3

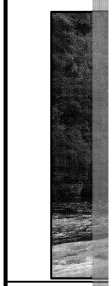


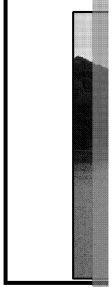
Map 4











Maps © OpenStreetMap contributors. Tiles courtesy of Andy Allan.

Task 2

1. Fill in the gaps using the words in the table below.

Waterfalls occur in the _____ course of a river, where the

_____ rock overlies soft rock. The layers of rock may be

the surface.

The harder layer of rock will form a _____, while the softer

_____ will form a _____ and an overhang of the harder rock above. Eventu

_____, and the collapsed debris will be eroded. A _____

the base of the waterfall. This cycle is repeated, and eventually the waterfall

backwards, upstream, leaving behind a _____ gorge, with

folded	upper	narrow	undercuttin
collapse	attrition	plunge pool	hard

2. Now that you have filled in the blanks, draw a series of diagrams to show hov

Stage 2: Underlying geology	**Sta**
Stage 3: Collapse	**Stage 4**

Task 3

Fill in the gaps using the words in the table below. Watch out for the red herring!

_____ occurs in the _____ course of a river. T

harder and softer parts of the rock – the river will take the path of least _____

the harder areas of rock. The areas of hard rock will, therefore, remain as higher

_____ pattern to the channel.

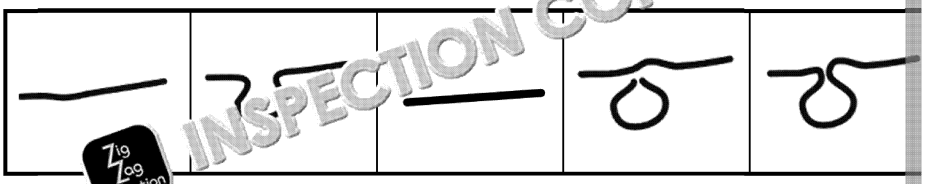
zigzag	upper	levees	interlocking s

Task 4

Oxbow lakes are formed from meanders. These landforms are created through e

1. Order the diagrams, from a straight channel to the formation of an oxbow la

2. Label each diagram with 'E' for erosion and 'D' for dep tion.



1	2	3	4	5

The photograph below shows a meander.

3. Draw a cross profile of the river channel.

4. Label the diagram with 'E' for erosion and 'D' for dep tion.

5. Label the diagram with 'F' for fastest ow and 'S' for slowest flow.

Task 5

The following sentences describe the formation of levees.

Order the sentences.

	They are formed during floods.
	The coarsest material is deposited closest to the river, causing the ridge to the channel.
	Levees rise as deposited material on each side of a river, increasing
	Water leaves the sides of the channel, spilling onto the floodplain.

Task 6

Waterfalls can clearly be seen on a long profile.

1. Sketch a long profile of a river to show a waterfall.

2. Describe how geology might change along your long profile.

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3. Describe the turbulence of the water along your long profile.

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River landforms answers

Task 1

Map 1 = Photo C – Waterfall
Map 2 = Photo D – Waterside
Map 3 = Photo B – Interlocking Spurs (or accept Photo A – Meander)
Map 4 = Photo A – Meander (or accept Photo B – Interlocking Spurs)

Task 2

Waterfalls occur in the **upper** course of a river, where the gradient is steep, and **hard** rock overlies softer rock. The rock may be **folded** to create an uneven surface.

The harder rock will erode **slowly**, while the softer rock erodes faster. This causes a step to form, with the harder rock overhanging the softer rock above. Eventually the overhang will **collapse**, and the collapsed debris will help to develop at the base of the waterfall. This cycle is repeated, and eventually the waterfall will retreat upstream, leaving behind a **narrow** gorge, with near-vertical sides.

Task 3

Interlocking spurs occur in the **upper** course of a river. They form where there are harder rocks. The river will take the path of least **resistance**, flowing around the harder areas of rock. The areas of harder rock remain as higher points, forming a **zigzag** pattern to the channel.

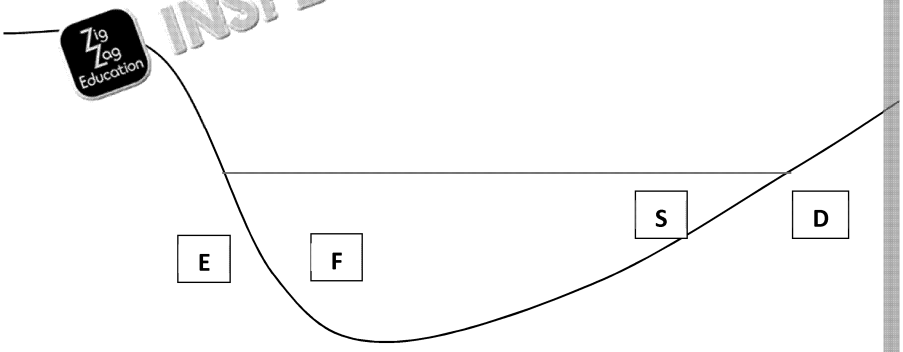
Task 4

1. The order should be:
   3, 1, 6, 7, 2, 5, 4

2. For all diagrams except diagram 4, erosion will be at the bottom of the diagram, while deposition is reversed in diagram 4.

3–5.

- Diagrams should have a steep river cliff and a shallow slip-off slope.
- Erosion should be on the river bank, while deposition is on the opposite slope.
- Fastest flow should be in the deepest water.

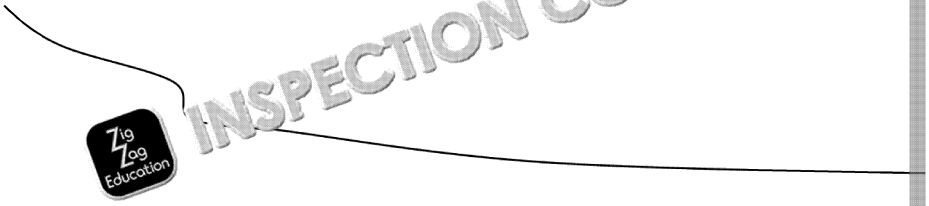


Task 5

The order is 3, 1, 4, 2.

Task 6

1. The long profile should show a knick point; for example:



2. Hard igneous and metamorphic geology in the uplands; soft, sedimentary geology in the lowlands. Students should discuss the geology in relation to the knick point, i.e. hard rock over soft.

3. Turbulent in the uplands. Reference to rapids in relation to hard points of geology. Turbulent in the plunge pool. Less turbulence downstream.

Human activities in glaciated landsca

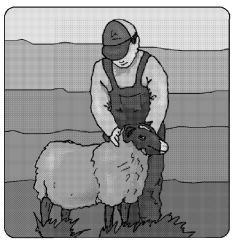
	Description
Task 1	Suggest reasons for different land uses in upland areas
Task 2	Suggest reasons for conflict as a result of commercial activity in
Task 3	Appraise the advantages and disadvantages of a proposed touri

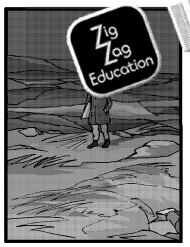
In this lesson you will:

- ✓ suggest why different economic activities occur in upland (glaciated) landscap
- ✓ consider reasons for conflict between users of upland landscapes
- ✓ assess the advantages and disadvantages of a tourist development in a glaciat

Task 1

Below are four examples of land uses in upland areas. For each, suggest why the activi





Task 2

Upland areas are fragile. This means that they are easily disturbed by human acti process. They have shallow soils and short growing seasons, and experience case this can make them ideal places for generating wind energy and providing wate

Conservation is the process of ensuring that an ecosystem is kept in its natural sta that human use should be carefully controlled and monitored to ensure that dam commercial activities you studied in Task 1 are, therefore, in conflict with conserv

For each activity, suggest why there may be conflict with conservation – and give the problem.

Activity	Problem	
Forestry		
Sheep farming		
Walking		
Quarrying		

Task 3

In this task [illegible] will [illegible] a proposed tourist development in an upland landscape. [illegible] developm[illegible]uld be allowed (or not)!

In 2017, a development was planned for a series of zip lines in the Thirlmere val[illegible] infrastructure such as a cycle path and toilet facilities.

The valley contains a reservoir and is located in the Lake District National Park. [illegible] than from traffic on the main road linking Ambleside and Keswick – there are fe[illegible] place. Many users of the valley are walkers, setting off for surrounding mountai[illegible]

The national park achieved UNESCO World Heritage Site status in 2017.
The zip lines were planned to cross the lake itself.

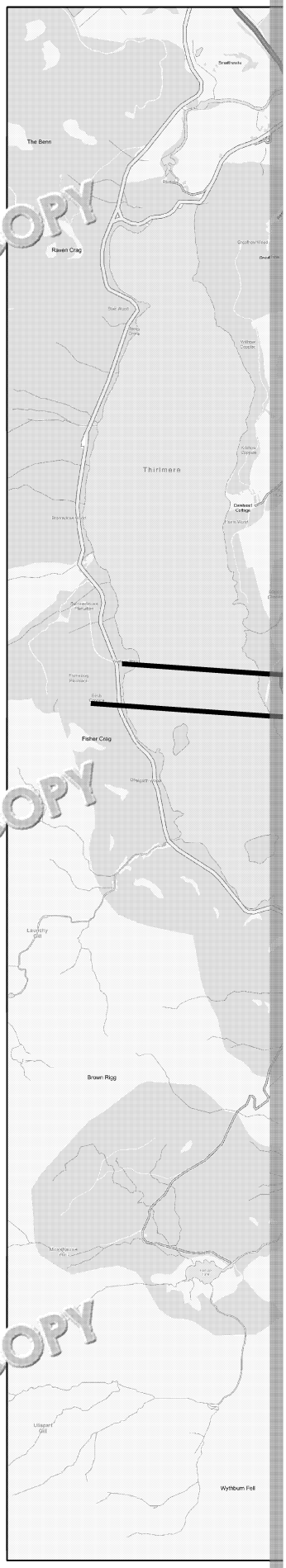
As part of the planning process, a period of public consultation took place, so tha[illegible] stakeholders such as the national park authority, tourist boards, conservation gr[illegible] residents, businesses, and the Ministry of Defence (MoD) (which uses the Lake D[illegible] express their views and concerns.

The responses to the development vari[illegible]me people were for the developm[illegible] about issues such as noise, visu[illegible]ob[illegible]siveness, increased traffic, etc. Some (su[illegible] groups) argued that the [illegible] was against the ethos of the national park, whil[illegible] and busin[illegible]ar[illegible]that the proposal would boost and rejuvenate tourism i[illegible] approval o[illegible]cheme was voiced by younger and middle-aged members of the[illegible] also started.

The planning application was withdrawn in February 2018 based on conflicting ev[illegible]

The Thirlmere valley (looking north)

A similar zip line has been constructed in North Wales



Contains Ordnance Survey data © (

The proposed locat

If you have access to the Internet, you can view the proposal here: **zzed.uk/lake-di**

Part 1

Using the information supplied above, can you think of five advantages and five d

	Advantages	Di
1.		
2.		
3.		
4.		
5.		

Choose two of the disadvantages you listed above. Suggest a way in which each p

1. .....

2. .....

Part 2

Can you explain the views of the different stakeholders involved in the consultatio

- Landowners and farmers
- Conservation groups, councils and authorities
- Local businesses
- The general public

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Part 3

Overall, do you agree or disagree with the proposal? Using your view, write a shor planning process. In your letter:

- Be formal.
- State who you are – you could be a local resident or someone who would visi
- State whether you agree or disagree with the proposal.
- Give reasons why.

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Human activities in glaciated landscapes answers

Task 1

- **Forestry** – lots of space to plant trees, and fast-growing conifers will grow in the upla
- **(Sheep) farming** – the land is too hilly and the soil poor for growing crops, but sheep
- **Walking/tourism** – beautiful landscapes, ideal for recreati d exercise.
- **Mining/quarrying** – valuable minerals and igneou ks, a away from other people

Task 2

An example of each is pr de – credit any possible problems and solutions.

Activity	Problem	
Forestry	Upland landscapes are covered in non-native conifers – both ecologically and visually obtrusive.	Plant native tree sp
Sheep farming	While sheep grazing in uplands can have many benefits, overgrazing is possible if stocks are too large.	Reduce stock densi
Walking	Footpath erosion (in some cases multiple parallel paths can develop), a visual scar on the landscape.	Maintain one path reseed the alternat
Quarrying	Large visual impact, removal of vegetation, noise, dust, etc., especially with opencast mines.	Use alternative qua underground instea feasible.

Megacities

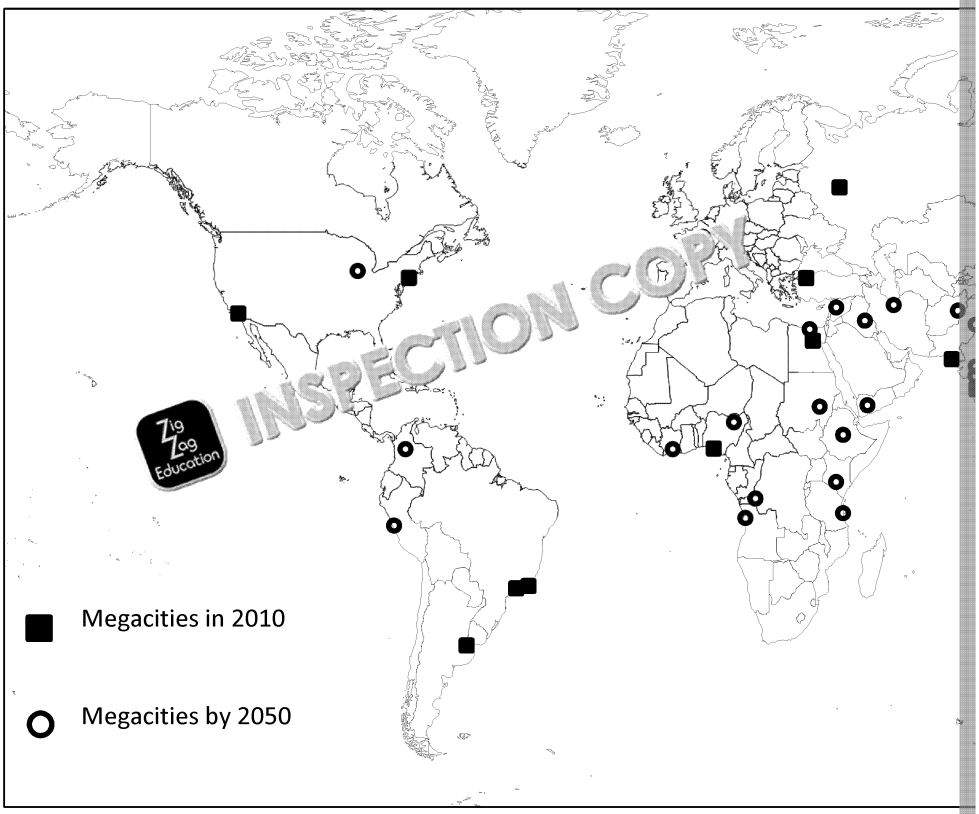
	Description
Task 1	Global pattern of megacities
Task 2	Trends and features of megaciti

In this lesson you will:

- ✓ be introduced to th of a megacity
- ✓ learn th ba n of megacities

Task 1

A megacity is a city with a population exceeding 10 million. It is difficult to quanti so it cannot be properly stated how many megacities there are in the world. How are over 40 megacities across the world. Below is a map showing world megaciti additions by 2050.



1. How many megacities can you name? Write them in the boxes below, remer
megacities and 2050 megacities. (You may also wish to label them on the ma

Megacities in 2010	Additiona

2. Which two continents contain the majority of global megacities? (Both 2010
your answers.

Africa Europe North America So

Asia Oceania Antarct

3. Why do you think the two continents you have circled in question 2 contain th

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4. Why do you think the number of megacities in the world is going to increase

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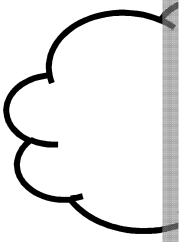
Task 2

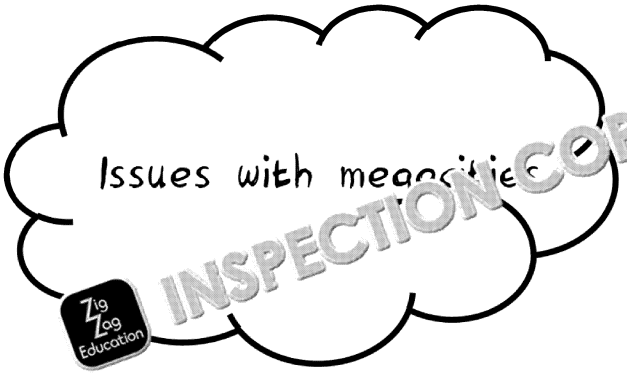
Megacities have over 10 million people and are usually quite crammed. They also
(LIC/LIDC) or emerging (NEE/EDC) countries. Push and pull factors result in the ra
Push factors are what influence people to leave their current home (usually a rura
and pull factors are influences that draw people into big cities.

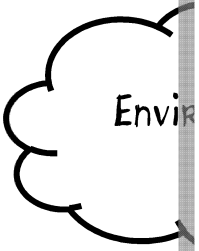
1. Read each person specification and decide wh[illegible] he push and pull factors are
megacity.

Person specification	Push factors
Jai is 23 years old and currently lives in the countryside in East Anglia, UK. He wants to study film and directing, but all the best courses are at universities in London. It is less than two hours on the train from his current family home to London, but he wants to move to the city to experience a new social life. He really dislikes rural life as he thinks it is too quiet with no nightlife, despite having lots of friends and family at home.	
Rani is 12 years old. She lives with her famil[illegible] in Haryana, India, where her fathe[illegible] brother work in agricultur[illegible] He[illegible] other wants to move th[illegible] to Delhi as there is highe[illegible] wo[illegible] him there and he says Rani c[illegible] a better education in the city. Rani currently helps her mother sewing clothes for neighbours, but she wants to be a doctor when she grows up. Rani and her family are Hindu, her mother has mutual friends with people in Delhi who live in a large Hindu community, and they have stated in the past that the family would be more than welcome in the local community.	
Luca is 45 years old. He has worked as a labourer for the last 25 years and has considerable health issues with his back. He lives just outside Rio de Janeiro but is considering moving into the city. He do[illegible] not have much money, as hea[illegible]re is expensive, but he can[illegible] work as a labourer d[illegible]k. He is thinking of movi[illegible]ocinha, a favela area. Luca knows[illegible] will be crammed and is aware of the high crime rates, but it is all he can afford in the city. He is hoping that he can get a job and that he can save up to afford the healthcare in the city centre.	

2. Complete the mind map to show what you think are some of the issues with about social, economic and environmental issues.







Megacities answers

Task 1

1.

Megacities in 2010	Additional
• New York City • Los Angeles • Mexico City • Rio de Janeiro • São Paulo • [illegible] • [illegible] • Istanbul • Cairo • Lagos • Luanda • New Delhi • Kolkata • Karachi • Beijing • Shanghai • Seoul • Tokyo	• Paris • Minneapolis • Bogota • Lima • Kano • Accra • Kinshasa • Addis Ababa • Nairobi • Dar es Salaam • Alexandria • Khartoum • Sana'a • Tehran • Baghdad • Damascus • Kabul • Lahore • Suzhou • Wuhan • Jakarta • Busan • Ho Chi Min City • Phnom Penh • Bangkok • Mumbai • Chennai • Bengaluru • Ahmedabad • Surat • Nashik

2. Africa and Asia

3. Africa and Asia contain a lot of emerging (EDC/NEE) and developing (LIDC/LIC) countries urban areas are rapidly developing and most development is contained within these

4. Answers include but not are not limited to:
   - Global population increase – natural growth
   - Development – urbanisation is a key feature of development
   - Big cities will keep getting bigger – more cities will become megacities

Task 2

1.
   - Jai – Push factors: quiet rural life. Pull factors: university courses, better social life, family and friends at home.
   - Rani – Push factors: her family want her to move, sewing clothes is limiting her. Pull factors: her dad wants to move for work, better education (especially as she was (Hindu community) and social [illegible] welcomed into existing community with mu
   - Luca – Push factors: [illegible] longer work due to bad back. Pull factors: job prosp housing

2. Answers include but are not limited to:
   - Social – overcrowding; informal/illegal housing which is unsafe or unsanitary; oth healthcare, education and services; gentrification pushes locals out; some living
   - Economic – wealth and poverty gap (economic inequality); increasing house/lan and bust' cycles – high pressure to keep city regenerating as economic cycles su peak, it falls into decline.
   - Environmental – congestion (from traffic), air pollution, water pollution (in slum

	Description
Task 1	Case study: Lagos

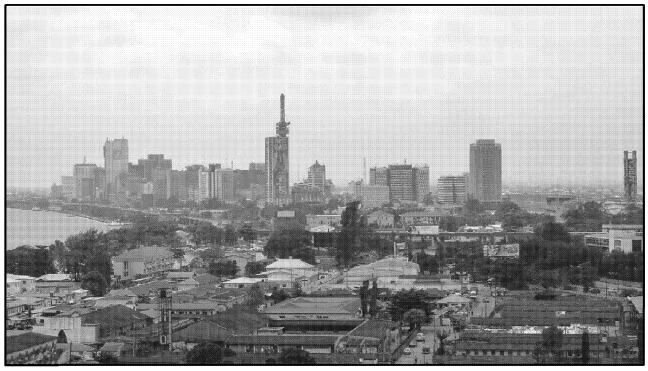
In this lesson you will:

- ✓ learn issues with megacities through a case study of Lagos

Task 1

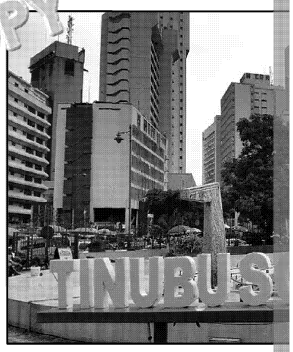
Carefully read the case study on Lagos before answering the questions that follow

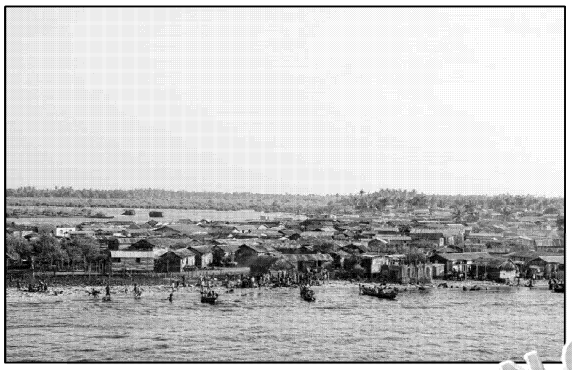
Megacity Case Study: Lagos, Nigeri



Lagos is a megacity in N
Although Lagos is not th
by far the most populou
over 21 million people. I
populous city in the wh
definition of a city prope
10.5 million people, alth
a much smaller inner zo

Nigeria is an emerging country, (also known as an EDC or NEE). Nigeria stand for the 'N' in the te
'MINT countries', referring to the rece
developing economies (alongside Me
and Indonesia). Busines
make up 10
asset in N
of Lagos is
middle of Lagos Island is Tinubu Square, housing the Central Bank of Nigeria. The square is seen as a global hub of business and financial activity.





Although Lagos is seen as an
it still encounters several issu
face. One of those issues in i
known as slums. The photog
informal housing set up on th
Many people in Lagos live in
many workers have to comm
day (a two-hour trip each wa
the city

In 2016, many residents of the Oto
after demolition of the site
and 15 people are
a part of a
and sugge
country tha
locations are very popular with developers and investors; therefore, the site of Otodo
estate for developers. The sudden increase of land value is what locals suggest is the
several slum sites along Lagos's waterfront. The site will most probably be used for lu
will sell at high prices to the wealthy and affluent. It is highly unlikely that locals will b
site of their homes and livelihoods.

1. Why is Lagos considered a megacity?

2. Why is Lagos economically important to Nigeria?

3. What is congestion, and what do you think the issues are with congestion in

4. What are some of the social issues facing Lagos?

5. 'It was justified to destroy the Otodo Gbame waterfront site in order to build make investors a lot of money and will benefit Nigeria's growing economy'.

   Do you agree with the above statement? Explain your answer fully.

6. Imagine you are a developer who is looking to improve Lagos's informal hous
on the valuable land in order to sell to affluent customers but you also want t
not lose their livelihoods and are not forcibly removed or displaced. In the sp
the sustainable redevelopment of the waterfront location. Remember to inc
i.e. economic, environmental and social. You may wish to include sketches in

Lagos: A case study answers

Task 1

1. Lagos has over 21 million people; the definition of a megacity is over 10 million.

2. Lagos is an economic hub: it has Tinubu Square – a global fi[illegible]cial and business hub, Nigeria's GDP.

3. Congestion is the build-up of vehi[illegible] cars, in one particular area or road. Co through photochemical sm[illegible] caused by the fumes from vehicles mixing with air and causes damage to th[illegible] ecosystem and loss of biodiversity, and can cause respiratory p

4. Displace[illegible] f people living in slums. Deaths due to destruction of homes and livin valued more than human lives. Workers having to commute for four hours to get to poor connectivity.

5. Answers will differ between students, but the following should be taken into conside
   - Value of the land vs value of human life
   - Can economic profit justify the loss of life / displacement of thousands?
   - Pros of growing the economy and developing on the land
   - Other cons, besides displacement and death, e.g. Environmental impact
   - A fully justified conclusion

6. Answers will differ between students, but the following should be taken into conside
   - Environmental considerations of sustainability, e.g. Proper waste disposal to re
   - Social considerations of sustainability, e.g. Mixed housing to accommodate loca investors; consider redeveloping another area to eradicate displacement of loca
   - Economic considerations of sustainability, e.g. [illegible] jobs to locals, improving to city centre for jobs

Development theories

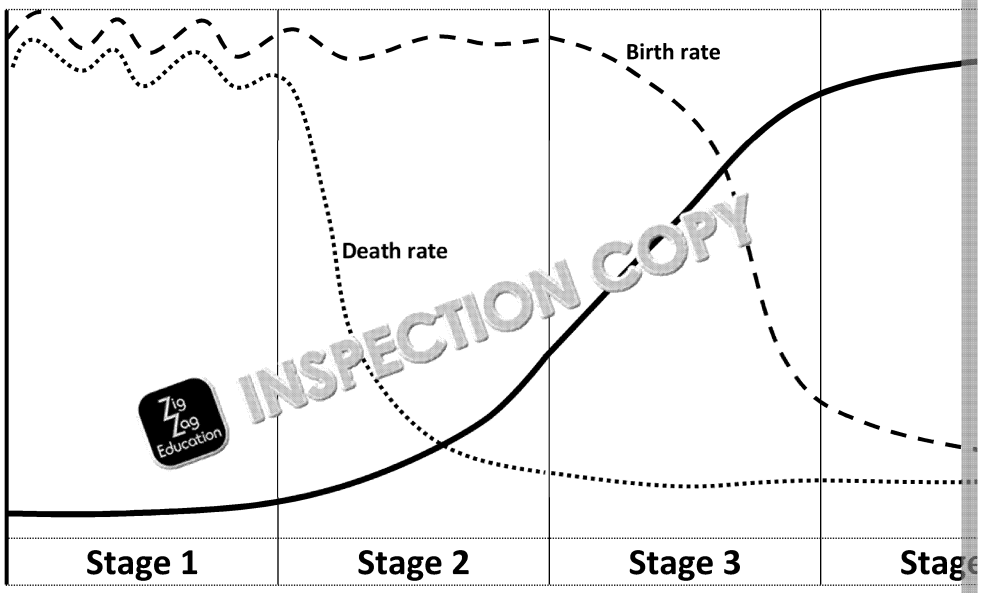
	Description
Task 1	The DTM, Frank's dependency theory and Rostow's model
Task 2	Physical influences on development
Task 3	Political factors

In this lesson you will:

- ✓ learn about the DTM, Frank's dependency theory and Rostow's model.
- ✓ learn about the physical factors that hinder development
- ✓ learn about the political factors that hinder development

Task 1

The Demographic Transition Model (DTM)



1. Describe the trends of each stage of the DTM in the grid below. The first one

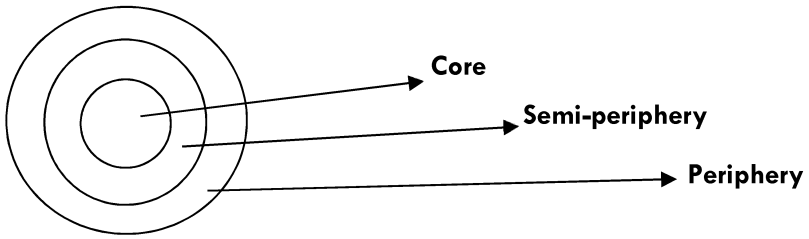
Stage	Description
1	*Birth rate and death rate fluctuate; although both remain high,*
2	
3	
4	
5	

Developing countries tend to be in stages 1 and 2 of the DTM, although it should b
currently estimated to be in stage 1 any more. (However, small local communities
be considered to be in this stage.) Emerging countries are usually in stage 3, with
The DTM used to stop at stage 4, with developed countries being classified as this
developed countries are experiencing a population decline due to death rates out
low fertility rates and an ageing population). These countries make up stage 5 of

2. Study the data from each country and state which stage of the DTM you think

Country	Birth rate	Death rate	Population growth	
	12.1	9.4	0.52%	
India	19	7.3	1.17%	
Ethiopia	36.5	7.7	2.85%	
Japan	7.7	9.8	-0.21%	
Germany	8.6	11.7	-0.16%	
Afghanistan	37.9	13.4	2.36%	
Ghana	[illegible]	7	2.17%	

Frank's dependency theory

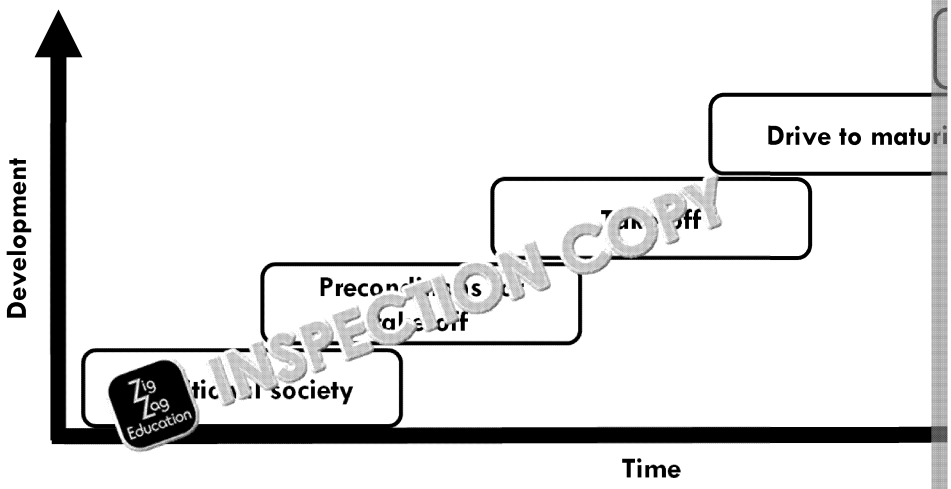


Frank's dependency theory suggests that some countries become dependent on c
into 'core' and 'periphery' sectors. The core sectors are the countries which the p
countries are usually developed countries, while the periphery is usually developi
argues that economic activity in the periphery zone benefits the core zone, but no
zones are countries between the core and the periphery. Economic activity in this
periphery and the core, but mainly the periphery. Countries in this zone are usuall

Frank's dependency theory provides one explanation as to why developing countr
developing to their full potential. This is that developing countries become reliant
may be for a number of reasons, although over-reliance on aid, foreign direct inve
essential goods is often the cause.

3. In the space, below complete the following:
   - Redraw the model for Frank's dependency theory.
   - Draw arrows on the diagram to represent the relationship between eco
   - Annotate your diagram to show why developing countries may be held b dependency.

Rostow's Modernisation Theory



Rostow's modernisation theory suggests there are five stages to development. Thi

Stage	Definition
1. Traditional society	A society based on subsistence agriculture; no economic grow no central structure
2. Preconditions for take-off	A society in which economic growth is potential; agriculture m become commercial, developing 'cash crops'
3. Take-off	Industrialisation begins; economy moves from primary to secondary as manufacturing becomes the major sector
4. Drive to maturity	Rapid economic development; urbanisation; social developme including building schools, hospitals and social amenities
5. High mass consumption	Highly urbanised society; shift to tertiary and quaternary sect high economic output and input; normalised society of high-v consumer goods

4. In the table above, write an example country or society that fits in each stage of

Some critics argue that Rostow's theory is a very simplified version of developme
follow the model in reality. Critics argue that not all societies want to follow this
countries want to end as in 'high mass consumption' societies. They argue that t
and there are many elements of development that are not taken into consideratio
such as the environmental impacts a high mass consumption society will have.

5. Do you agree with the critics of Rostow's model? Explain your answer.

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Task 2

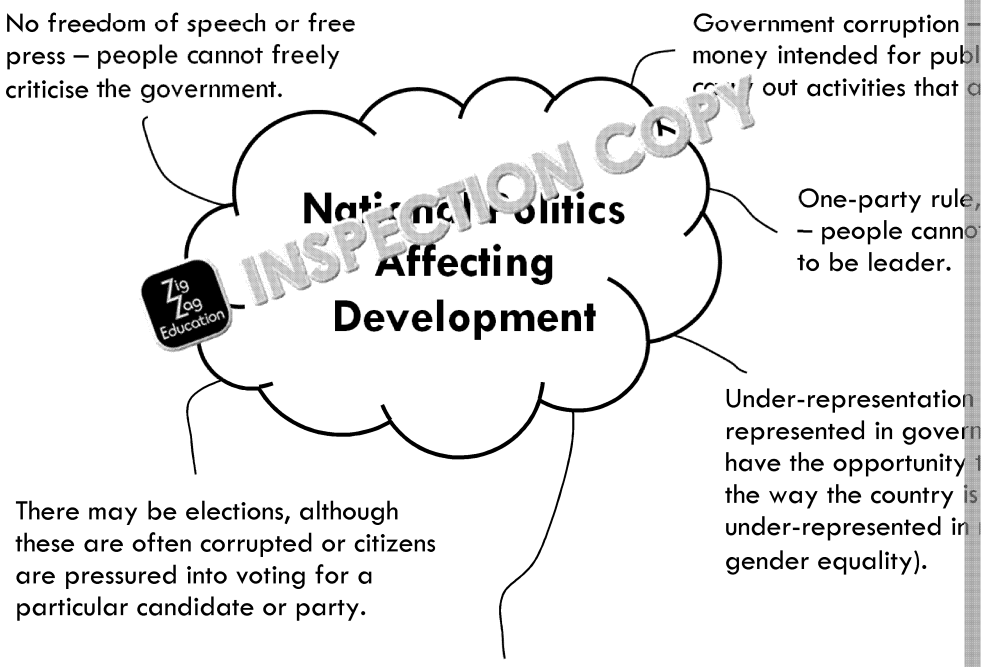
Physical factors can hinder development. Environmental features such as climate
an influence on the way societies are shaped and develop. For example hot, wet,
experienced in rainforests) are the perfect breeding grounds for malaria-carrying
disease that can be life-threatening if not treated. High rates of disease in develo
is a higher demand on healthcare (which may already be under strain). It may als
budgeted for one area of development (such as economic development) may inst
the high disease rates. Relief can hinder development. Settlements in are
slope that experience low levels of rainfall may have droughts, causing a crop failu
expensive irrigation systems). Alternatively, settlements in areas of low relief, suc
of flooding due to sea level rise. Flood defences are often expensive, and develop
to afford state-of-the-art flood defence schemes. Topography also hinders develo
settlements. Informal settlements such as slums are built on areas with a
planners don't want to build there). These places are usually in areas with topog
rocky (meaning it unsuitable for building on) or on very steep hillsides (which ar
unsuitability of certain topographic areas makes infrastructure development very

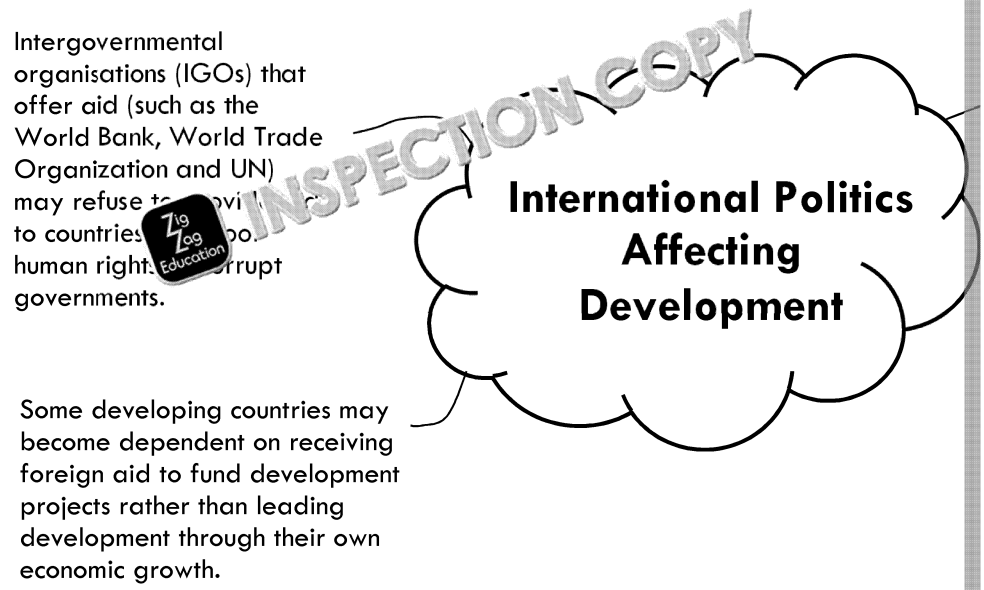
1. Fill in the table to show how physical geography may affect development on

Physical factor	Example	How this affects
Climate (long-term weather patterns)	Tropical rainforest (hot and wet), climate	
Relief (difference in height of surrounding land)	Low relief, such as coastal areas, or high relief, such as mountainous areas	
Topography (ground surface)	Rocky and mountainous topography	

Task 3

Politics affects development in numerous ways and on different scales, from natio





1. Choose a factor from either of the mind maps and explain in more detail how

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2.
- Imagine you are the chief executive of a small non-governmental organi
to developing countries.
- You want to set up a development project that delivers water pumps to rem
- Your plan is to fundraise in the UK and get donations from people through
- You will then send the money to the national governments of the countr
help. The governments have said they will use the money to buy and ins
builders and engineers.
- However, some of the villages you want to provide water pumps for are
of government corruption.
- You are not sure how reliable your plan is regarding giving your fundrais
governments. You need to weigh up the pros and cons of your schem

In the s elow, write a list of bullet points weighing up the pros and cons
then state whether you are going to carry on as planned or create a new sch
on, explain why; if you are going to create a new scheme, describe it in detail

Pros	Cons

I am going to carry on with the scheme because… / I have a new plan whic

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Development theories answers

Task 1

1.

Stage:	Description
1	*Birth rate and death rate fluctuate; although [illegible] remain high, total popul*
2	Death rate begins to fall, birth rate [illegible] remains high, and population begins to
3	Birth rate begins to fall [illegible] rate stabilises, and population continues to i
4	Birth rate and [illegible] are both low; population begins to stabilise and re
5	[illegible] rises and overtakes birth rate (which is declining), and total popu

2.

Country	Birth rate	Death rate	Population gro
UK	12.1	9.4	0.52%
India	19	7.3	1.17%
Ethiopia	36.5	7.7	2.85%
Japan	7.7	9.8	-0.21%
Germany	8.6	11.7	-0.16%
Afghanistan	37.9	13.4	2.36%
Ghana	30.5	7	2.17%

3. One arrow should be drawn from the periphery to the core (annotated to show that the core). Arrows should also be drawn from the semi-periphery to the core and fro (or a two-way arrow between the two) and annotated to show how activity in the se Another annotation should show how [illegible]vity only benefits the core.

4.

S[illegible]	Definition
1. Traditional society	A society based on subsistence agriculture; no economic growth; structure
2. Pre-conditions for take-off	A society in which economic growth is potential, agriculture may b commercial, developing 'cash crops'
3. Take-off	Industrialisation begins; economy moves from primary to seconda manufacturing becomes the major sector
4. Drive to maturity	Rapid economic development; urbanisation; social developments building schools, hospitals and social amenities
5. High mass consumption	Highly urbanised society; shift to tertiary [illegible] quaternary sectors; h economic output and input; norm[illegible]society of high-value cons

5. Answers will differ between stu[illegible]s.

Task 2

Physical factor	Example	How this affects
Climate (long-term weather patterns)	Tropical rainforest (hot and wet) climate	Certain climates are more prone to di waterborne diseases such as typhoid climates, and other vector-borne dise prevalent in these climates as they ha temperatu levels for breeding mosc de velopment as money is often not a and money that is goes towards preve spent elsewhere, e.g. on education.
Reli (difference in height of surrounding land)	Low relief, such as coastal areas, or high relief, such as mountainous areas	Areas of low relief, such as coastal are from sea level rise caused by climate are particularly at risk due to less stab well as more informal housing in coas e.g. the Pacific Islands.
Topography (ground surface)	Rocky and mountainous topography	Rocky and mountainous topography i many settlements that are built on th housing settlements such as slums, fa types of settlement are mostly found countries due to high urban populatio

Task 3

1. Answers will differ between students, alth h a factor should be chosen from the e

2. **Pros include:**
   - provides ac to clean water in remote areas where it is needed
   - ra are less in the UK of issues in developing countries– may lead to similar

   Cons include:
   - risk of the money not reaching the correct people to install the water pumps if it
   - may have negative effects on people's willingness to fundraise in the future

   I am going to carry on with the scheme because… / I have a new plan which is…
   Answers will differ between students.

Uneven development

	Description
Task 1	Economic factors
Task 2	Historical and social factors

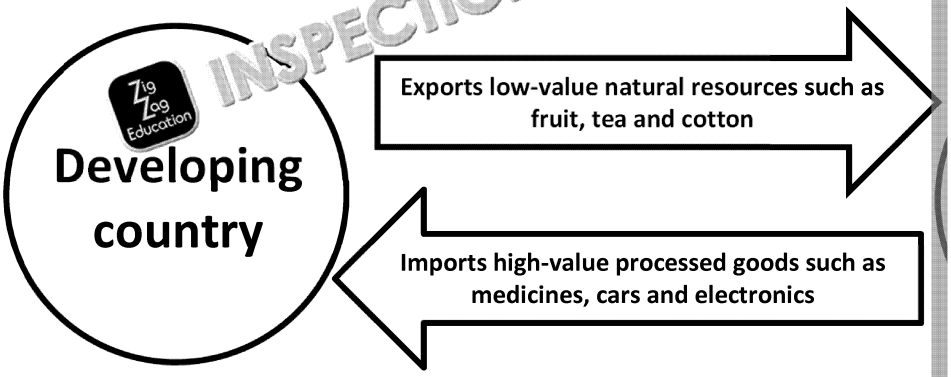
In this lesson you will:

- ✓ learn about the economic factors that hinder development
- ✓ learn about historical and social factors that hinder development

Task 1

Economic factors can hold developing countries back from developing to their full potential. There is limited money available for development, or money that is available is unequally distributed. Examples of this include:

- There is a limited amount of money being spent on healthcare, such as investment in treatments for preventable diseases.
- Money that should be going towards reducing preventable diseases may be spent on other things, or decide where money gets deployed.
- Money may be corrupted by governments and politicians for personal gain.
- Economic growth is highly uneven – this means that development is not even, with some countries developing faster than others (especially in big cities that are considered economic hubs).
- Economies become dependent on one another – for example, a developing country may rely heavily on a developed country for the import of certain goods (such as medicines and technology), preventing the developing country from developing their own economy and becoming more self-sufficient.



This diagram shows the common relationship between developing and developed countries.
Developing countries often export low-value items such as crops and low-value natural resources.

Developing countries often rely on developed countries for high-value goods such as technologically processed products. This dependency is considered high-risk due to the high-value goods that are being imported from developed countries.

1. Imagine the following scenario:
The developed country that the imported goods come from suddenly halts ex
country cannot receive the high-value goods).

Explain what this situation would mean with regard to the following:

a) What would this mean in the short term for the developing country in te
value goods (remember some goods may be ess- -l goods such as me

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b) What might the wider impacts be of this scenario – do you think the dev
survive just through exporting low-value goods?

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c) W a g lution to this scenario?

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d) How do you think this scenario explains the risk of economic dependenc

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Task 2

Other factors that hinder development are social factors. This includes factors ro
impact countries today, such as colonialism. Also included are demographic ineq
inequality, income inequality and social status inequalities.

Colonialism:
When a country takes over another country or region, usually through force, resulting in violence, widespread displacement of native pe[illegible] mass fatalities. Exa[illegible] colonialism throughou[illegible] include the British, French, Du[illegible] anish and Portuguese colonisation of Africa, the Americas and the South Pacific islands.

How it [illegible]ts development:
Co[illegible]ism creates socio-econor
negatively affects native persons
Historical links to other countries
and religion (which may not affe
tensions between different socia
countries have since gained inde
held back from developing due t
had on their economy, land and

Income inequality:
There can be huge difference between the incomes of the richest and poorest in society. This can be linked to level of education, but that is not always the case. A basic minimum wage (or living wage) is required to maintain a basic standard of living.

How it affects development
People on low incomes may no
housing costs, healthcare and o
can afford these, they may have
(extra money to spend on com
buying new clothes and other p
can cause disparities in the qua
mentally and physical well peo
the standard of living.

Gender inequality:
Women and girls are often held bac
socially, economically and p[illegible]ally.
This includes throu[illegible]tion. Girls
often rece[illegible]ver years of education
than boys d[illegible]stigma surrounding
their gender, being expected to marry
young (sometimes against their will) and
have children.

How it affects development
Having less education means wo
career if they want to, or achiev
Women are heavily under-repre
politics. This commonly leads to
heavily unbalanced and not taki
into consideration. Women and
violence. This threat is often un
face injustice when it comes to
harassment.

1. Spend a few minutes highlighting (or underlining) the important and useful p
2. In 50 words or fewer, explain in your own words why each of the above facto

Colonialism	
Income inequality	
Gender inequality	

Uneven development answers

Task 1

1. a) People rely on medicines for health. (There will be serious health implications a
essential goods will also be relied on and will have severe impacts if they stop b
b) Answers will differ between students.
c) Answers will differ, although consideration of the following should be taken int
economy, how to successfully reduce inequality, how to increase their own p
d) Developing countries are at risk of losing their income from high-value goods d
issues with the exportation of goods from developed countries would have neg
consequences for the developing country.

Task 2

1. Highlighting or underlining will depend on what each student thinks is relevant to th

2. Answers will differ between students, although each answer should be a concise ver
student's own words.

Population change & demographics in t

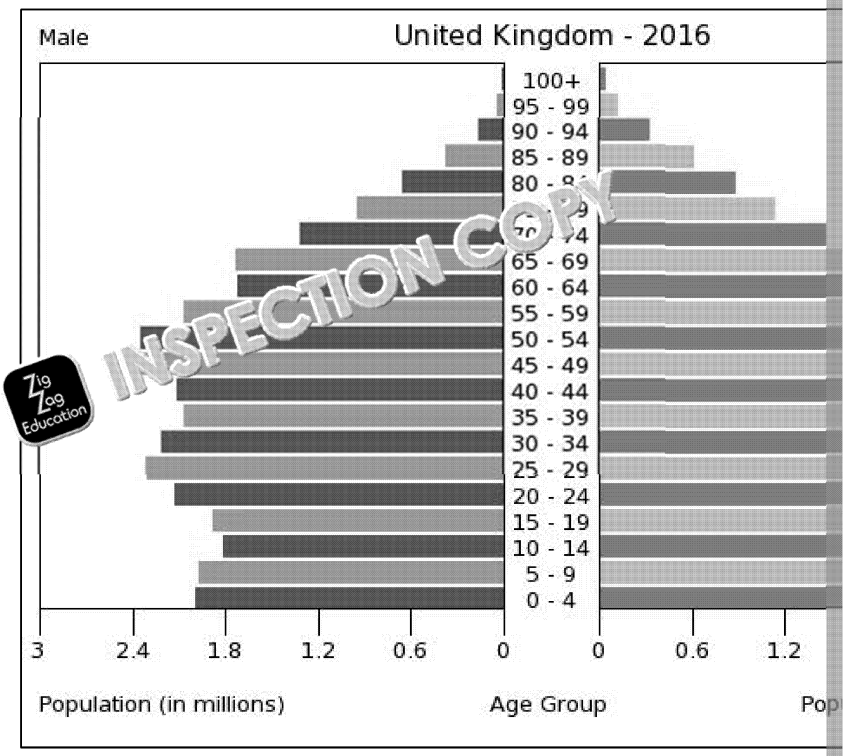
	Description
Task 1	Introducing population pyramids and the UK's population chang
Task 2	The UK's changing population
Task 3	The UK's ethnic diversity

In this lesson you will:

- ✓ learn a[bout] the [UK] population through studying its population pyramid
- ✓ learn a[bout] the UK's demographics

Task 1

Below is a population pyramid for the UK in 2016. Population pyramids show data composition of a country. This means the number of males and females in specifi country's whole population. Spend a few minutes studying the UK's 2016 popula into consideration the scale (as this changes across different pyramids).

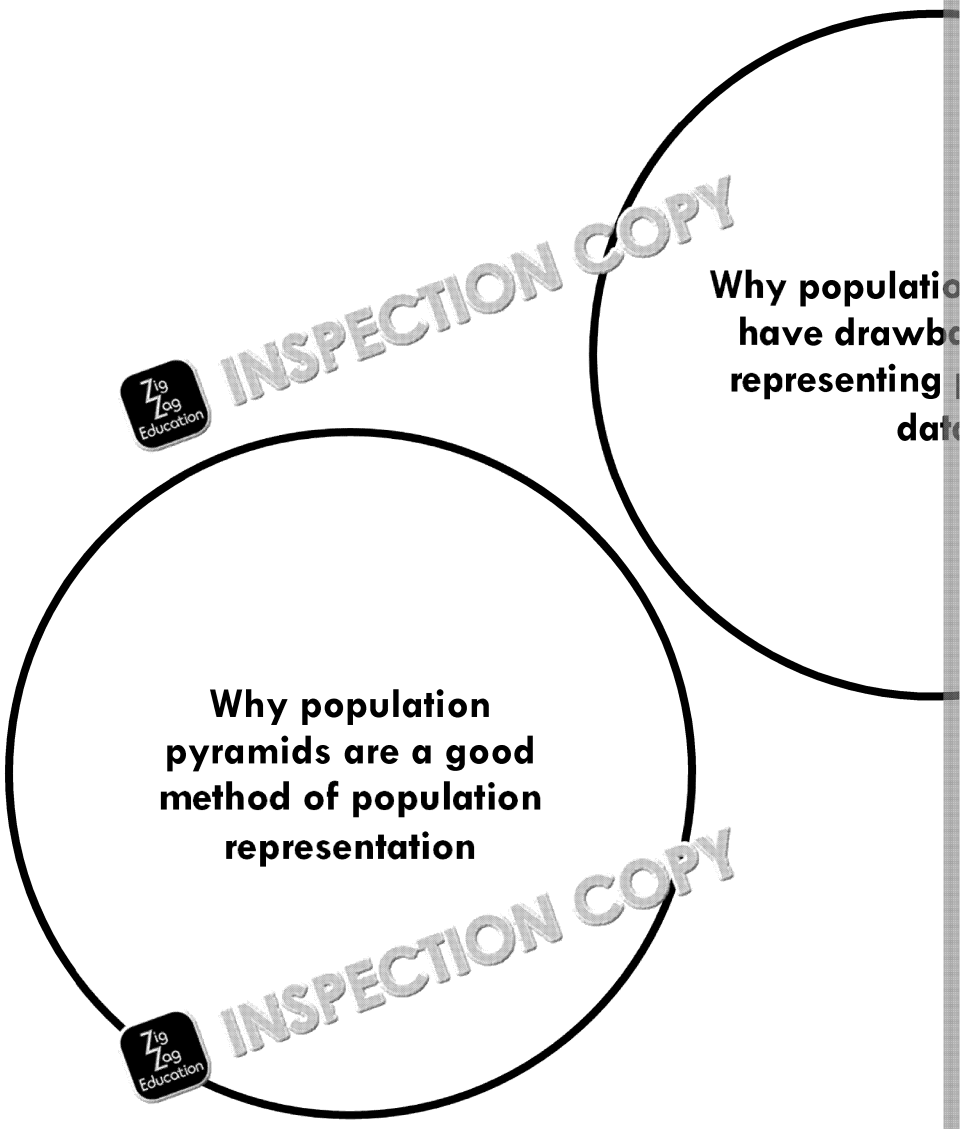


1. Identify the trends in the UK's 2016 population pyramid, writing your answer been done for you.

Trends	Answers
Category with the smallest [number] of the population:	*Males, 100+*
Category(s) with the largest percentage of the population:	
Largest age group among males:	
Largest age group among females:	
Number of people, overall, in the 0–4 age category:	
Category closest to one million people:	

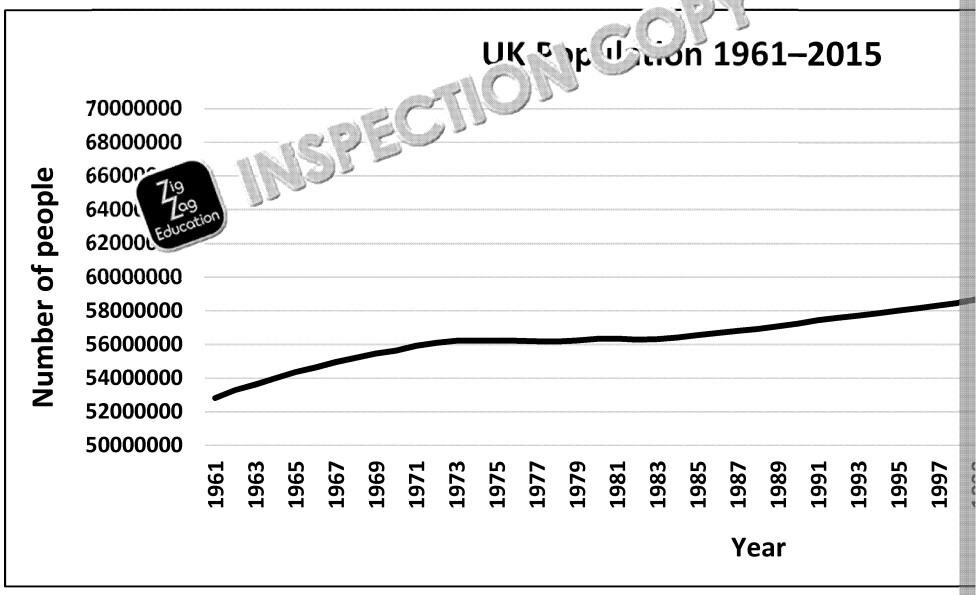
2. Some people say that population pyramids are a good way of showing popul
others argue that they have drawbacks. Sort the following opinions into the
numbers into the circles below.

1. **They are a visual representation. It is easy to see the patterns betwee**
2. **They show a very limited scope of dem[illegible] data. They do not inc**
3. **They give quantitative dat[illegible] not qualitative data.**
4. **They do not s[illegible] reasoning for the patterns and trends.**
5. **Th[illegible]ume people are placed into either 'male' or 'female'. They do differences in gender identities.**
6. **They can be used alongside other countries to be used as a comparis**
7. **They can be used a tool to see the level of development of a country.**
8. **They are versatile as they can be used to show population data of a re**

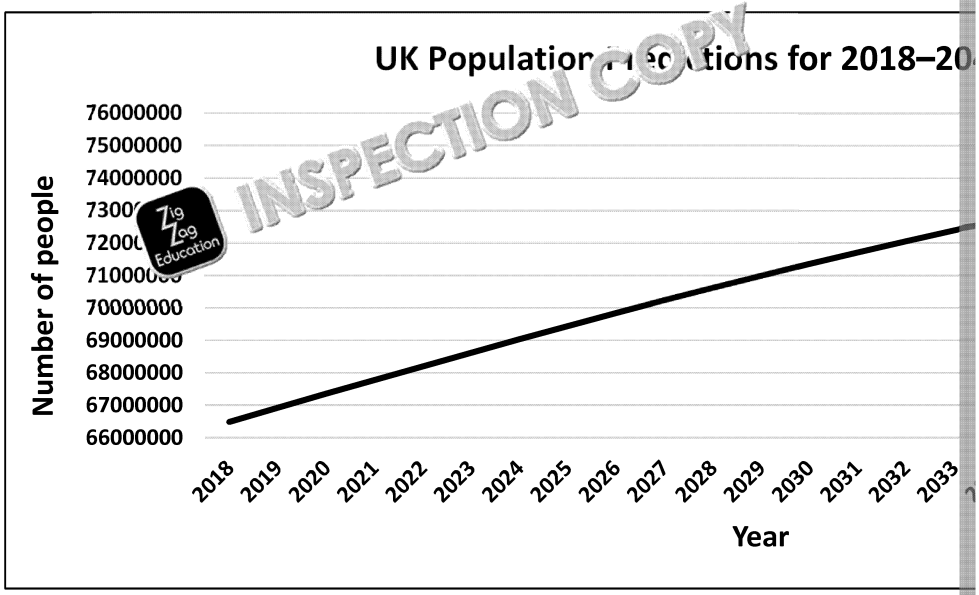


Task 2

Below are two graphs; one shows the historical population change in the UK and t
predicted population of the UK might be in the future. The data comes from the
(ONS), which has lots of information regarding the population and demographics
https://www.ons.gov.uk/



Source: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/over



Source: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/over

1. Describe the trends for the UK's population between 1961 and 2015.

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2. The trend predicted population of the UK between 2018 and 2040 is expecte
is? (Hint: think about the following factors: birth rate, death rate, fertility rat

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Task 3

Demographics is the name given to the make-up of the population. This includes
backgrounds, ethnicities, religions, sexualities, age groups and cultures. Listed be
in the UK taken from the latest census data in 2011.

White	87.2%
Black / African / Caribbean / Black British	3%
Asian / Asian British: Indian	2.3%
Asian / Asian British: Pakistani	1.9%
Mixed	2%
Other	3.7%

1. Fill in the gaps using the words in the box below to complete the paragraph c

The UK has a mix of different ethnicities within its population, this is also refe
_____. This is often seen as good thing as it brings toge
_____, which helps pave the way for _____
socio-economic _____. However, in some areas, this ma
_____ and negative impacts such as social _____
and racism. Different areas across the UK have different demographics. The
_____ areas, such as _____ and _____
least diverse areas tend to be _____ areas, such as _____
_____.

cultur	urban	Devon	Cornwall
rural	London	tensions	social
diversity	Birmingham		

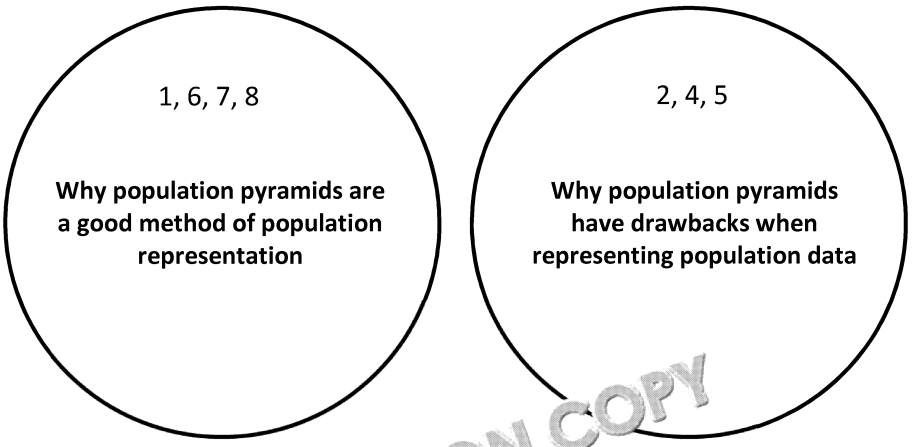
Population change & demographics in the UK answers

Task 1

1.

Trends	
Category with the smallest percentage of the popula	*Males, 100+*
Category(s) with the largest percentage of h p ation:	Females, 50–54 and
Largest age group among mal	45–49
Largest age group a h re ales:	50–54
How r op , overall, in the 0–4 age category:	3.9 million (accept 4
Categor osest to one million people:	Males, 75–79

2.



Note: opinion 3 can b e ither, both or neither – it is not necessarily a positi

Task 2

1. The UK's population fluctuated a little but, in general, it increased between 1961 and pick data from the graph. It can be anything relevant which shows the trends of the 1973 and 1979 at 56,000,000. The most rapid increase was between 2000 and 2015, 59,000,000 to just under 64,000,000.
2. Decrease in death rate as medical technology improves, as does quality of life. Birth this cannot be told from the graph. Migration may cause an increase if the net migra immigration is larger than emigration.

Task 3

1. The UK has a mix of different ethnicities within its population, also referred to as eth good thing as it brings together multiple identities and **cultures**, which helps pave th new socio-economic **opportunities**. However, in some areas this may lead to social as social **conflicts**, discrimination and racism. Differen s across the UK have diff diverse areas tend to be **urban** areas, such as **Lo don** and **Birmingham**. The least di such as **Cornwall** and **Devon**.

Migration in the UK

	Description
Task 1	The UK's ethnic diversity
Task 2	Migration and the UK

In this lesson you will:

- ✓ learn about the UK's demograph
- ✓ learn about UK migrati d examine the pros and cons of migration throu

Task 1

1. Why do you think the UK has such a wide demographic diversity? Create a m
(Remember, demographics is not limited to ethnicity; it also includes factors
backgrounds, religions, sexualities, age groups and cultures.)

Task 2

Migration is the umbrella term given to the movement of people. Immigration is the movement of people into a country, or place that is not their country or place name specifically given to the movement of people out of their country or place o various different reasons. Some move to find a new job so they can earn money t called economic migrants. Other people may be in fear for their lives due to a wa persecution in their home country; people who flee from these reasons may becom country. Once their asylum status is recognised and made legal in the country the known as refugees.

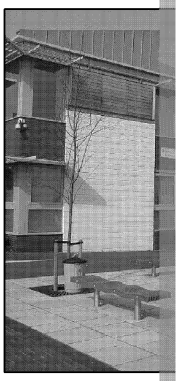
1. Give some examples of why people may either emigrate from the UK, or imm think about different factors, such as political, social, economic and environm

	**Political reasons**	**Social reasons**	**Economic re**
Why people immigrate to the UK (Remember, this is why people **move to** the UK)			
Why people emigrate from the UK (Remember, this is why people leave the UK)			

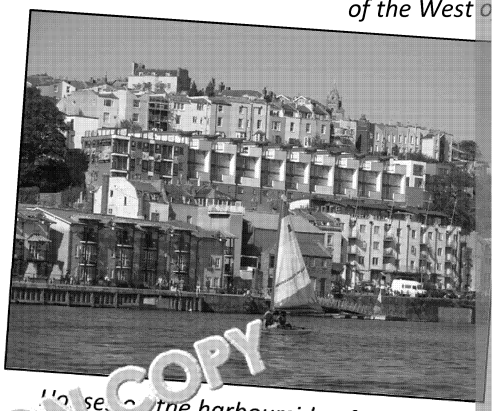
Migration Case Study: Bristol

Bristol is a city in the west of the UK. It has a population of 428,100 (as per the 2C
the 2011 census, 14.7% of people who live in Bristol are immigrants who were no
previously 8.2% in 2001). Study the photos below, and then answer the question

The Wills Memorial Building, part of the University of Bristol

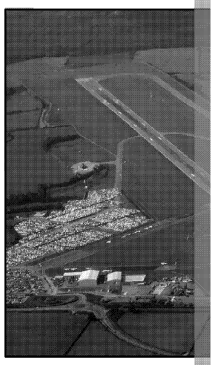


Frenchay Can of the West o



Ho se o tne harbourside of Bristol

Bristol Temple Meads train station



Br

Cabot Circus, a large shopping mall in the centre of Bris

2. Using the photos, explain why people immigrating to the UK may be attracte

Migration in the UK answers

Task 1

1. Includes reference to multiple factors of demographics, links to the UK's historical pa
Commonwealth), reference to the UK being politically stable and 'free' (i.e. people a
religion, culture, sexuality, gender, etc.).

Task 2

1. **Immigrate:**
   - **Political** – peop[illegible] their home country due to political instability, arm
per[illegible]ion [illegible]s politically stable and a 'safe' destination.
   - **So**[illegible]e UK has social and cultural hubs; people may move to be closer to fa
mo[illegible], or to improve their English language skills.
   - **Economic** – work/job; set up or expand business.
   - **Environmental** – people may wish to travel around the UK to see its natural lan
from natural disasters / risk of sea level rise and other climate-change-related e
safe from natural disasters (although flooding is an issue).

   Emigrate:
   - **Political** – people living in the UK under the EU freedom of movement legislatio
countries / elsewhere due to the uncertainty that Brexit is causing the UK.
   - **Social** – people may wish to move abroad to learn a new language, travel, meet
different cultures.
   - **Economic** – work/job opportunities.
   - **Environmental** – some people leave the UK to go to countries with warmer clim
rainfall; others move to live in different geological/topographical regions (mour

2.
   - The two universities provide higher educati[illegible], attra[illegible]s international students.
   - Good transport links to the rest of th[illegible]/in[illegible]national airports (Temple Meads
easily travel around the UK [illegible]fa[illegible]y in their home country.
   - Good social life (sh[illegible]g[illegible]ciety of housing, waterside locations are visually at
   - Econo[illegible]ic o[illegible]ties, e.g. jobs/work in places such as Cabot Circus.

What are natural resources? (II)

	Description
Task 1	Introduction to energy
Task 2	Introduction to water

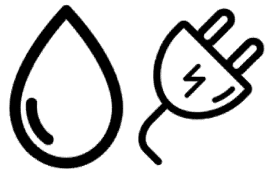
In this lesson you will:

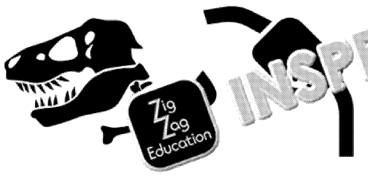
- ✓ be introduced to energy security
- ✓ be introduced to water security

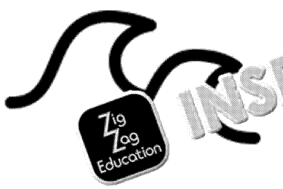
Task 1

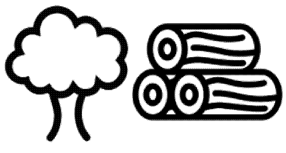
We use energy in all aspects of everyday life. In geography, when we talk about e
to either renewable or non-renewable sources of energy that can be used in manu
electricity production. A non-renewable energy source means that resources of th
they will run out and we will not be able to replenish stocks naturally in a viable ti
renewable energy source is a resource that can naturally replenish in a viable time

1. From the pictures below, decide what energy source each picture represents

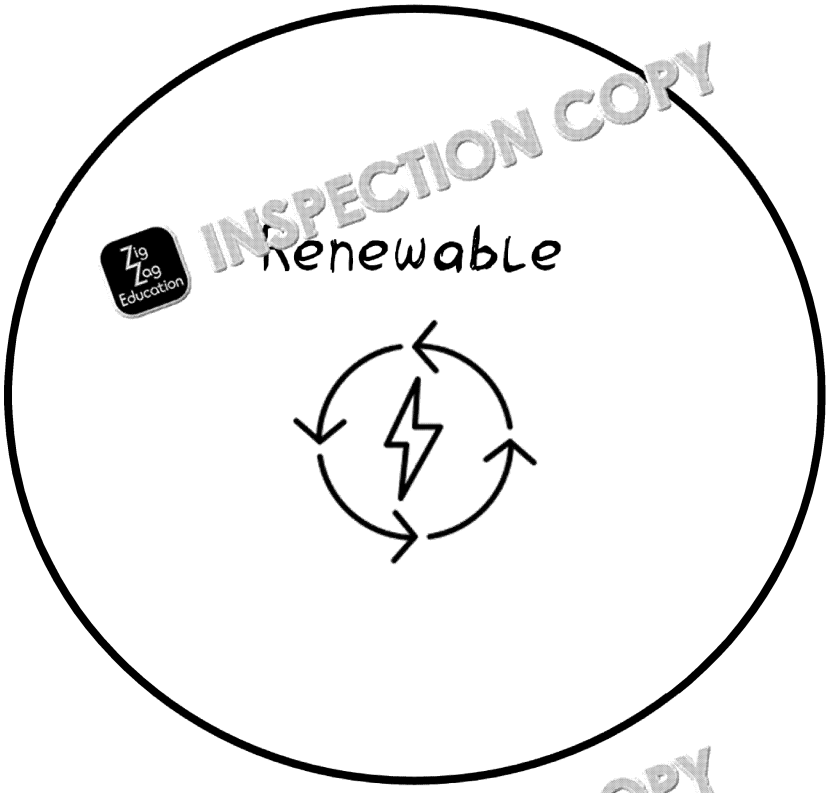


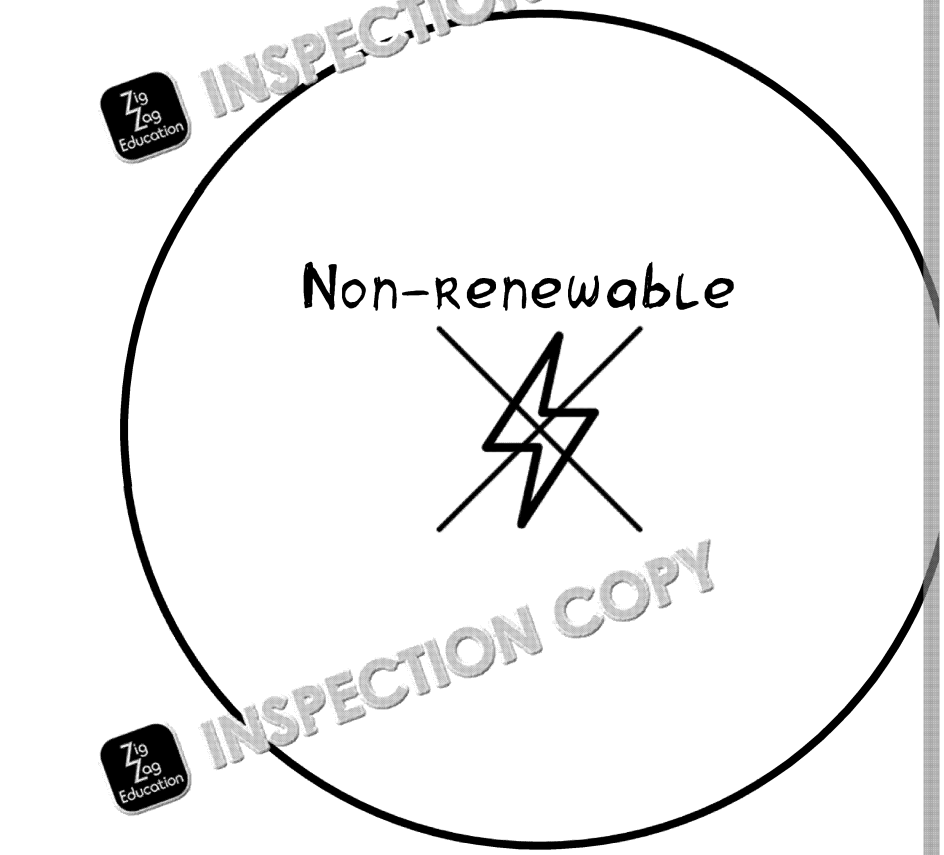






2. Sort the following energy sources into either ‘renewable’ or ‘non-renewable’





Nuclear power as an alternative energy source to fossil fuels is a highly debated to
is not a completely renewable resource as the world has finite resources of uraniu
production of nuclear power. Others argue that nuclear power has far fewer adve
the environment and that research and development of plutonium as a viable opt
fact, offer a more renewable source of energy. There are other issues with nuclea
waste, the need for more power stations to be built and risk of catastrophic disast

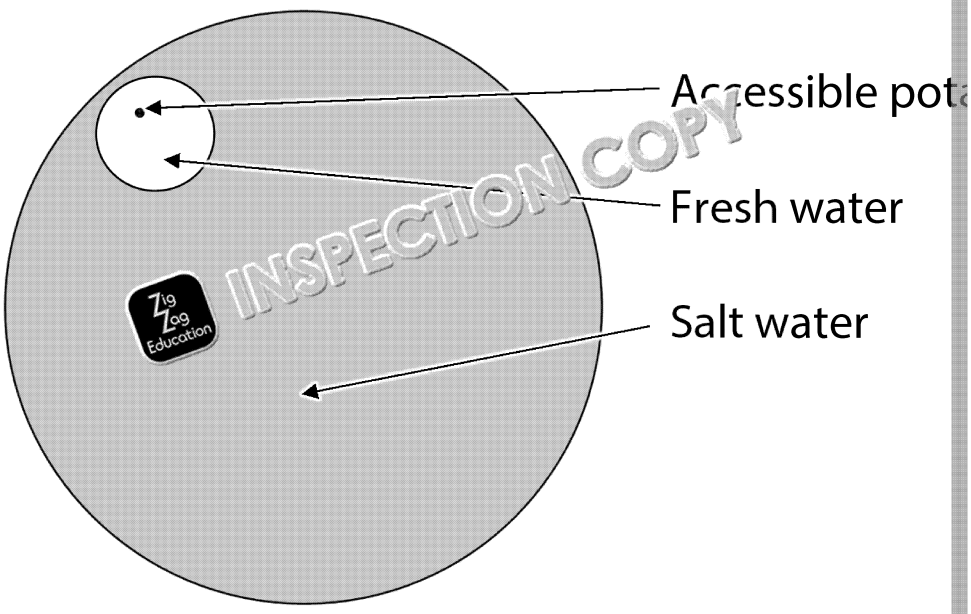
3. Spend a few minutes thinking about whether or not nuclear power is a viable
energy source.

You may wish to consider the following:

- Do you think it is renewable?
- What is the issue with radioactive waste?
- Do you think it is better than fossil fuels?
- Do you think it is likely that something will go wrong?

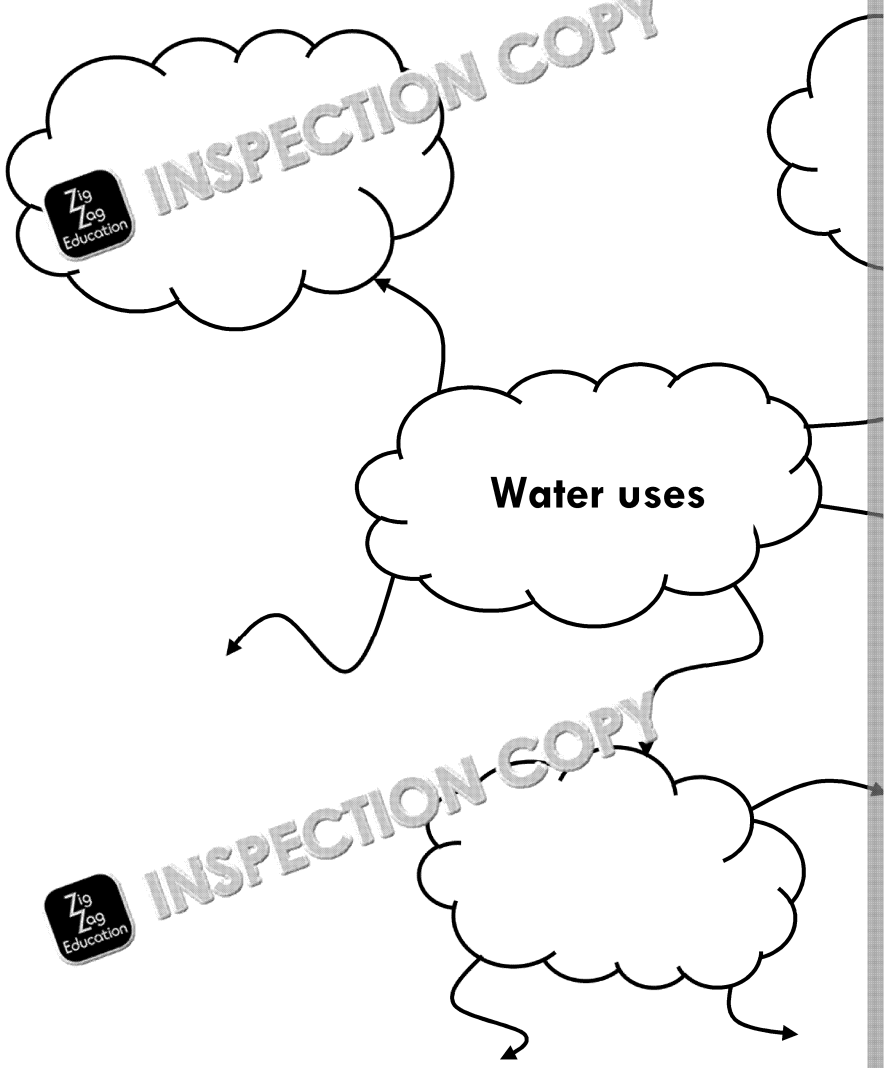
Task 2

Water is another important resource that humans could not live without. While it is
abundance of water due to the fact we are surrounded by oceans, this is not true be
in its natural form. Potable water (water you can drink) makes up a tiny percentage



The diagram above represents all of the world's water. As you can see, the major
in seas, oceans and saltwater lakes). The medium bubble represents fresh water (
freshwater lakes and reservoirs). However, only a tiny fraction of fresh water is a
human consumption.

1. Humans needs water not just for drinking for but all sorts of reasons in life. Thin
you can that humans may consume or use water (directly and indirectly) and wri



2. Water wastage is a huge issue, especially when some areas are in water scar
people can save water, and design a poster to encourage people to reduce w

What are natural resources? (II) answers

Task 1

1.
- Hydroelectric
- Fossil fuels
- Solar
- Geothermal
- Wave power
- Biomass

2.
- **Renewable** – [illegible] wave power, solar, hydroelectric, biomass (when ach
- **N[illegible]w[illegible]e** – fossils fuels, natural oil, natural gas, coal

3. Answers do not have to be written down, but students should have considered pros
should come to a justified conclusion.

Task 2

1. Includes: irrigation for crops / to water livestock, household consumption (flushing t
watering gardens, cooking, cleaning), industrial coolers, manufacturing goods/food.

2. Measures include, but are not limited to: reducing household consumption by reduc
bathwater, recycling 'grey water' for watering gardens/plants, reducing water waste
produced foods, fruit and vegetables in season, opening windows instead of relying