



Here is your GCSE Geography saviour! Read it, breathe it, discuss it, keep it safe, make it yours... and above all, USE IT!

Name: \_\_\_\_\_

# **Revision Booklet**

# **GCSE Geography**

AQA 8035

## Paper 1- Living with the physical environment

### Section A: The challenge of natural hazards

#### Natural hazards

Key idea: Natural hazards pose major risks to people and property.

1. **Define** 'natural hazard' and give examples.

**Command words, p.6**

---



---



---



---

2. Add the events to the table below. **Events:** *earthquake, volcanic eruption, tsunami, tropical storm, hurricane/typhoon/cyclone, climate change*

Event	Meaning
	Lava erupts from a vent in the earth's crust. This occurs at destructive and constructive plate boundaries.
	Changes to the earth's atmospheric patterns, especially rainfall and temperature. These changes vary region to region, but in many places they involve increases in temperature.
	Different names are given to tropical storms depending on where they occur.
	Shaking of the ground due to tectonic movement. This occurs at all plate boundary types.
	A series of fast moving, long and high waves resulting from tectonic movement under the ocean floor.
	A powerful storm that moves at more than 74 miles per hour. They form over water and spin in an anticlockwise direction, gathering power as they move over water & losing power when they reach land.

3. Complete the paragraph about hazard risk by filling in the gaps with the provided vocabulary. **Vocabulary:** *equipped, earthquakes, probability, density, magnitude, nature, defences, flooding, rebuild, greater, human, frequently, cope, severe.*

Hazard risk is the \_\_\_\_\_ that a natural hazard occurs. To count as a hazard, the event has to affect \_\_\_\_\_ activities. Several factors influence hazard risk. One is vulnerability. The denser the population is in an area exposed to natural hazards, the greater the risk that they will be affected by a natural hazard. For example, an area with a high population \_\_\_\_\_ along a very active plate boundary (e.g. San Francisco) is especially vulnerable to earthquakes, and a densely populated floodplain (e.g. Bangladesh) is especially vulnerable to \_\_\_\_\_ caused by extreme weather. Another factor is capacity to \_\_\_\_\_. The better a population can cope with an extreme event, the lower the impact will be. For example, HICs are often better \_\_\_\_\_ than LICs to deal with the impacts of natural hazards such as flooding or volcanic eruptions., because they are more able to build \_\_\_\_\_, evacuate people, provide swift medical assistance and \_\_\_\_\_ quickly. Another factor is that the \_\_\_\_\_ of natural hazards varies considerably. Some hazards can be **predicted** (e.g. tropical storms) giving people and governments time to prepare and evacuate, while others cannot be predicted and happen suddenly (e.g. \_\_\_\_\_) meaning that people are caught unaware. Some hazards occur more \_\_\_\_\_ than others, increasing hazard risk. Some hazards are more \_\_\_\_\_ than others, e.g. an earthquake of 9.2 on the Richter scale will have a far \_\_\_\_\_ hazard risk than one that registers in at 4.6. To summarise, some key factors affecting hazard risk are: vulnerability, population density, capacity to cope, level of preparation, hazard type, hazard frequency, and \_\_\_\_\_.

4. Would hazard risk be greatest for A or B? In the final column, give reasons for your choice. An example has been done for you.

Question	A	B	Risk would be greatest in... (A or B)	Reasons
Where will <b>economic</b> cost be greatest?	<i>Volcanic eruption in a rural area</i>	<i>Volcanic eruption in an urban area</i>	B	Urban areas have more buildings and businesses so insurance and reconstruction costs would be higher. Replacement of belongings is costly for individuals.
Where will <b>economic</b> cost be greatest?	<i>Earthquake in an urban area in a HIC</i>	<i>Earthquake in an urban area in a LIC</i>		
Where will <b>human</b> cost be greatest?	<i>A tsunami strikes a densely populated coastline</i>	<i>A tsunami strikes a sparsely populated coastline</i>		
Where will <b>human</b> cost be greatest?	<i>Rising sea levels- mountainous region</i>	<i>Rising sea levels- small Pacific islands</i>		

**Tectonic hazards**

Key idea: Earthquakes and volcanic eruptions are the result of physical processes.

5. The theory of plate tectonics is that...

---



---



---



---

6. Look at the map. The black lines show plate margins. In one sentence, say what a plate margin is.

---



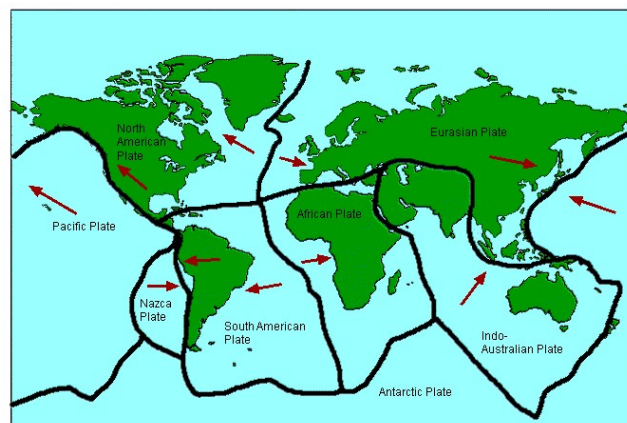
---



---



---



7. Why do most earthquakes and volcanoes occur near plate margins? In your answer, try to use geographical terms such as: *convection currents, tectonic plates, plate boundaries, collision, energy, etc.*

---



---



---



---

8. Where do more tectonic hazards occur? Circle the correct answers.
- On or near plate margins / far from plate margins
  - Near the Pacific Ring of Fire / far from the Pacific Ring of Fire
  - Near coastal areas / inland areas
  - The western coastline of North and South America / the eastern coastline of North and South America
  - Southern Africa / south and eastern Asia
9. There are three main types of plate margin (destructive, constructive and conservative). For each plate margin type:
- Draw a diagram showing how the plates move (Towards each other? Apart? Alongside each other?)
  - Write a sentence describing what happens
  - Indicate whether earthquakes and/or volcanic eruptions occur as a result
  - Give an example (use the map above to help you) e.g. *'where the South American and Nazca plates meet'*

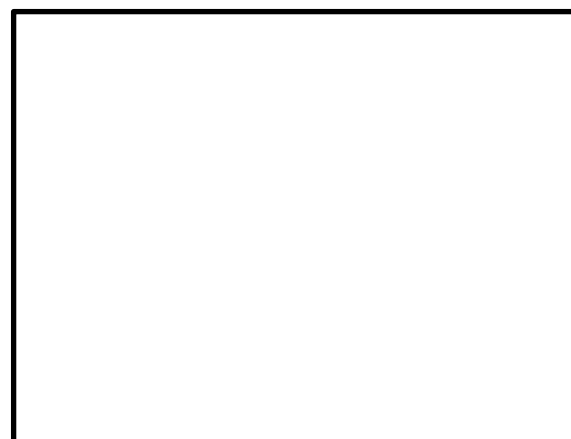
#### Destructive plate margin

- The plates move together / apart / alongside each other
- At a destructive plate margin, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- Earthquakes occur here / volcanoes occur here / earthquakes and volcanoes occur here
- Example: \_\_\_\_\_



#### Constructive plate margin

- The plates move together / apart / alongside each other
- At a constructive plate margin, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- Earthquakes occur here / volcanoes occur here / earthquakes and volcanoes occur here
- Example: \_\_\_\_\_



#### Conservative plate margin

- The plates move together / apart / alongside each other
- At a conservative plate margin, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- Earthquakes occur here / volcanoes occur here / earthquakes and volcanoes occur here
- Example: \_\_\_\_\_



Key idea: The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.

10. Below some **effects** of and **responses** to tectonic hazards are listed. Code each one as either **PE** (primary effect), **SE** (secondary effect), **IR** (immediate response) or **LR** (long-term response).

buildings collapse	economic growth slows
water pipes burst	people moved permanently from the area
disease spreads	homelessness
evacuation	people die of cold and exposure
communication links destroyed	landslides
building regulations improved	new jobs in the construction industry
volunteers arrive to search for survivors	tents given out by charities
fires spread due to gas pipes bursting	schools and hospitals rebuilt
people are injured or killed	people live in refugee camps
income is lost	shops and businesses ruined
investment in the area is focussed on rebuilding	gas pipes burst
search and rescue teams deployed	rioting
evacuation services	farmland, crops and livestock destroyed
medical tents set up	water sources contaminated
money is donated to purchase medicines and other supplies	the government has to borrow money for reconstruction
homes are rebuilt at huge expense	sites of religious and cultural importance are lost
trade is made more difficult	water is contaminated

11. The effects of tectonic hazards are often worse in places that have low incomes. Select one effect from the list above, and create a flow chart in the space below to show why the effects may be more devastating in a LIC than a HIC.

The specification says that you need to 'Use named examples to show how the effects and responses to a tectonic hazard vary between **two areas of contrasting levels of wealth.**'

Named examples alert!

12. To help you do this, complete the table below. Try to **include place-specific details** (e.g. place names) and **facts and figures** (e.g. number of destroyed houses and lives lost).

	<b>HIC named example</b> Earthquake or volcano? _____ Place? _____ Year? _____	<b>LIC named example</b> Earthquake or volcano? _____ Place? _____ Year? _____
<b>Primary effects</b>		
<b>Secondary effects</b>		
<b>Immediate responses</b>		
<b>Long-term responses</b>		

**Tip:** you need to be able to **assess** which effects were most/least severe and which responses were most/least effective. Develop a **coding system** in the space below and label the information in your table above.

**Command words, p.6**







19. Below is a jumbled list of the events that occur in order for a tropical storm to form. In the box, draw the formation of a tropical storm, and **copy and number the events onto the diagram to show that you know the correct order.**

Jumbled sequence of events: trade winds/westerlies merge smaller clouds / cool air sinks downwards causing vapour in the warm air to condense / as the cloud moves over warm waters more condensation occurs increasing the cloud's size and intensity / cloud forms / if the storm reaches 74mph+ it is classed as a tropical storm / trade winds/westerlies spin the large cloud anticlockwise / oceans with temperatures of 26.5C+ cause mass evaporation

**Labelled diagram: formation of a tropical storm**

20. The paragraph below is about the structure and features of tropical storms. Using the vocabulary provided, fill in the blank spaces. **Vocabulary**: *descending, winds, circular, less, speed, clockwise, high, smaller, eye, eyewall, rain, anticlockwise, increases, hundreds, 7-14, 50km, rain, low*

Tropical storms are \_\_\_\_\_ in shape, \_\_\_\_\_ of kilometres wide and usually last \_\_\_\_\_ days. They spin \_\_\_\_\_ in the southern hemisphere and \_\_\_\_\_ in the northern hemisphere. The centre of the storm is called the \_\_\_\_\_. It is up to \_\_\_\_\_ across and is caused by \_\_\_\_\_ air. In the eye there is very \_\_\_\_\_ pressure, light winds, no clouds, no \_\_\_\_\_ and a \_\_\_\_\_ temperature. The eye is surrounded by the \_\_\_\_\_. Here there is spiralling rising air, very strong \_\_\_\_\_ (around 100 miles per hour), storm clouds, torrential \_\_\_\_\_ and a low temperature. Towards the edges of the storm the wind \_\_\_\_\_ falls, the clouds become \_\_\_\_\_ and more scattered, the rain becomes \_\_\_\_\_ intense and the temperature \_\_\_\_\_.

21. On the aerial image of a tropical storm, label:

- the eye
- eyewall
- edge of the storm
- fastest winds
- torrential rain



22. Many experts are worried that climate change will increase the **intensity, frequency** and **distribution** of tropical storms. **Suggest** and **explain** reasons why they are concerned.

**Command words, pages 7 and 9**

One reason why the **intensity** of TS's may increase: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

One reason why the **frequency** of TS's may increase: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

One reason why the **distribution** of TS's may increase: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Key idea: Tropical storms have significant effects on people and the environment.

The specification says that you need to '*Use a **named example of a tropical storm** to show its effects and responses.*'



23. Based on your learning of a named example of a tropical storm, complete the table below. Try to **include place-specific details** (e.g. place names) and **facts and figures** (e.g. number of destroyed houses and lives lost).

NAMED EXAMPLE OF A TROPICAL STORM			
Place? _____		Year? _____	
EFFECTS		RESPONSES	
PRIMARY	SECONDARY	IMMEDIATE	LONG-TERM

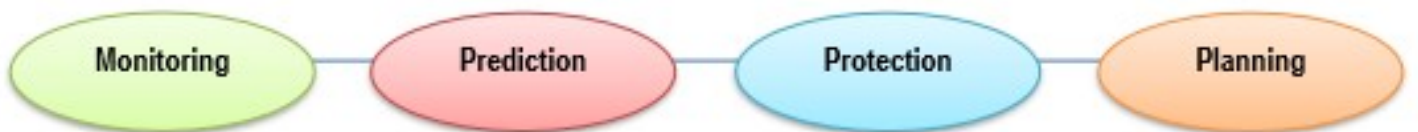

24. You need to be able to **assess** which effects were most/least severe and how effective the responses were for your named example.

The **most severe effects** of the tropical storm were the **primary / secondary** effects, because \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The **most effective response** to the tropical storm was: \_\_\_\_\_, because \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The **least effective response** to the tropical storm was: \_\_\_\_\_, because \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25. **Annotate** each bubble below with examples and say how they can help to reduce the effects of tropical storms. For example, for 'Protection', you could write '*Afforestation absorbs much of the storm's energy when it hits the coastline, reducing the impact on protecting people, property and the environment further inland*'. You should have at least two examples for each bubble.



Key idea: The UK is affected by a number of weather hazards.

26. The UK experiences a wide range of weather hazards, which can have serious effects. Link the hazards to the effects using neat lines.

Thunderstorms

Rain

Snow and ice

Hailstorms

Wind

Drought

Heatwaves

Heavy rain, lightning and strong winds; lightning can cause deaths and fires, which ruin property.

Water supplies may run low, leading to crop failure. Rules may be imposed to conserve water, e.g. hosepipe bans.

Too much of this in a short time can cause flooding, which puts people, property, businesses and the environment at risk. It can disrupt transport networks, destroy communication lines, cause drownings, and may cost millions of pounds to recover.

May cause injuries from slipping or deaths due to cold. Schools and businesses may be forced to close, and crops may be ruined.

This can damage crops, damage property and make driving very dangerous.

Can cause deaths from breathing difficulties or heat exhaustion. Roads can melt which disrupts transport, but tourism may benefit.

This may uproot trees and destroy property e.g. ripping off roofs. Flying debris can kill. Forests may be damaged when trees are blown over.

Key idea: Extreme weather events in the UK have impacts on human activity.

The specification says that you need to know '**An example of a recent extreme weather event in the UK: causes; social, economic and environmental impacts; and how management strategies can reduce risk**'.

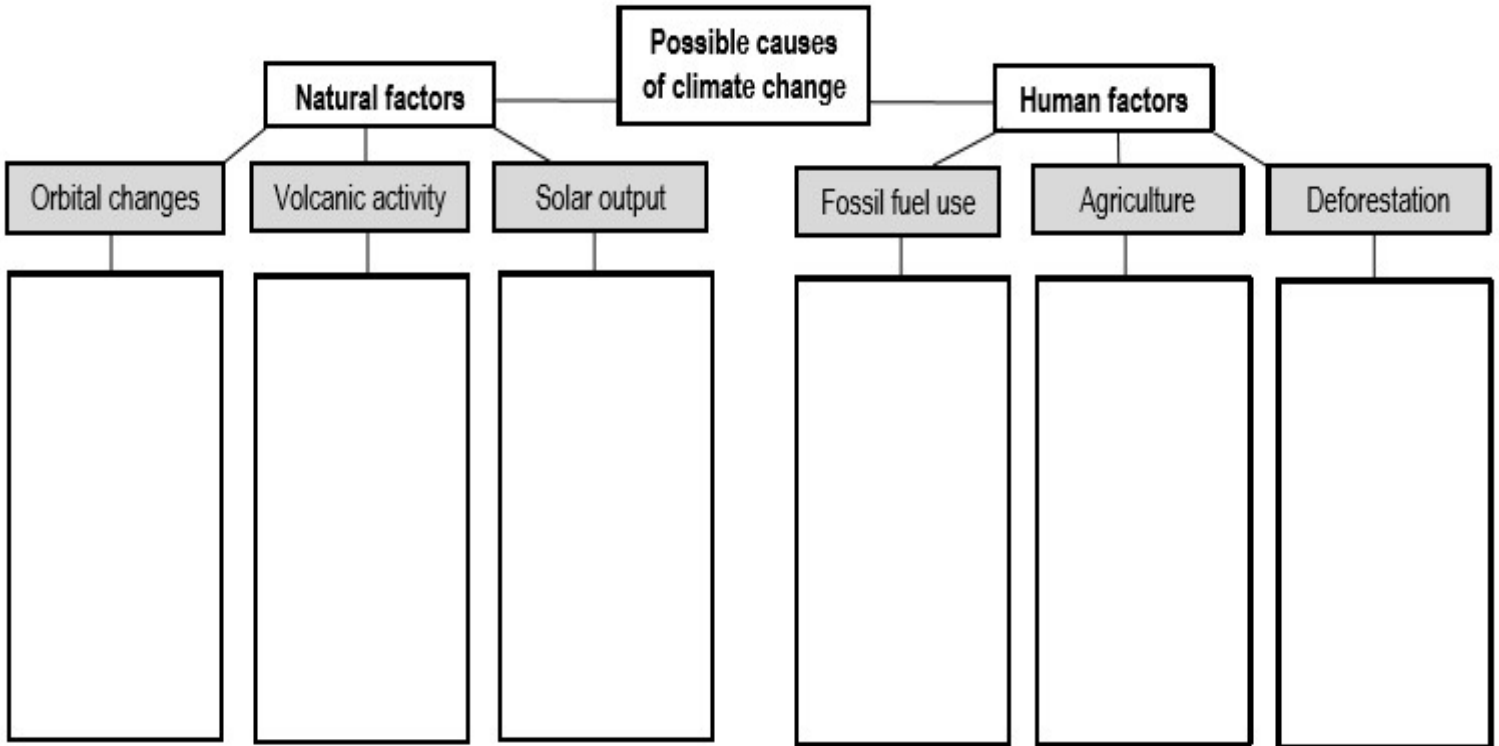


27. Using the information that you have learned in lesson as well as your own research, complete the table below with facts and figures.

EXAMPLE OF A RECENT EXTREME WEATHER EVENT IN THE UK		
Weather event type? _____ Place? _____ When? _____		
CAUSES	IMPACTS	MANAGEMENT
	Social	Which management strategies were used (before, during and/or after)?
	Economic	Did they reduce risk? If so, how? If not, why not?
	Environmental	



32. The figure below shows some of the **possible causes of climate change**. Underneath each factor, briefly **explain** how it is thought to cause climate change.



33. Outline the **effects** of climate change on **people** and the **environment**. You may wish to write a paragraph for each, or create a brainstorm. Try to refer to specific places in your answer.

*Command words, p.8*

Key idea: Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change).

**Mitigation** and **adaptation** help to manage climate change.

34. **Mitigation** means reducing the causes (of climate change). There are lots of ways that climate change can be **mitigated**. The table below shows four mitigation strategies. You need to fill in the gaps so that each strategy is **described** (say what it is) and **explained** (say how it reduces the causes of climate change).

STRATEGIES TO REDUCE THE CAUSES OF (MITIGATE) CLIMATE CHANGE				
	ALTERNATIVE ENERGY PRODUCTION	CARBON CAPTURE	PLANTING TREES	INTERNATIONAL AGREEMENTS
DESCRIBE THE STRATEGY	<i>This means producing energy from sources that are not fossil fuels. For example, wind, solar and wave energy are all renewable energy sources that provides alternatives to the 'dirty' fuels of coal, oil and gas.</i>		<i>Planting trees can take place on a small or large scale. Individuals can plant extra trees around their home, local organisations can organise volunteers to plant trees in the local area, and governments can pay councils to mass-plant across the country.</i>	<i>International agreements such as the Kyoto Protocol and the Paris Agreement encourage governments to set carbon emissions targets, to increase their alternative energy production, and to reduce their greenhouse gas emissions.</i>
EXPLAIN HOW IT REDUCES THE CAUSES OF CLIMATE CHANGE		<i>Capturing carbon reduces the amount of carbon in the atmosphere. Carbon thickens the atmosphere and traps the sun's radiation, so reducing the amount of carbon in the atmosphere will reduce the amount of heat that becomes trapped, thereby reducing one of the key causes of climate change.</i>		

### 35. **MINI ISSUE EVALUATION TASK**

There are many **adaption** strategies to help us manage climate change and reduce risk. To help you revise this topic and also to practice the **ISSUE EVALUATION** component of Paper 3, you need to decide which strategy you think should be prioritised. On the lines below, say which strategy should be prioritised and how it helps to manage climate change.

**Options: 1- Changing agricultural systems, 2- Managing water supply, 3- Reducing risk from rising sea levels**

Chosen option: \_\_\_\_\_

---



---



---



---



---



---



---



---



---



---

## Section B: The living world

- In this section, you **MUST** study **Ecosystems** and **Tropical Rainforests**
- You will also study either **Hot deserts** **OR** **Cold Environments**
- **Which optional topic do I study?** \_\_\_\_\_
- Go down and put a line through the topic that you do NOT study!

### Ecosystems

Key idea: Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components.

1. Read the paragraphs below to help you revise ecosystems. Highlight or underline key terms and important information.

An **ecosystem** is a unit that includes all the **biotic** (living) parts (e.g. plants and animals) and the **abiotic** (non-living) parts (e.g. soil and climate) in an area. The organisms in an ecosystem can be classed as **producers**, **consumers** or **decomposers**.

A **producer** is an organism that uses sunlight energy to produce food (e.g. a banana tree). A **consumer** is an organism that gets its energy by eating other organisms (e.g. a monkey eats a banana). A **decomposer** is an organism that gets its energy from breaking down dead material, including dead producers, dead consumers or fallen leaves (e.g. bacteria and fungi break down dead monkeys or banana peels).

When dead material is decomposed, **nutrients** are released into the soil. The nutrients are then taken up from the soil into plants. The plants may be eaten by consumers. When the plants or consumers die, the nutrients return to the soil. This transfer of nutrients is called **nutrient cycling**.

2. Draw a food chain or food web in the space provided. Label each component as either **producer**, **consumer** or **decomposer**.

3. Using the information above and your own knowledge, explain how changing one component can impact an ecosystem. Try to include some of the **bolded terminology above** and some examples.

Which key terms should you highlight in this question?

---



---



---



---



---



---









The specification says that you need to know '**An example of a small scale UK ecosystem** to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling.'

Named example alert!

4. Complete the template below to help you learn and revise your example of a small scale UK ecosystem.

<b>AN EXAMPLE OF A SMALL SCALE UK ECOSYSTEM</b> My example: _____	
<b>What is the ecosystem like?</b> (Abiotic characteristics such as climate and soils, biotic features such as plant and animal types, location etc.)	<b>Diagram or picture of the ecosystem</b>
<b>What are some of the producers, consumers and decomposers in the ecosystem?</b>	<b>Explain how nutrient cycling takes place in the ecosystem.</b>
<b>Diagram of a food chain or food web in the ecosystem</b>	<b>Explain how changes to one component impacts the ecosystem.</b>

5. For each of the **major global ecosystems** below, complete summary notes in the empty boxes.

ECOSYSTEM	IMAGE	LOCATION/S	BIOTIC FEATURES	ABIOTIC FEATURES
Grassland				
Hot desert				
Temperate deciduous forest				
Tropical rainforest				
Tundra				
Polar				

### Tropical rainforests

Key idea: Tropical rainforest ecosystems have a range of distinctive characteristics.

6. Create a brainstorm to show the **physical characteristics of a tropical rainforest**. You should refer to features such as the layers of TRFs, the climate (precipitation and temperature), locations around the world etc.

7. Explain how in tropical rainforest ecosystems, climate, water, soils, plants, animals and people are **interdependent**.

---

---

---

---

---

---

---

---

---

---

8. Plants and animals adapt to the physical conditions of tropical rainforests. **Identify one plant and one animal** below, and **describe** how each has adapted to live in the ecosystem.

Chosen plant: \_\_\_\_\_

---

---

---

---

Chosen animal: \_\_\_\_\_

---

---

---

---

9. Define 'biodiversity'.

---

---

10. Explain how **human activities** have **reduced biodiversity** in tropical rainforests.



---

---

---

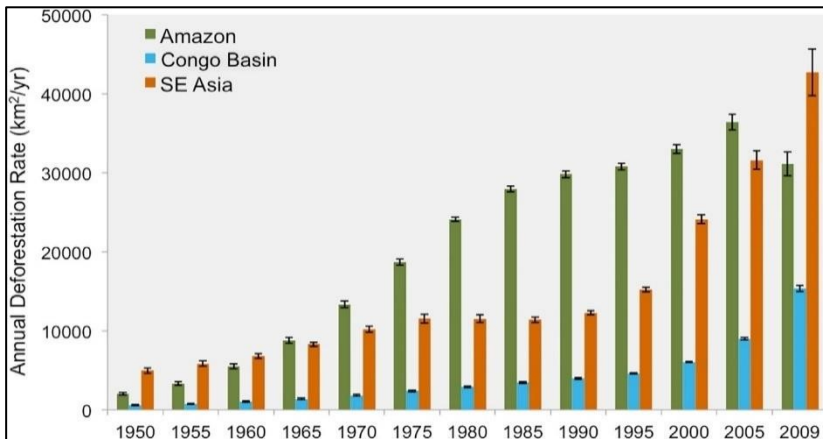
---

---

---

---

Key idea: Deforestation has economic and environmental impacts.



11. Describe the general pattern of deforestation rates between 1950-2009.

---

---

---

---

---

---

---

12. Compare rates of deforestation in the three regions shown.

---

---

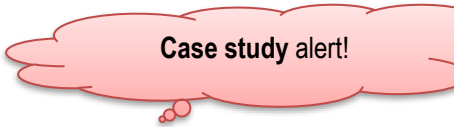
---

---

---

---

---



The specification says that you need to know 'A case study of a tropical rainforest' to illustrate the causes and impacts of deforestation.

13. Add detail into each of the boxes below to help you revise your case study. Include data and reference to stakeholders.

A CASE STUDY OF DEFORESTATION IN A TROPICAL RAINFOREST			
My case study: _____			
<b>CAUSES OF DEFORESTATION</b>	Subsistence and commercial farming	<b>IMPACTS OF DEFORESTATION</b>	Economic development
	Logging		
	Road building		Soil erosion
	Mineral extraction		
	Energy development		Contribution to climate change
	Settlement		
	Population growth		Local livelihoods destroyed (e.g. rubber tapping)

Which of these **causes** and **impacts** do you consider to be the **most significant**? Highlight them in your table and think about WHY you consider them to be the most significant. **You may be asked to assess/evaluate this in the exam.**



Key idea: Tropical rainforests need to be managed to be sustainable.

14. Why do tropical rainforests need to be **managed**? Your answer should outline their **importance** to people and the environment.

---



---



---



---



---



---









---



---

15. **MINI ISSUE EVALUATION TASK**

15a. There are many strategies to **manage** the rainforest sustainably. To help you revise this topic and also to practice the ISSUE EVALUATION component of Paper 3, you need to decide which strategy you think should be prioritised. In each box below, describe each strategy, then summarise key advantages and disadvantages.

STRATEGIES	IMAGE	BRIEF DESCRIPTION	ADVANTAGES	DISADVANTAGES
Selective logging				
Replanting				
Conservation and education				
Ecotourism				
International hardwood agreements				
Debt reduction				

15b. Now that you know the advantages and disadvantages of a range of rainforest management strategies, select **one** strategy and **justify why it is the best option** to manage the rainforest sustainably.

**Command words, p. 8**

Chosen option: \_\_\_\_\_

*This is the best option to manage the rainforest because...* \_\_\_\_\_

---

---

---

---

---

---

---

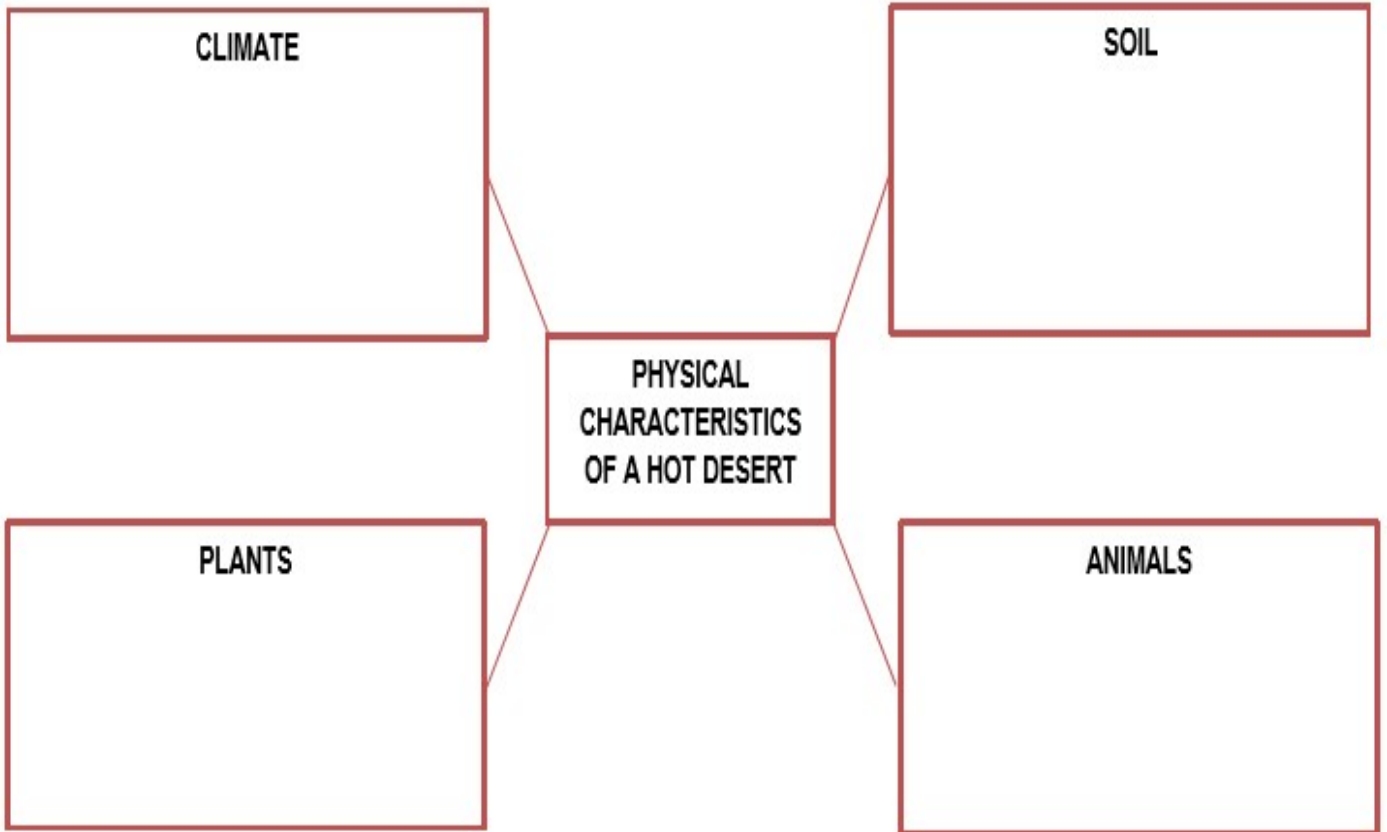
---

**REMEMBER-** You study **EITHER** Hot deserts **OR** Cold Environments!

**Hot deserts**

Key idea: Hot desert ecosystems have a range of distinctive characteristics.

16. Complete the brainstorm below on the physical characteristics of a hot desert by adding brief notes to each box.







Key idea: Development of hot desert environments creates opportunities and challenges.

**Case study alert!**

The specification says that you need to know '**A case study of a hot desert**' to illustrate development opportunities and the challenges of developing in hot deserts.

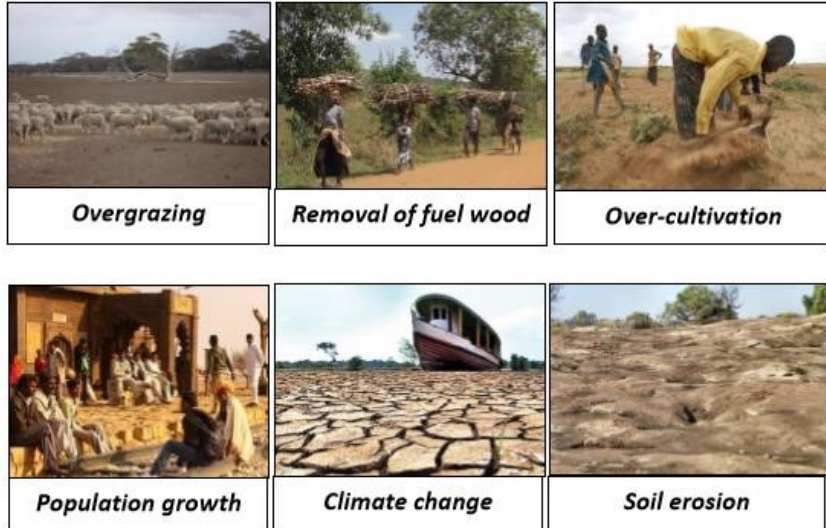
'Development opportunities' refers to the options that exist to improve income and quality of life. 'Challenges of developing' refers to the difficulties that are encountered in trying to develop.

20. Complete the template below to help you learn and revise your case study of a hot desert.

A CASE STUDY OF A HOT DESERT			
My case study: _____			
<b>DEVELOPMENT OPPORTUNITIES IN A HOT DESERT</b>	Tourism	<b>LOCATION</b>	Draw or stick in a map showing the location of your chosen hot desert.
	Energy		
<b>DEVELOPMENT OPPORTUNITIES IN A HOT DESERT</b>	Farming	<b>CHALLENGES OF DEVELOPING IN A HOT DESERT</b>	<p>Explain how the following challenges make development difficult. Link the challenges to the opportunities you've already mentioned.</p> <ul style="list-style-type: none"> <li>• Extreme temperatures</li> <li>• Water supply</li> <li>• Inaccessibility</li> </ul>
	Mineral extraction		

Key idea: Areas on the fringe of hot deserts are at risk of desertification.

21. **Annotate** each box with 1-2 sentences explaining how each factor causes desertification.



22. **MINI ISSUE EVALUATION TASK**

There are several strategies to **reduce the risk of desertification**. To help you to practice skills needed for the ISSUE EVALUATION component of Paper 3, complete the sentences below.

**Water management** involves): \_\_\_\_\_

It helps to reduce the risk of desertification by... \_\_\_\_\_

Its disadvantages/difficulties are... \_\_\_\_\_

**Soil management** involves): \_\_\_\_\_

It helps to reduce the risk of desertification by... \_\_\_\_\_

Its disadvantages/difficulties are... \_\_\_\_\_

**Tree planting** helps to reduce the risk of desertification by... \_\_\_\_\_

Its disadvantages/difficulties are... \_\_\_\_\_

**Use of appropriate technologies** is where... \_\_\_\_\_

It helps to reduce the risk of desertification by... \_\_\_\_\_

Its disadvantages/difficulties are... \_\_\_\_\_

**Cold environments**

Key idea: Cold environments (polar and tundra) have a range of distinctive characteristics.

16. Label the images below with the physical characteristics of tundra and polar environments.



*Tundra environment*



*Polar environment*

17. **EXAM-STYLE QUESTION:** Using **Figure 1**, describe the climate of this environment. (3)

---

---

---

---

---

---

---

---

---

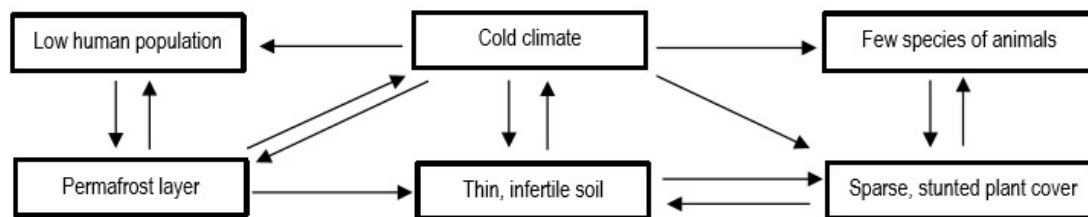
---

---

---

Figure 1- climate of a tundra		
MONTH	AVERAGE TEMPERATURE (°C)	AVERAGE RAINFALL (mm)
Jan	-9	65
Feb	-8	59
Mar	-6	71
Apr	-2	57
May	3	81
Jun	7	78
Jul	9	74
Aug	8	84
Sept	4	158
Oct	2	143
Nov	-5	119
Dec	-7	82

18. Using the figure below and your own knowledge, describe how the climate can affect the number of animal species in a cold environment.




---

---

---

---

---

---

---

---

19. Complete the gaps in the paragraph below using the vocabulary provided. This will help you to revise the ways that plants and animals have adapted to survive in cold environments. **Vocabulary:** hibernate, battering, migrating, permafrost, Arctic foxes, plants, well-insulated, freezing, energy, cold, transpiration, seals, round-shaped, dormant, Antarctic.

Most plants are small, low to the ground and \_\_\_\_\_ to help them survive \_\_\_\_\_ winds. Leaves are generally small as this reduces the amount of moisture that is lost through \_\_\_\_\_. Most plants have shallow roots in order to avoid the \_\_\_\_\_ layer beneath the soil. Most plants become \_\_\_\_\_ (stop growing) to survive the \_\_\_\_\_, dark winters. Animals have also had to adapt. They are \_\_\_\_\_ against the cold, for example via a fatty layer (e.g. \_\_\_\_\_ and whales) or thick fur (e.g. \_\_\_\_\_ and polar bears). This reduces the amount of \_\_\_\_\_ they use keeping warm. Some animals \_\_\_\_\_ to conserve energy and survive the winter (e.g. Arctic ground squirrels hibernate for more than half the year and can even survive if their body temperature drops below \_\_\_\_\_). Those that do not hibernate adapt in other ways, for example by eating the \_\_\_\_\_ that are available in the winter (e.g. reindeer eat lichens) or by \_\_\_\_\_ to warmer areas (e.g. Arctic terns leave the Arctic winter and fly to the \_\_\_\_\_ for the southern summer).

20. Polar environments are **less biodiverse** than most other environments. Outline **two** reasons why this is the case.

Reason 1: \_\_\_\_\_  
 \_\_\_\_\_

Reason 2: \_\_\_\_\_  
 \_\_\_\_\_

21. Which of the following statements is **true**? Shade **one** oval only.

- a. Biodiversity is higher in the Arctic than in the Antarctic.
- b. Biodiversity is lower in tropical rainforests than in cold environments.
- c. Biodiversity increases as average temperature drops.

Key idea: Development of cold environments creates opportunities and challenges.

**Case study alert!**

The specification says that you need to know '**A case study of a cold environment**' to illustrate development opportunities and the challenges of developing cold environments.

'**Development opportunities**' refers to the options that exist to improve income and quality of life. '**Challenges of developing**' refers to the difficulties that are encountered in trying to develop.





22. Complete the template below to help you learn and revise your case study of a cold environment.

<b>A CASE STUDY OF A COLD ENVIRONMENT</b>			
My case study: _____			
<b>DEVELOPMENT OPPORTUNITIES IN A COLD ENVIRONMENT</b>	Tourism	<b>LOCATION</b>	Draw or stick in a map showing the location of your chosen cold environment.
	Fishing		
	Mineral extraction	<b>CHALLENGES OF DEVELOPING IN A COLD ENVIRONMENT</b>	<p>Explain how the following challenges make development difficult. Link the challenges to the opportunities you've already mentioned.</p> <ul style="list-style-type: none"> <li>• <b>Extreme temperatures</b></li> <li>• <b>Inaccessibility</b></li> <li>• <b>Provision of buildings</b></li> <li>• <b>Infrastructure</b></li> </ul>
	Energy		

Key idea: Cold environments are at risk from economic development.

23. Create a brainstorm to show a range of reasons why **cold environments are valuable as wilderness areas** and **why they should be protected**.

24. The key threat to cold environments is economic development, so **strategies are needed to balance economic development and conservation**. The table below outlines four strategies. In the blank column, you need to explain how each strategy can help to balance the two concerns.

STRATEGY	DESCRIPTION/ EXAMPLE	IMAGE	HOW CAN THE STRATEGY HELP TO BALANCE ECONOMIC DEVELOPMENT AND CONSERVATION?
<b>Use of technology</b>	Modern construction methods can minimise the environmental impacts of economic development. For example, <u>elevating buildings</u> or <u>building on gravel beds</u> can prevent permafrost melting.		
<b>Conservation groups</b>	These groups put pressure on governments to protect wilderness areas and fragile cold environments (e.g. <u>Greenpeace</u> ).		
<b>International agreements</b>	Agreements such as the <u>1959 Antarctic Treaty</u> limits visitors landing at one site to 100 at a time, and prohibits nuclear activities.		
<b>Role of governments</b>	Governments can make laws to protect fragile environments, such as the <u>1964 Wilderness Act</u> which protected wilderness areas from development.		

## Section C: Physical landscapes in the UK

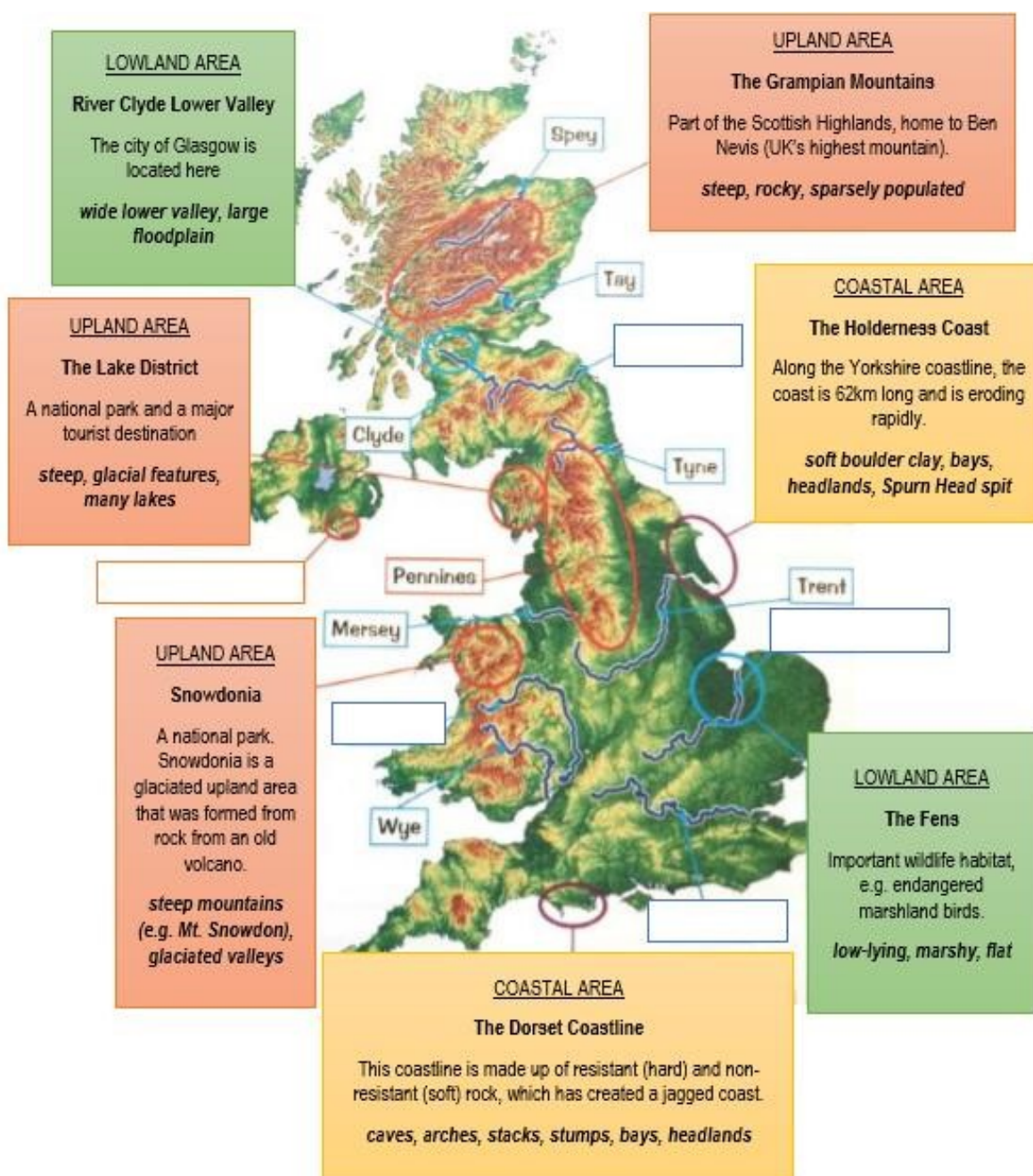
- In this section, you **MUST** study **UK physical landscapes**
- You will also study TWO from **Coastal landscapes in the UK**, **River landscapes in the UK**, and **Glacial landscapes in the UK**
- Which two optional topics do I study? \_\_\_\_\_ and \_\_\_\_\_
- Go down and put a line through the topic that you do NOT study!

### UK physical landscapes

Key idea: The UK has a range of diverse landscapes

The map shows a range of **upland**, **lowland** and **coastal** areas in the UK. Study the map. You need to know a range of upland, lowland and coastal areas.

1. Where there are blank boxes, write the mountain range or river names.

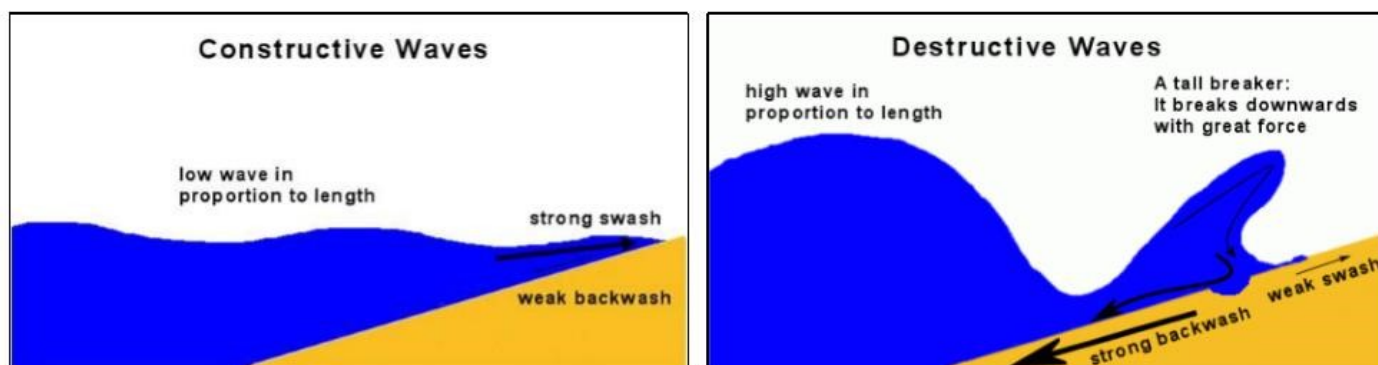


2. Using the map, complete the following sentences by filling in the gaps or deleting incorrect terms.
- Steep** land tends to be found in upland / lowland areas.
  - Flat** land tends to be found in upland / lowland areas.
  - Two **lowland** areas in the UK are \_\_\_\_\_ and \_\_\_\_\_.
  - The **River Ouse** is found in the lowland area of \_\_\_\_\_.
  - The lower valley of the River Clyde is home to the Scottish city of \_\_\_\_\_.
  - Two **upland** areas in the UK are \_\_\_\_\_ and \_\_\_\_\_.
  - The mountain of **Ben Nevis** is found in the \_\_\_\_\_ Mountains in the country of \_\_\_\_\_.
  - The **Mount Snowdon** is found in \_\_\_\_\_ National Park in the country of \_\_\_\_\_.
  - Two areas in England with **glaciated features** are \_\_\_\_\_ and \_\_\_\_\_.
  - Along the **Dorset coastline**, it is the alternating bands of \_\_\_\_\_ and \_\_\_\_\_ rock that has caused a jagged coastline.
  - The Holderness Coast is \_\_\_\_\_ very quickly, at around 1m per year and up to 10m in some places.

### Coastal landscapes in the UK

Key idea: The coast is shaped by a number of physical processes.

Study the diagrams of waves types.



3. Define 'swash'.

---



---



4. Study the photo of Beachy Head and Seven Sisters near Brighton in England. Based on what you can see in the photo, say which wave type mainly occurs there (**constructive** or **destructive**), then offer reasons for your choice.

Main wave type: \_\_\_\_\_

---



---



---



---



---



---



5. Explain how freeze-thaw weathering can cause coastal cliffs to break up.

---



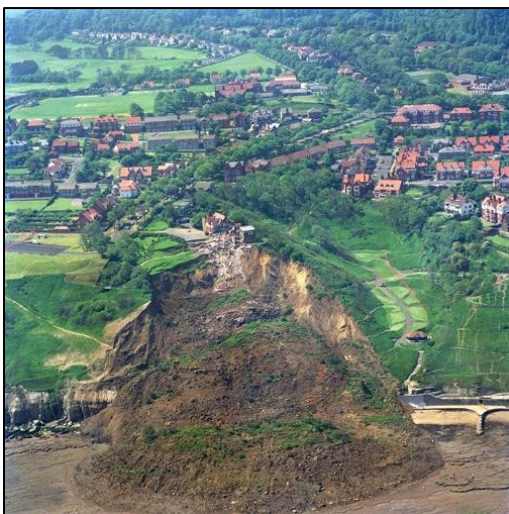
---



---



---



6. The photograph to the left shows cliffs in North Yorkshire, which suffered mass movement in 1993. Explain what causes mass movement to occur.

---



---



---



---



---

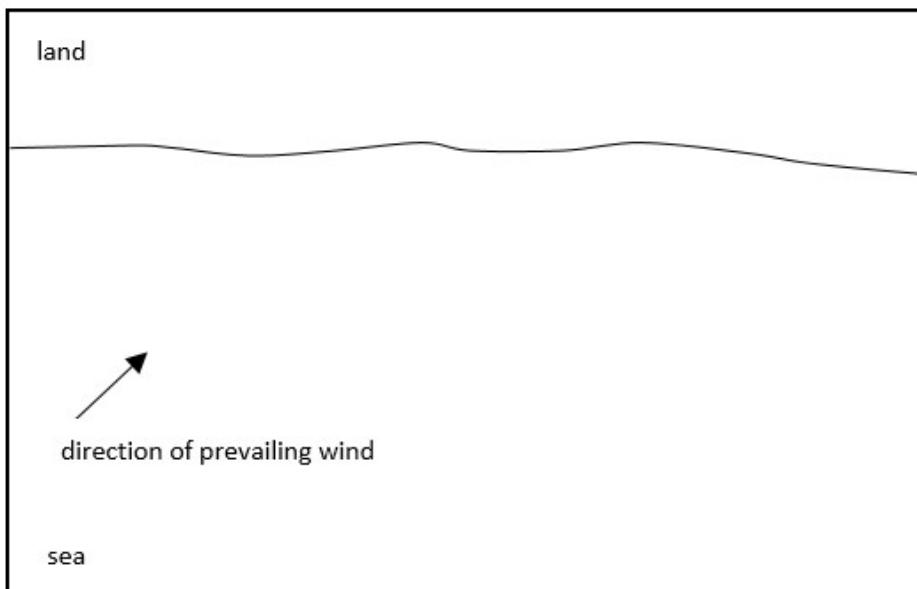


---

7. In the boxes provided, draw **labelled diagrams** to show how the processes of **hydraulic power**, **abrasion** and **attrition** erode rock.

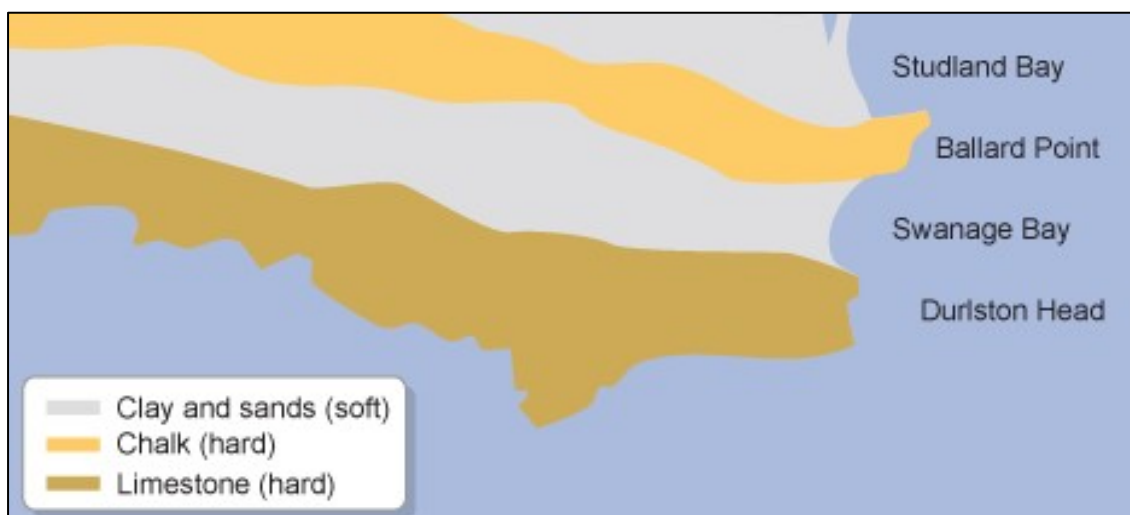
Hydraulic power	Abrasion	Attrition
<div style="height: 150px;"></div>	<div style="height: 150px;"></div>	<div style="height: 150px;"></div>

8. Label the diagram to show the process of longshore drift and how it affects a coastline. You should include a range of terms such as: **swash**, **backwash**, **erosion**, **transportation**, **deposition**.



Key idea: Distinctive coastal landforms are the result of rock type, structure and physical processes.

9. The map below shows the geology of part of the Dorset coastline. On the map, show how the coastline is likely to change in the future. Annotate the changes that you make with brief explanations.



10. Using a diagram, explain the formation of a stack.



11. **EXAM-STYLE QUESTION:** Explain how a wave-cut platform forms. (4)

---



---



---



---



---



---



---



---

12. Which of the following statements are **true**? Shade **two** ovals only.

- a. Depositional landforms occur where swash is strong.
- b. A spit is an erosional landform.
- c. A coastal bar forms when longshore drift deposits sediment across the entrance to a bay.
- d. A headland is a depositional landform.
- e. A wave cut platform is a depositional landform.


13. Next to each image below, **name the coastal feature** and say whether it is formed by **erosion** or **deposition**.



The specification says that you need to 'Use **a named example of a section of coastline in the UK** to identify its major landforms of erosion and deposition.'

Named example alert!

14. Complete the template below to help you learn/revise your named example of a section of UK coastline.

<b>A NAMED EXAMPLE OF A SECTION OF COASTLINE IN THE UK</b> <b>My example:</b> _____	
<p><b>Identify the location</b> of your chosen stretch of coastline on the map.</p> 	<p><b>Sketch map of the geology</b> of your chosen stretch of coastline.</p>
<p><b>Describe the erosional processes</b> at play along this section of coastline.</p>	<p><b>An example of one erosional landform</b> found on this section of coastline. Include a diagram or sketch of the feature and its name if it has one. Stretch: say how the feature is likely to change in the future.</p>
<p><b>Describe the depositional processes</b> at play along this section of coastline.</p>	<p><b>An example of one depositional landform</b> found on this section of coastline. Include a diagram or sketch of the feature and its name if it has one. Stretch: say how the feature is likely to change in the future.</p>

Key idea: Different management strategies can be used to protect coastlines from the effects of physical processes

15. **Define** 'hard engineering'.

---



---

16. Using the annual sea wall maintenance cost data provided, identify the mode, median, mean and range.

Year	2011	2012	2013	2014	2015	2016	2017
Annual costs (thousand £)	20	30	18	62	36	20	24

**Mode:** the most common  
**Median:** the middle value (when values are in order of size)  
**Mean:** the average  
**Range:** the difference between the greatest and smallest values

Mode: \_\_\_\_\_ Median: \_\_\_\_\_ Mean: \_\_\_\_\_ Range: \_\_\_\_\_

17. Select **one** of the following hard engineering strategies: *sea walls, rock armour, gabions or groynes*. Draw a **labelled diagram** to show how your chosen strategy protects the coastline.

Chosen strategy: \_\_\_\_\_

18. Select **one** of the following soft engineering strategies: *beach nourishment and reprofiling, or dune regeneration*. **Describe** how it protects the coast, and **outline one** advantage and **one** disadvantage to the strategy.

Chosen strategy: \_\_\_\_\_

**Command words, p.7**

It protects the coast by... \_\_\_\_\_

---



---



---

Advantage: \_\_\_\_\_

---

Disadvantage: \_\_\_\_\_

---



---

19. **Suggest** why **managed retreat** may be an appropriate response to coastal erosion in some cases.

---



---



---



---



---

The specification says that you need to use an '**example of a coastal management scheme in the UK**'. **NOTE: you must refer to a specific place (e.g. groynes at MAPPLETON. Simply discussing groynes in general would not be not sufficient).**



20. Complete the template below to help you learn/revise your example of a coastal management scheme in the UK.




<b>AN EXAMPLE OF A COASTAL MANAGEMENT SCHEME IN THE UK</b> <b>My example:</b> _____	
<p><b>Identify the location</b> of your chosen coastal management scheme on the map. Be sure to label the place name.</p>	<p><b>Provide a sketch drawing</b> of your chosen coastal management scheme.</p>
<p><b>Explain</b> the reasons why management was needed along this stretch of coastline.</p>	<p><b>Describe</b> the management scheme and explain how it helps to protect the coastline.</p>
<p><b>Describe</b> the impacts/effects of the management scheme.</p>	<p><b>Outline</b> the conflicts or problems that have arisen from the scheme. (You might refer to economic or environmental problems, or to disagreements between stakeholders.)</p>










Key idea: Distinctive fluvial landforms result from different physical processes.

23. You need to know a range of river landforms resulting from erosion and deposition (their characteristics and formation). In the tables below, complete the blank columns. Under '**characteristics**', you need to identify the features of the landform (e.g. for flood plain you might write *low, flat land on either side of a river in the lower course, fertile soil from alluvium and other deposited sediments, often used for farming*). Under '**formation**' you need to provide a step-by-step explanation of **how** it forms, referring to specific processes (e.g. simply saying 'due to erosion' isn't specific enough- say whether it is hydraulic action, abrasion or attrition, and **how** that process creates the landform).

Fluvial (river) landforms resulting from erosion			
Landform	Image	Characteristics (and where it is found- upper/middle/lower)	Formation (step-by-step explanation)
Interlocking spurs			
Waterfall			
Gorge			

Fluvial (river) landforms resulting from erosion and deposition			
Landform	Image	Characteristics (and where it is found- upper/middle/lower)	Formation (step-by-step explanation)
Meander			
Oxbow lake			



Fluvial (river) landforms resulting from deposition			
Landform	Image	Characteristics (and where it is found- upper/middle/lower)	Formation (step-by-step explanation)
Levee			
Flood plain			
Estuary			

### OS MAP FOCUS

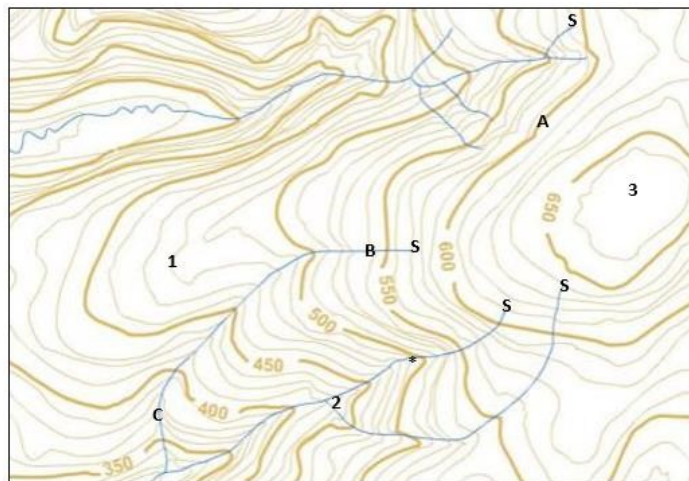
24. Now you know about river features, but are you confident to identify them on an OS map? The following information will help you to do this. Answer the questions at the end.

Contour lines are the orange lines that you see on maps. They show the **height** (or elevation) of the land in metres (at **A** the land is 600m high.)

The **closer** together the lines are, the **steeper** the land ('steep relief'). If they are **far apart**, this indicates that the land is quite **flat** ('gentle relief'). Based on this, we can see that the map shows an area of steep land. This indicates that the rivers shown are in their **upper course!**

A **V shape** is formed where the contour lines cross a river (\*). The V shape is pointing **uphill** to where the river came from.

And of course you know that water flows **downhill!** You should be able to tell the **direction** that the rivers are flowing in by using the contour lines (the river flows away from **B** where the land is 540m high, towards **C** where the land is 370m high). Also, we know that the source (start) of a river is found inland and flows towards the coast, so we know that where the blue river line begins is the source (e.g. **S**).



To re-cap: the main evidence on the map above to show that these are rivers in the upper course is- a) the **contour lines are close together** showing that land is steep, b- the **V-shape** points to where the river came from, and c- we can see the **sources** of the rivers.

#### Questions based on the map above:

- How high is the land at point 1? \_\_\_\_\_
- What is the river feature at point 2? \_\_\_\_\_
- What is the difference in land height between points A and B? \_\_\_\_\_
- What is the land like at point C? \_\_\_\_\_

The map to the right shows a river in its **lower** course. Evidence for this:

- a) the contour lines are **far apart** (indicating fairly flat land) and **the land elevation** is low
- b) the river has **large meanders**
- c) the river meanders across a **large flat area** (the flood plain), and
- d) the river is **wide** (a wide blue line)



The specification says that you need to use an **'example of a river valley in the UK'** to identify its major landforms of erosion and deposition.



25. Complete the template below to help you learn/revise your example.

<b>AN EXAMPLE OF A RIVER VALLEY IN THE UK</b>	
<b>My example:</b> _____	
<b>Major landform/s caused by erosion</b>	<b>Major landform/s caused by deposition</b>
An example of a landform caused by erosion in the _____ valley is a: _____  It is located:  The characteristics of the landform are:	An example of a landform caused by erosion in the _____ valley is a: _____  It is located:  The characteristics of the landform are:
Sketch map showing location	Sketch map showing location
Labelled diagram of the landform	Labelled diagram of the landform
Description of how the landform may change in the future and explanation why.	Description of how the landform may change in the future and explanation why.

Key idea: Different management strategies can be used to protect river landscapes from the effects of flooding

**PHYSICAL factors that affect flood risk** include precipitation (rainfall), geology (rock type), relief (land shape).

26. Below, **explain** how each factor affects flood risk, using the key vocabulary provided. An example has been done for you.

**Vocabulary:** permeable, impermeable, infiltration, steep-sided valley, surface runoff, discharge.

**Precipitation:** *Prolonged rainfall causes soil to become saturated. This means that infiltration cannot occur, so surface runoff increases, and this causes rivers to fill up quickly. In the case of heavy rainfall, the water arrives too quickly for infiltration to occur, so surface runoff carries water to the river channel. As the river discharge increases, a river may spill over its banks, causing a flood.*

**Geology:** \_\_\_\_\_

---



---



---

**Relief:** \_\_\_\_\_

---



---



---

The key **HUMAN** factor that affects flood risk is land use e.g. building on the flood plain and deforestation.

27. Below, **explain** how each factor affects flood risk, using the key vocabulary provided.

**Vocabulary:** impermeable materials, concrete, tarmac, interception, surface runoff, discharge.

**Building on the flood plain:** \_\_\_\_\_

---



---



---

**Deforestation:** \_\_\_\_\_

---



---



---



31. Give **two** examples of hard engineering strategies that can be used to manage flood risk other than dams and reservoirs.

a. \_\_\_\_\_

b. \_\_\_\_\_

32. Explain how **flood warnings** can help to reduce the effects of flooding.

---



---



---



---



---



---

### 33. **MINI ISSUE EVALUATION TASK**

There are many **engineering** strategies to help **reduce the risk of flooding or its impacts**. To help you revise this topic and also to practice the ISSUE EVALUATION component of Paper 3, you need to think about the benefits and costs of a range of hard and soft engineering strategies.

Imagine that you are a flooding expert from the Environment Agency (EA) paid to advise the local council on the best strategy to use in Boscastle, a small village in Cornwall in southern England that has experienced a number of floods in recent years. Key points to consider:

- Population: 662
- Average house value: £312,000
- Key industries: tourism and fishing
- Village is located at the confluence of three rivers
- Major flood in 2004 where the homes, businesses and cars were swept away. Boscastle flooded again in 2007 although the impacts were not as serious as in 2004.

On the lines below, explain which **one** of the four engineering strategies you recommend that the UK government uses to reduce the risk and/or impacts of flooding in Boscastle. You should explain why this is the best option, identify any problems with your choice, and say why it is a more appropriate choice than the rejected options.

**Options: 1- building a dam and reservoir upstream; 2- building flood relief channels; 3- afforestation; 4- investing in preparation** (e.g. education and modifying buildings most at risk)

Chosen option: \_\_\_\_\_

---



---



---



---



---



---



---



---



---



---

---

---

---

---

---

---

---

---


---

---

The specification says that you need an **'example of a flood management scheme in the UK'**.



34. Complete the template below to help you learn/revise the example.

<b>AN EXAMPLE OF A FLOOD MANAGEMENT SCHEME IN THE UK</b> <b>My example: _____</b>	
<p><b>Identify the location</b> of your chosen flood management scheme on the map. Be sure to label the place name.</p> 	<p><b>Provide a sketch drawing</b> of your chosen flood management scheme.</p>
<p><b>Explain</b> the reasons why management scheme was needed.</p>	<p><b>Describe</b> the management scheme and <b>explain</b> how it helps to manage flood risk and its impacts.</p>
<p><b>Outline</b> the social, economic and environmental issues. Within this section you might also discuss stakeholder opinions and any conflicts.)</p>	<p><b>Evaluate</b> the effectiveness of the management scheme.</p>



3. The paragraph below is about urban growth in HICs and LICs. Using the vocabulary provided, fill in the blank spaces.  
**Vocabulary:** *development, rural, minimally, already, slow, varies, manufacturing, China, Germany, proportion, 50%, Industrial Revolution, World Bank, Ethiopia, highest, trebled.*

Urbanisation refers to the growth in the \_\_\_\_\_ (percentage) of a country's population living in urban areas. Urbanisation is happening all over the world, and over \_\_\_\_\_ of the world's population now live in urban areas (and this is increasing). However, urbanisation is happening at different rates in places at different levels of \_\_\_\_\_. In high-income countries (HICs) like \_\_\_\_\_, urbanisation happened during the \_\_\_\_\_ (in the 19<sup>th</sup> Century) meaning that today, most people \_\_\_\_\_ live in urban areas. This means that rates of urban growth are \_\_\_\_\_ in HICs because almost everybody in the country already lives there! (For example, in Germany, between 1960 and 2016 the proportion of people living in urban areas rose \_\_\_\_\_ from 71% to 76%.) In LICs such as \_\_\_\_\_, urbanisation is happening more rapidly. LICs are less economically developed, meaning that it is only in recent years that many LICs have begun to develop industries such as \_\_\_\_\_ in the urban areas, which encourages people to move from \_\_\_\_\_ areas in search of work. Consequently, urban growth rates are \_\_\_\_\_ in LICs. (For example, in Ethiopia, between 1960 and 2016 the proportion of people living in urban areas more than \_\_\_\_\_, from 6% to 20%) (\_\_\_\_\_ data). Newly emerging economies (NEEs) are countries where economic growth is happening rapidly, e.g. Brazil, \_\_\_\_\_, and Nigeria. In these countries, urban growth \_\_\_\_\_.

4. Migration affects the rate of urbanisation, and **push-pull theory** helps to explain this. For each of the factors below, say whether it is **push** or **pull**, and **explain how it causes migration**. An example has been done for you.

**Remember:** a push factor is something that encourages someone to **leave** an area; a pull factor is something that encourages someone to **move to** an area

Factor	Push or pull?	How does it cause migration?	Common in HICs, LICs or both?
Natural disasters			
Mechanisation of agriculture			
Family members living abroad			
Better employment opportunities			
Desertification			
Improved quality of life			
Improved health care and education			
Conflict or war			



5. Define 'natural increase'.

---



---

6. What is the minimum population required for a city to be classed as a **megacity**? \_\_\_\_\_

7. Study the map showing the world's largest megacities. Using the map, answer questions 7a-7c.

7a. Which megacity is predicted to have the greatest **overall** population increase by 2025? \_\_\_\_\_

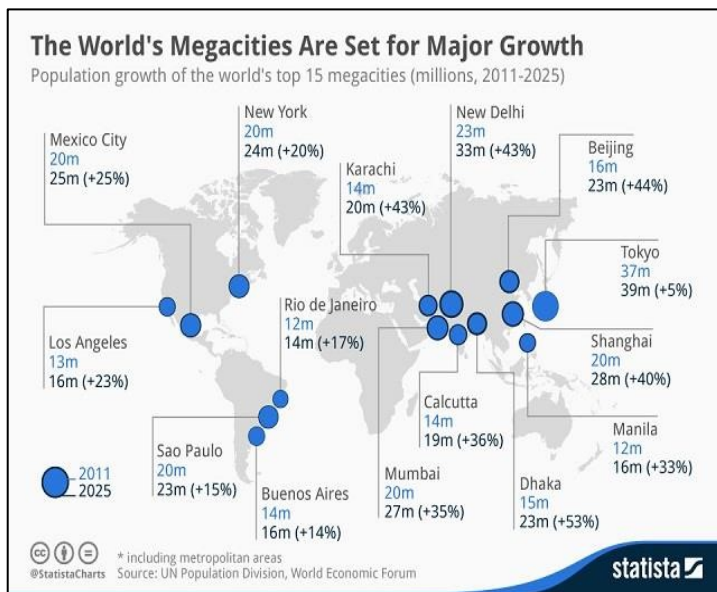
7b. Which megacity is predicted to have the greatest **rate** of urban growth of the fifteen megacities shown?

---

7c. Which region is predicted to experience the greatest urban growth by 2025? Shade **one** oval.

- i. North America
- ii. Europe
- iii. Asia

8. Explain how natural increase leads to the growth of megacities.




---



---



---



---



---

Key idea: Urban growth creates opportunities and challenges for cities in LICs and NEEs.

The specification says that you need to use '**an example of how urban planning is improving the quality of life for the urban poor.**' Make sure your example is based in an LIC or NEE.



9. Complete the template below to help you remember your urban planning example.

AN EXAMPLE OF HOW URBAN PLANNING IS IMPROVING THE QUALITY OF LIFE OF THE URBAN POOR		
My example: _____		
<p><b>What are the problems?</b> (Say why the QOL needs to be addressed in your chosen location. Try to include statistics.)</p>	<p><b>Which urban planning strategies are being used?</b> (Describe them, and say how they address QOL issues.)</p>	<p><b>How effective are the strategies?</b></p>

**Case study alert!**

The specification says that you need to know '**A case study of a major city in an LIC or NEE**' to illustrate the location & importance of the city, causes of growth, and how urban growth has created opportunities and challenges. As a **case study**, you need to know about many aspects of your chosen city. It is possible that an entire 9-mark question will be based on one key idea, so take the time to research and revise each section.

10. To help you learn/revise this case study, complete the template below. (You should also do further research to help you remember place specific detail. Looking up YouTube clips about your chosen city is one useful way. Finding relevant images of the city and creating a visual brainstorm with annotations is another.)

<b>A CASE STUDY OF A MAJOR CITY IN AN LIC OR NEE</b> <b>My example: _____</b>	
<b>Map showing the location of the major city</b> (either a sketch map or printed map)	<b>Why is the city important?</b> (You should discuss its importance within the country and within the world more broadly.)
<b>Which <u>migration factors</u> are contributing to the city's growth?</b> (Push-pull factors; try to include statistics and place-specific detail).	<b>How is <u>natural increase</u> contributing to the city's growth?</b> (How and why has natural increase changed in recent decades?)
<b>What are the <u>opportunities</u> resulting from the urban growth?</b> (Social opportunities e.g. access to services & resources + <u>economic opportunities</u> ?)	<b>What are the <u>challenges</u> resulting from the urban growth?</b> (Managing urban growth, service and resource provision? Ec/soc/en)

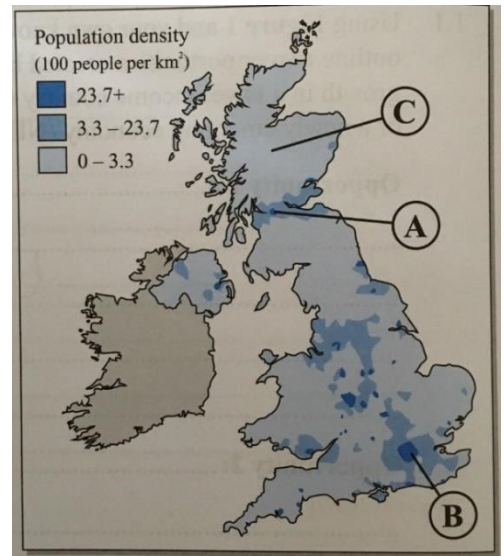
**Remember-** an evaluate/assess element is possible in case study questions... think about which factors are the most significant in causing urban growth, and also about whether the opportunities or challenges are greater...



Key idea: Urban change in cities in the UK leads to a variety of social, economic and environmental opportunities and challenges.

13. Study **Figure 1**, a map showing the population density of the UK.

13.1 **Describe** population distribution in the UK.




---

---

---

---

---

---

---

---

---

---

13.2 Name the cities labelled **A** and **B** on the map, and state which countries each city is located in.

**A:** The city is \_\_\_\_\_ and is located in the country of \_\_\_\_\_

**B:** The city is \_\_\_\_\_ and is located in the country of \_\_\_\_\_

13.3 Suggest why the population density in areas **B** and **C** vary so much.

---

---

---

---

---

---

---

---

---

---

14. **ISSUE EVALUATION- MAKING LINKS BETWEEN TOPICS...** Think back to the 'physical' topics of paper 1 (e.g. River landscapes in the UK and Glacial landscapes in the UK). Which links can you draw between the issue of population density in the UK and the physical topics you've already studied? Make notes next to the dot points below. An example has been done for you.


- In Ecosystems I learnt that the south-east of England has a lot of lowland areas that are affected by development and population increases (e.g. marshland areas east of London and in East Anglia etc.). This links to Urban growth and UK cities because it is the spread of people and industries that puts these ecosystems at risk.

- \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Case study alert!**

The specification says that you need to know '**A case study of a major city in the UK**' to illustrate the location & importance of the city, impacts of migration on the city's character and growth, and how urban growth has created opportunities and challenges. As a **case study**, you need to know about many aspects of your chosen city. It is possible that an entire 9-mark question will be based on only one key idea, so take the time to research and revise each section in depth.

15. To help you learn/revise this case study, complete the template below. (You should also do further research to help you remember place specific detail. Looking up YouTube clips and documentaries about your chosen city is one useful way. Finding relevant images of the city and creating a visual brainstorm with annotations is another. Looking up online articles about the city can help to shed light on the character of the city, *especially if you look at newspapers from the city itself.*)

<b>A CASE STUDY OF A MAJOR CITY IN THE UK</b> <b>My example: _____</b>	
<b>Identify the location of the major UK city on the map.</b>	<b>Why is the city important?</b> (You should discuss its importance within the UK and the wider world.)
	
What are the <b>impacts</b> of <u>national and international migration</u> on the <b>growth</b> of the city? (Try to use statistics.)	What are the <b>impacts</b> of <u>national and international migration</u> on the <b>character</b> of the city?
What are the <b>opportunities</b> resulting from the <b>urban growth</b> ? (e.g. <u>soc/ec opps</u> such as cultural mix, recreation and entertainment, employment, integrated transport systems, and <u>environmental opps</u> like urban greening?)	What are the <b>challenges</b> resulting from the <b>urban growth</b> ? ( <u>soc/ec</u> e.g. urban deprivation & inequalities; <u>environmental</u> e.g. dereliction, waste disposal; and the impact of urban sprawl etc.)

16. **Outline** some of the problems experienced by the environment as a result of the growth of commuter settlements.

---



---



---



---



---

17. **EXAM-STYLE QUESTION:** Using a named example, explain how urban change can cause inequalities in housing. (4)

---



---



---



---



---



---



---

The specification says that you need to use '***an example of an urban regeneration project***' to show reasons for regeneration and the features of the project. Make sure your example is based in the UK.

**Example alert!**

18. Complete the template below to help you remember your urban regeneration project example.

<b>AN EXAMPLE OF AN URBAN REGENERATION PROJECT</b>	
<b>My example:</b> _____	
<p><b>Why did the area need regeneration?</b> (Try to identify soc/ec/en issues and include statistics.)</p>	<p><b>What did the project involve?</b></p>

Key idea: Urban sustainability requires management of resources and transport.

Cramming millions of people into relatively small spaces (cities) can take a huge toll on the environment, but strategies exist to make urban living more sustainable. Before you think about the strategies, you need to ensure that you know what 'sustainable' means!

**Sustainability refers to a way of doing things that enables a balance of economic, social and environmental concerns, with a view to the long-term 'health' of people, the economy and the environment.** If a government prioritises only economic growth at the expense of citizens and the natural environment, its approach is very unsustainable. Similarly, if a government only focuses on protecting the environment but does nothing about inequality, this is also unsustainable. If something is sustainable, it can **continue well into the future**. In both examples, the approaches could not continue for very long- they cannot be *sustained*.

19. Decide whether each urban strategy below is sustainable (S) or unsustainable (U). Write an S or U next to each and give a reason/s for your decision.

Strategy	Sustainable (S) or Unsustainable (U)	Reason/s
City A has rapidly growing water needs. The government decides to transport water from the sparsely populated farming regions to use in the densely populated south.		
City B has rapidly growing water needs. The government offer subsidies so that people and councils that install rainwater tanks do not have to pay the full cost of installation.		
The population of City C generates a lot of waste. The government decides to build three new recycling plants to turn the waste into new products.		
One of the councils in City D has approved the building of a business centre on one of its main parks. It'll generate many jobs, but it will remove children's play areas and habitats for urban wildlife.		

20. Select one of the strategies to the right and **assess** the contribution that it can make towards sustainable urban living.

---

---

---

---

---

---

---

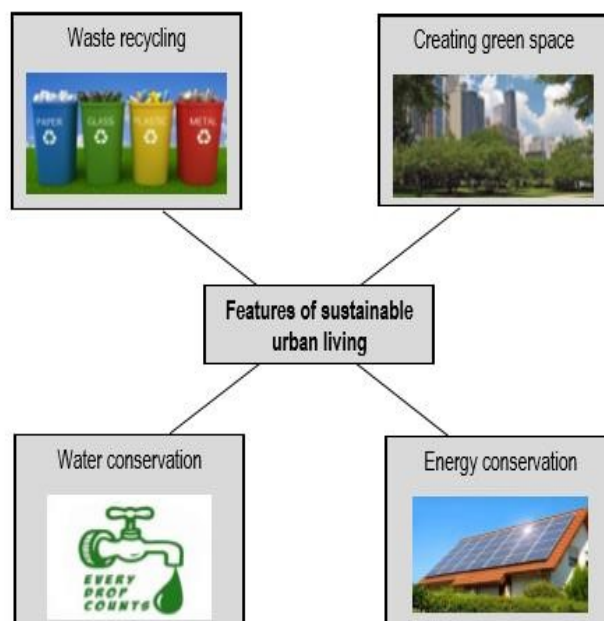
---

---

---

---

---







## Section B: The changing economic world

Key idea: There are global variations in economic development and quality of life.

People often think of 'development' purely in economic terms, but this is a bit limited. **Development refers to progress in economic growth but also in social welfare and the use of technology.** When a country develops life gets better for people living there because they have better economic opportunities and quality of life.

The level of development varies between different countries, and some countries are developing more rapidly than others. The difference in development between more and less developed countries is called the **global development gap**.

Measuring development isn't always straightforward as there are lots of different measures. For example, looking at **average income** is one way to get an idea of quality of life, but it doesn't tell the whole story. Looking at **doctors per 1000 people** tells us something about how developed the country is too, but again, it doesn't give the whole story. That's why we use a range of **development indicators**.

1. In the table below, fill in the gaps to ensure that you know what each development indicator is, what it measures, how it changes as a country develops, and examples (include data). Use <http://data.worldbank.org/> if you need data.

Development indicator	What it is	What it measures	As a country develops, it gets...	An example where it is high	An example where it is low
Gross National Income (GNI)	Total value of goods & services produced by a country, including income from overseas. Usually measured in US\$.			Germany \$3,523,920,730,000	Dominica \$508,050,000
GNI per head/ per capita			Higher		
Gross Domestic Product (GDP)		Wealth			
Birth rate		Women's rights			
Death rate	The number of deaths per 1000 people in a population in a year.			Central African Republic 14	Honduras 5
Infant mortality rate			Lower	Somalia 85	Sweden 2
People per doctor		Health			
Literacy rate			Higher		
Access to safe water	The percentage of people who have clean drinking water.			Germany 100%	Ethiopia 57%
Life expectancy					Cote D'Ivoire 52yrs
Human development index (HDI)		Health Education Wealth	Higher		

Each development indicator is useful in some way, but they often have problems as well. For example, **GNI per head** is useful in that it gives a **sense of the average income** of people in a country and as such it gives a **general idea of quality of life**. However, as **an average**, it **tells us nothing** about the gap between the rich and poor in a country. This should show you that relying on one indicator alone is not a good approach, and we should look at a variety of indicators to get a better idea of a country's level of development. The **Human Development Index (HDI)** was developed as a response to this problem.

2. Explain why the HDI is often seen as a more useful development indicator than single indicators such as GNI per capita.

---



---



---



---

3. Outline one criticism of the HDI.

---



---

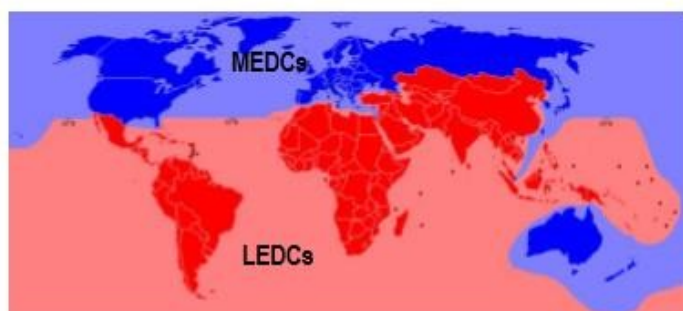


---



---

Ways of grouping countries has changed over time. In the past, countries were divided into More Economically Developed Countries (MEDCs) and Less Economically Developed Countries (LEDCs). Nowadays we talk about High Income Countries (**HICs**) and Low Income Countries (**LICs**), and another category has been added: Newly Emerging Economies (**NEEs**).



4. Study the two maps above and then explain why adding the third category (NEE) is more useful than a simple wealthy/poor split when trying to understand levels of development

---



---



---



---

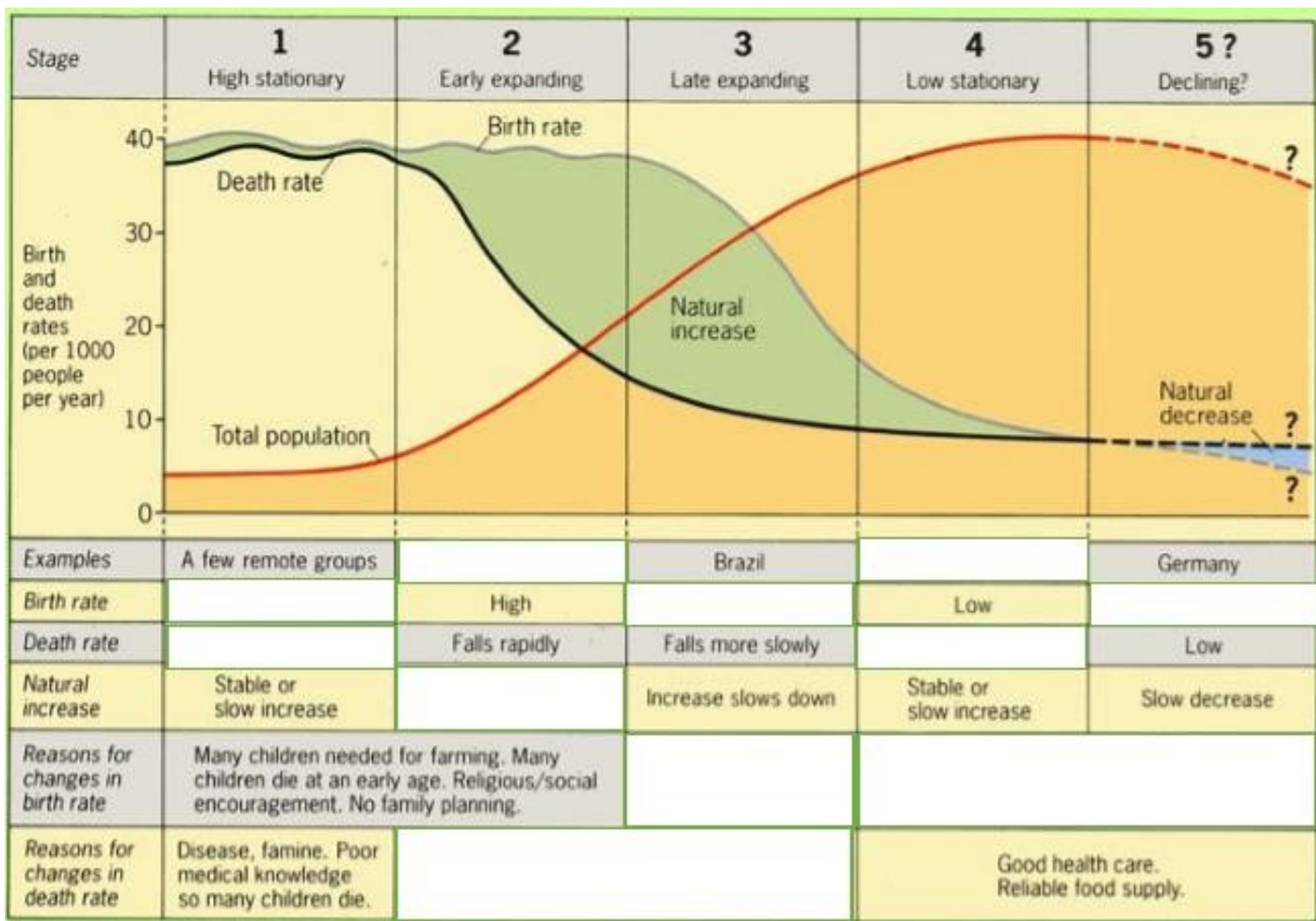


---



---

5. The Demographic Transition Model is shown below, but certain information has been blanked out. Fill in the spaces with examples, descriptions and reasons.



6. Explain why the death rate decreases before the birth rate as a country develops.

---



---



---



---



---



---

7. Outline some of the problems faced by governments of countries with a very low birth rate.

---



---



---



---



---



---

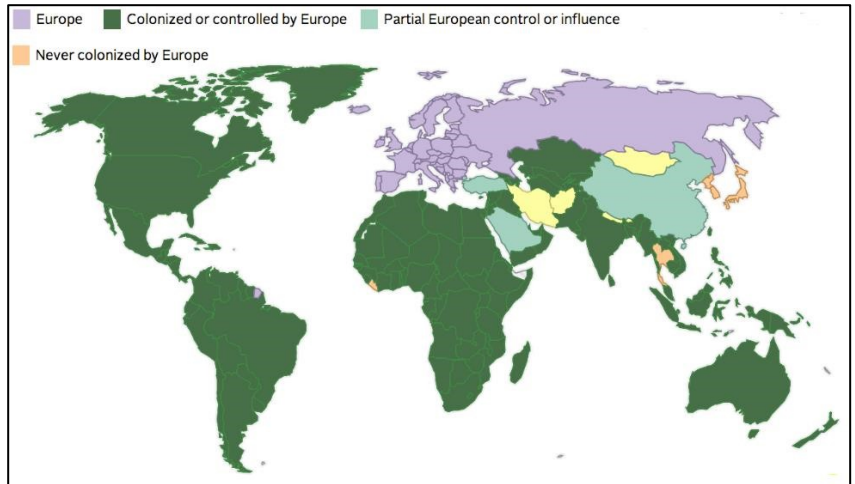
8. Create a brainstorm to show **reasons for unequal development across the world**. Your brainstorm should have three main arms: physical, economic and historical. It should address all of the following: *poor farming land, raw materials, climate, natural hazards, colonisation, conflict/war, trade links, debt, economies that rely on primary exports*.

9. Outline **one** reason why a country that suffers from natural disasters may find it difficult to develop.

---

---

10. Study the map showing countries that at some point were under European control (colonised). What are the links that you can make between this map and the current global development gap? Offer **reasons** for these links.



---

---

---

---

---

---

---

---

---

---

11. Explain why a country that relies mainly on the export of primary goods may find it difficult to develop.

---

---

---

---

12. Uneven development has many consequences, for example large migration flows and disparities in health and wealth.

**Explain** how uneven development causes large flows of international migration.

---



---



---



---



---



---

Key idea: Various strategies exist for reducing the global development gap.

The development gap is very **tricky to reduce**. A **range of strategies** exist, but there is **no one-size-fits-all approach**, and different **stakeholders** will have **conflicting views** about them.

13. In the table below, fill in the gaps to show your understanding of what each strategy involves, how it helps to reduce the development gap, who would benefit from each approach, and problems/criticisms. Some of the boxes have been filled in for you, and 'Aid' has been done entirely as a model.

STRATEGIES	WHAT DOES IT INVOLVE?	HOW DOES IT REDUCE THE DEVELOPMENT GAP?	WHO BENEFITS?	PROBLEMS / CRITICISMS
Aid	Aid ( <b>assistance</b> ) is given, usually from one government to another. It is often in the form of <b>money</b> , but may be in the form of help (e.g. rebuilding or medical aid after a natural disaster). Money may be given as <b>donation</b> or <b>loan</b> .	Aid is often spent on <b>projects</b> to help develop the country. For example, money spent developing <b>schools</b> or <b>hospitals</b> can generate long term improvements in skills, literacy and life expectancy. This improves <b>quality of life</b> , creates a more <b>skilled workforce</b> , and helps people to live and work longer, so they pay <b>taxes</b> for longer and rely less on the government for <b>welfare</b> . Money spent on improving <b>water access</b> and <b>sanitation</b> improves people's health and reduces the spread of avoidable diseases. This strengthens the workforce, <b>reduces infant mortality</b> , reduces need for <b>healthcare</b> and improves <b>life expectancy</b> .	If money is <b>spent wisely</b> by the recipient government, its <b>citizens</b> and the <b>country overall</b> should benefit. Aid can also provide <b>stability</b> for the recipient government because the population is less inclined to unrest if their needs are being met. The donor government also benefits as they give aid based on <b>preferential conditions</b> . For example, <b>China</b> has given aid to <b>Kenya</b> , on the condition that a certain percentage of Kenya's <b>imports</b> are bought from China.	Recipient countries may become <b>reliant</b> on aid. Donor countries may impose <b>conditions</b> that benefit the donor more than the recipient. Aid in the form of loans may be difficult to <b>pay back</b> , especially where <b>high interest</b> rates exist. This can lead the recipient into <b>further debt</b> and prevent development. <b>Corrupt</b> governments may not spend aid as intended, meaning that money is siphoned off to powerful individuals while the <b>neediest</b> receive no benefit.
Debt relief	Debt relief is when some or all of a country's debt is <b>cancelled</b> , or <b>interest rates</b> on their loans are <b>lowered</b> . For example, the <b>IMF</b> and <b>World Bank</b> have granted <b>HIPC</b> (highly Indebted Poor Country) status to 37 countries, meaning that they qualify for <b>debt assistance</b> .			Debt relief often involves strict <b>conditions</b> that can prevent development. For example, in some cases, to receive debt reduction or cancellation, recipient governments have had to agree to sell their <b>natural resources</b> to foreign countries, or to remove <b>subsidies</b> that they give to farmers, meaning that their farmers cannot <b>compete internationally</b> .
Fair Trade				Most of the profits go to <b>retailers</b> rather than the <b>producers</b> . It can be difficult to <b>monitor</b> the work conditions of Fair Trade-approved organisations, which can mean that in some cases employers do not abide by expectations. Recent research has also shown that while the producers may benefit from Fair Trade, <b>employees</b> do not necessarily receive better treatment from FT employers than non-FT employers.

Industrial development		Developing industries such as <b>manufacturing</b> can help a country to develop by increasing the <b>revenue</b> that is earned from <b>exports</b> . It also <b>diversifies the economy</b> , meaning that the economy now relies on more than one main industry. This provides more financial <b>stability</b> . Industries such as manufacturing generate more money than <b>primary</b> sectors such as farming, so governments have more funds with which to invest into <b>social development</b> such as health, education and housing. Developing new industries also develops the <b>training</b> and <b>skills</b> of the workforce.		
Investment			Governments receive increased revenue, mainly from the <b>taxes</b> paid by foreign companies. <b>Jobs</b> are generated by investing companies, which can improve <b>employment options</b> and <b>wages</b> for workers, which may improve <b>quality of life</b> . <b>Locally owned businesses</b> may also benefit, because as people's wages improve they may <b>spend</b> more in the local economy.	Foreign <b>multinational companies</b> are often allowed to get away with <b>poor treatment</b> of workers (e.g. harsh conditions and low wages) and <b>environmental harm</b> (e.g. toxic waste dumping, dyes and bleaches into water systems, deforestation (e.g. for palm oil plantations in Indonesia) or unrestricted greenhouse gas emissions. Also, most of the <b>profits flow out</b> of the country and back to the 'headquarter' country.
Microfinance			<b>Poor people</b> who wouldn't ordinarily qualify for <b>loans</b> from big banks because they have no <b>assets</b> tend to benefit most from microfinance. <b>Women</b> are the main recipients of microfinance because they are less likely to default on their loans so in many cases, 99% of microfinance loans go to women. This can give them the opportunity to develop their own <b>businesses</b> . <b>Families</b> can benefit because their overall <b>household income</b> may improve.	Microfinance has not been proven to help development on a <b>national scale</b> . Often, <b>better-educated</b> communities tend to receive the loans while less-educated or <b>less-literate</b> communities miss out because they cannot <b>lobby</b> as effectively for microfinance loans. This can mean that the quality of life of the <b>neediest</b> does not improve.
Tourism	Tourism brings in enormous amounts of money, and <b>foreign currency</b> can strengthen a poor country's economy. For many countries, tourism is its <b>main industry</b> . Tourism has provided huge economic benefits to countries such as Jamaica, Barbados, Thailand, Cambodia, Kenya, Egypt, South Africa, and Brazil.			Tourism brings economic benefits to <b>tour companies</b> although the financial benefits may not extend to the <b>neediest</b> . Tourism can often leave the environment <b>vulnerable</b> , for example as tourists extend into ever more <b>remote</b> regions, leave <b>rubbish</b> behind, cause <b>erosion</b> , use large amounts of the host country's <b>natural resources</b> (e.g. water), etc. Tourism can also turn <b>indigenous cultures</b> into tourist attractions, for example many people in the <b>Masai</b> tribe in Kenya have ceased their nomadic lifestyle in order to stage daily dances for tourists.
Using intermediate technology			<b>Individuals</b> and <b>communities</b> (often the <b>neediest</b> ) benefit from intermediate technologies because they are cheap, easy to maintain and provide an improved quality of life. For example, improved lighting, improved safety and fewer respiratory problems result from using the relatively simple technology of LED lights in homes instead of burning firewood for light. <b>Governments</b> also benefit because they are not necessarily investing in hugely expensive infrastructure but are still helping communities to develop.	

The specification says that you need to use '*an example of how the growth of tourism in an LIC or NEE helps to reduce the development gap*'.

Example alert!

14. Complete the template below.

AN EXAMPLE OF TOURISM IN AN LIC OR NEE HELPING TO REDUCE THE DEVELOPMENT GAP	
My example: _____	
<p><b>A description of the tourism industry in your chosen LIC/NEE</b> (+ include data e.g. number of tourists, revenue etc.)</p>	<p><b>Location</b> (a drawn or printed map showing the location of your chosen LIC or NEE and if relevant, where tourism operates)</p>
<p><b>How is tourism helping to reduce the development gap in your chosen LIC/NEE?</b></p>	<p><b>Are there any problems or criticisms?</b> (social, economic, environmental?)</p>

15. **EXAM-STYLE QUESTION:** Explain how tourism can help an LIC or NEE reduce the development gap. (4)

---



---



---



---



---



---



---



---

Key idea: Some LICs and NEEs are experiencing rapid economic development which leads to significant social, environmental and cultural change.

Case study alert!

The specification says that you need to know '**A case study of one LIC or NEE**'.

As a **case study**, you need to know about many aspects of your chosen LIC/NEE. It is possible that an entire 9-mark question will be based on only one key idea, so take the time to research and revise each section in depth.

16. To help you learn/revise this case study, complete the template below. You should also do further research- look up YouTube clips and documentaries about your chosen LIC/NEE. Find relevant images of the country and create a visual brainstorm based on the topics of each box below. Look up articles about the changes that the country is experiencing, and find past and current data on industrial and social changes using World Bank Data (<http://data.worldbank.org/>)

### CASE STUDY OF AN LIC OR NEE

My example: \_\_\_\_\_

<p><b>Background information</b> (what is the <u>social</u>, <u>political</u>, <u>economic</u> and <u>environmental</u> context? E.G for 'social'- population size, life expectancy, level of education; for 'political'- the type of government, in/stability, policy priorities; for 'economic'- GNI, GNI per head, main industry/ies etc; for 'environmental'- key issues, ecosystems under threat etc.</p>	<p><b>Location</b> (include a map showing the location of your chosen LIC/NEE within its region)</p> <p>What is the <b>importance of the country</b> within its <b>region</b> (<i>regionally</i>) and within the <b>wider world</b> (<i>globally</i>)?</p>
<p><b>The industrial structure</b>- outline the importance of <u>primary</u>, <u>secondary</u> and <u>tertiary</u> industries (both employment and contribution to GDP) and how this has <u>changed over time</u>.</p>	<p><b>How can manufacturing stimulate economic development in the LIC/NEE?</b></p>
<p><b>TNCs</b>- what is their role in the country's industrial development?</p>	<p><b>TNC's</b>- advantages and disadvantages for the LIC/NEE?</p>



<p><b>Describe how the country's relationships with the wider world are changing...</b> (trade and political relationships)</p>	<p><b>International aid</b>- what <u>types of aid</u> does the country receive? What are the <u>impacts</u> on the LIC/NEE?</p>
<p><b>Effects of economic development on the environment</b></p>	<p><b>Effects of economic development on quality of life</b> (use data e.g. from the World Bank to show changes in access to water, literacy, life expectancy etc)</p>

Key idea: Major changes in the economy of the UK have affected, and will continue to affect, employment patterns and regional growth.

17. Prior to **de-industrialisation** in the UK, what were the UK's main industries?

---



---

18. Explain why the UK experienced de-industrialisation.

---



---



---



---



---

19. Study the table 'UK employment structure over time'. Outline how **globalisation** has contributed to the changes shown.

---



---



---



---

UK EMPLOYMENT STRUCTURE OVER TIME			
Year	Primary	Secondary	Tertiary
1800	75%	15%	10%
1900	15%	55%	30%
2000	2%	28%	70%

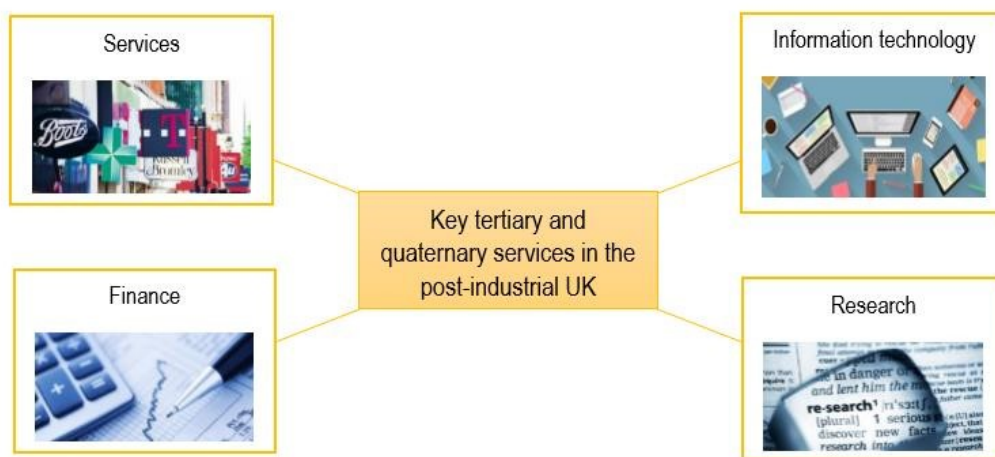
20. What does 'post-industrial economy' mean?

---



---

21. **Services, information technology, finance and research** are all key sectors in post-industrial UK. For each sector, annotate each box in the model below, e.g. employment statistics, % contribution to GDP or GNI, government policies to promote the sector, where they are located within the UK, etc.



22. Give **two** reasons why the number of science and business parks in the UK has grown in recent decades.

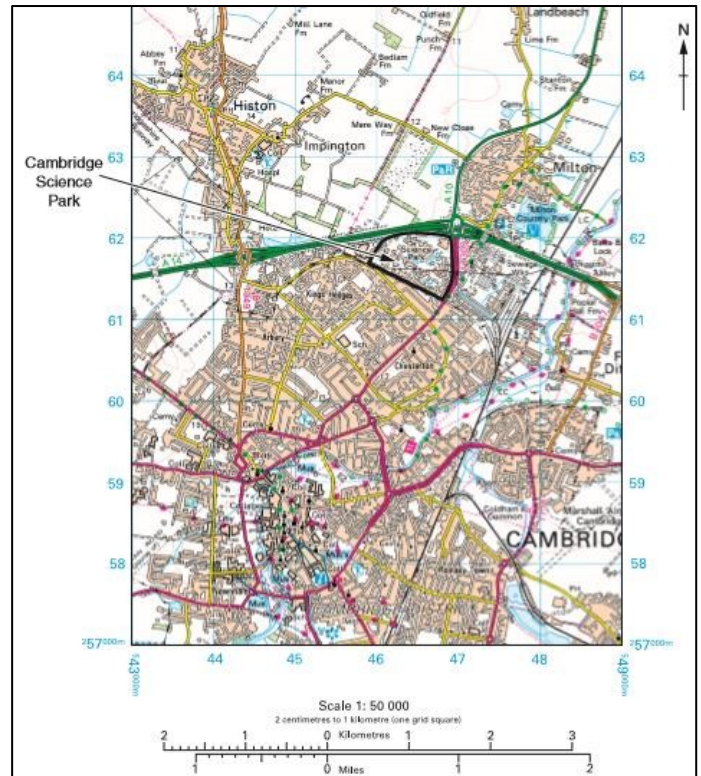
Reason 1: \_\_\_\_\_

Reason 2: \_\_\_\_\_

Study the **OS map extract** showing the location of Cambridge Science Park (on the following page).

23. Give the four-figure grid reference where the science park is located. \_\_\_\_\_

24. Suggest why this is a desirable location for a science park.




---



---



---



---



---



---



---




---

The specification says that you need to use ***'an example of how modern industrial development can be more environmentally sustainable'***.



25. Complete the template below to revise how modern industrial development can be more environmentally sustainable.

<b>AN EXAMPLE OF HOW MODERN INDUSTRIAL DEVELOPMENT CAN BE MORE ENVIRONMENTALLY SUSTAINABLE</b> <b>My example:</b> _____	
<b>Description of the industry</b> (What is produced? How is it produced? Why is it important to the area in which it is produced, and to the UK?)	<b>Location-</b> show the location of the industry. Label relevant nearby settlement/s or environmental features. <div style="text-align: right; margin-top: 10px;">  </div>
<b>How is this example of modern industry striving to be more sustainable?</b>	<b>Assess how sustainable this example of modern industrial development is.</b>

**EXAM-STYLE QUESTIONS**

Study **Figure 3**, showing population change in two rural parts of the UK, and **Figure 4**, showing the locations and other features of these counties.

26. Using Figure 3, calculate the percentage population change for Argyle and Bute and North Somerset between 2001 and 2011.

North Somerset: \_\_\_\_\_

Argyle and Bute: \_\_\_\_\_

27. Suggest **one** possible reason for the population change in each area.

North Somerset: \_\_\_\_\_

\_\_\_\_\_

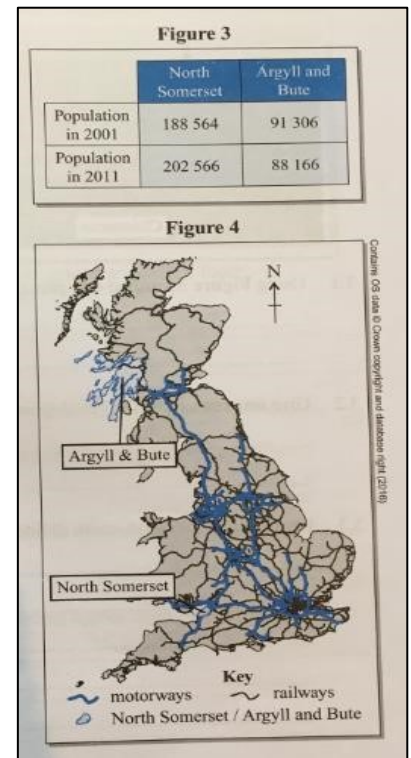
\_\_\_\_\_

\_\_\_\_\_

Argyle and Bute: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



28. Explain how improving and developing new infrastructure (e.g. road, rail, port and airport) can help areas suffering from population decline to address this problem.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

29. Suggest why many young people may choose to move away from rural areas such as Argyle and Bute.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

'North-south divide' refers to the fact that the north and south have been affected by industrial change differently (with the north hit harder by de-industrialisation and the south benefiting more from growing tertiary and quaternary industries) and the fact that in general, social and economic indicators tend to be better in the south.

The map below shows you the areas generally considered to be '**the north**' (the north of England and most of Wales, all of Northern Ireland and Scotland) and '**the south**' (densely populated southern England, including the capital city of London).

30. Annotate the map with **social and economic indicators** and **other relevant details** for different parts of the 'north' and the 'south' (life expectancies, years of education, wages, locations of declining/closed industries (e.g. coal) and growing industries (e.g. finance), areas where most foreign investment occurs, etc).



**Command words, p.7**

31. Using evidence, **discuss** the claim that a 'north-south divide' exists in the UK.

---

---

---

---

---

---

---

---

---

---

32. Explain how creating **enterprise zones** can help to reduce the north-south divide.

**Tip:** You should also revise how devolving powers and the 'Northern Powerhouse' attempt to resolve regional differences.

---

---

---

---



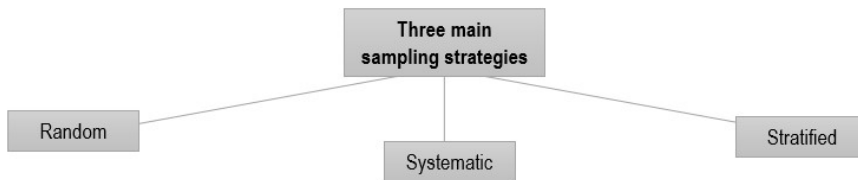
**Section B: Fieldwork**

Fieldwork is assessed in **Paper 3: Geographical Applications**. Even though you have no coursework, you do complete **two** sets of fieldwork (**one human** and **one physical**) and you need to be able to **write about these in the exam**. You may be asked about **either** your physical or human fieldwork, **or both**.

The fieldwork part of the exam is split into two parts: **familiar fieldwork contexts** and **unfamiliar fieldwork contexts**. The familiar fieldwork questions relate to **your own fieldwork**. The unfamiliar fieldwork questions relate to **unfamiliar situations**: e.g. you might need to answer questions about **data collection techniques**, or how best to **present** a set of data, or to **assess** how useful certain techniques are. Let's begin with unfamiliar fieldwork.

**Unfamiliar fieldwork**

- For each of the three main sampling strategies below, annotate the model by describing what the strategy involves and its advantages/why it is used.



Data collection methods vary between **human** and **physical** fieldwork (e.g. **pedestrian count** vs. **sediment analysis**). They also vary depending on your **area of enquiry**, e.g. for coasts you might measure **beach profile** whereas for rivers you might measure **velocity**. There are many **data collection techniques** (more than you can possibly describe here). In class and in your own time you should ensure that you understand **a variety** of data collection techniques.

- For now, select a range of human **and** physical primary data collection techniques from the selected list below (or others that your teacher mentions). **You should select different techniques to the ones you used in your physical and human physical fieldwork enquiries**. For each, say whether it is used for **human or physical fieldwork (or both)**, describe **what it is**, its **aims**, and mention any **considerations**. An example has been done for you. (The RGS website is helpful: <http://www.rgs.org/OurWork/Schools/Fieldwork+and+local+learning/Fieldwork+techniques/Fieldwork+techniques.htm> )

Selected list of primary data collection techniques: bipolar analysis, questionnaires, pedestrian flow, environmental quality survey, environmental impact survey, land use survey, diversity index, mental maps, perception analysis, (for Coasts) beach profile, infiltration rate, sediment analysis, (for Rivers) river cross sections, velocity, sediment analysis



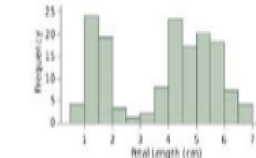

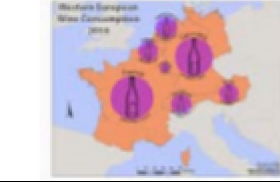

Data collection technique	Description	Aims	Considerations
Urban land use transect  (human fieldwork enquiry)	Develop a land-use classification key based on land use type (residential, industrial, etc.) Walk the transect route and gradually build up information on the base map by adding colours or codes from the key. The map can be redrawn following fieldwork to ensure that all of the land uses are clearly shown. It is useful to have base maps of the study locations, a land use classification key, pencil, clipboard, notepad or record sheets and a digital camera	To investigate land use patterns and change over time; to investigate retail and commerce and to identify any issues concerning the management of the urban area; to undertake a study of the function of a town or of different parts of a town/city, or to compare the function of different towns and cities; to investigate spatial differences in function within an urban area; to study changes in function over time (temporal studies); to investigate industrial land-use.	Mapping large areas can be time consuming and labour-intensive (group work is a good idea); a suitable sampling strategy should be devised to reduce bias in land use surveys; obtaining site maps, especially historical ones, can be difficult (and there may be a cost involved); subjectivity is inevitable when classifying land use and errors can sometimes be made in judging the age and style of buildings

Data collection technique	Description	Aims	Considerations



Data needs to be presented in ways that make it **easy to understand**. However, there are **different types of data**, which means that **different presentation techniques** are needed. You are likely to be questioned on data presentation in the unfamiliar fieldwork section of paper 3, so you need to know **why different data presentation methods are used**.

2. Complete the table below, describing what each presentation technique is, and explaining why it is used. An example has been done for you.

Data presentation technique	Description of technique	Why it is used (and which data type it is suitable for)
<p><b>Field sketch</b></p> 	<p><i>A diagram drawn by hand to show physical and/or human features of a place. It should complement the other FW techniques &amp; show scale and direction (compass points).</i></p>	<p><b><u>Data type:</u> landscape/place image</b></p> <p><i>Used to introduce the study site/transects; to examine the human and physical features of a landscape; to examine changes over time, e.g. comparing modern-day uses to those shown by secondary photographic data; to consider the causes and consequences of changes; to make qualitative judgements about a place.</i></p>
<p><b>Bar chart</b></p> 		<p><b>(Data type: _____)</b></p>
<p><b>Histogram with equal class interval</b></p> 		<p><b>(Data type: _____)</b></p>
<p><b>Isoline</b></p> 		<p><b>(Data type: _____)</b></p>
<p><b>Proportional symbols</b></p> 		<p><b>(Data type: _____)</b></p>
<p><b>Sketch map</b></p> 		<p><b>(Data type: _____)</b></p>

<p>Pie chart</p>		<p>(Data type: _____)</p>
<p>Scatter graph</p>		<p>(Data type: _____)</p>
<p>Dot maps</p>		<p>(Data type: _____)</p>
<p>Proportional Flow lines</p>		<p>(Data type: _____)</p>
<p>Line chart</p>		<p>(Data type: _____)</p>
<p>Pictogram</p>		<p>(Data type: _____)</p>
<p>Choropleth</p>		<p>(Data type: _____)</p>
<p>Desire lines</p>		<p>(Data type: _____)</p>

## EXAM-STYLE QUESTIONS

3. Study **Figure 1**, a photograph of Stratford shopping centre in East London, and **Figure 2**, a photograph of a corrie and stream in the Lake District National Park.

Figure 1



Figure 2



- a. Suggest one question that could form the basis of a human geography enquiry in the environment shown in **Figure 1**. (1)

---



---

- b. Outline **one** primary data collection technique that could be used in the environment shown in **Figure 1** to help answer this question. (1)

---



---

- c. Suggest **one** possible technique to present the data collected via the technique outlined above. (1)

---



---

- d. Suggest **one** possible risk of collecting data in the environment shown in **Figure 1**. (1)

---



---

- e. Suggest one question that could form the basis of a physical geography enquiry in the environment shown in **Figure 2**. (1)

---



---

- f. Outline **one** primary data collection technique that could be used in the environment shown in **Figure 2** to help answer this question. (1)

---



---

g. Suggest **one** possible technique to present the data collected via the technique outlined above. (1)

h. Suggest **one** possible risk of collecting data in the environment shown in **Figure 2**. (1)

4. Study **Figure 3**, 'Pebble size measured at three sites'.

a. Identify the type of graph shown. (1)

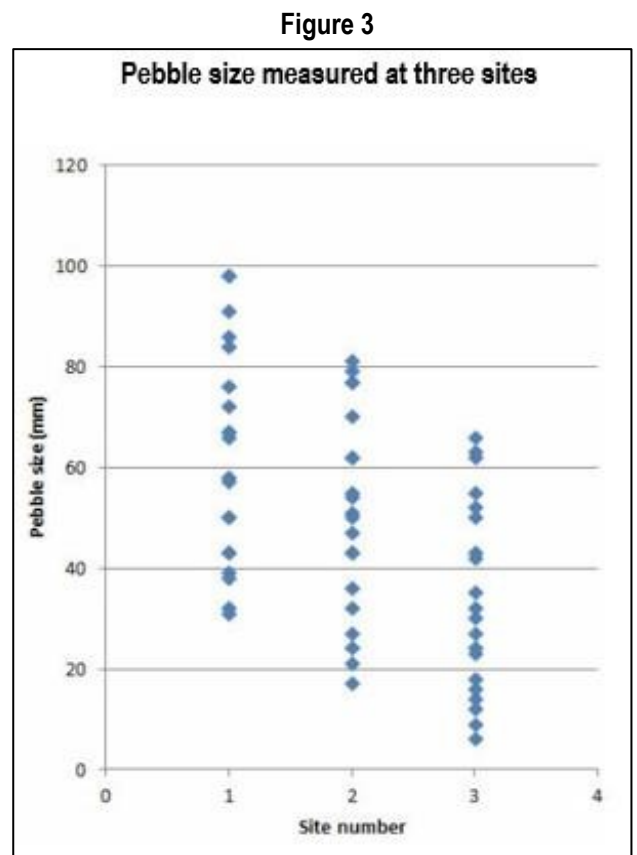
b. At which site were the greatest number of pebbles under 40mm found? (1)

c. At which site were five pebbles recorded between 20mm and 40mm in size? (1)

d. How many pebbles between 40mm and 60mm were recorded at site 3? (1)

e. Complete the graph to record three pebbles between 100mm and 120mm at Site 1. (1)

f. Describe the results shown in Figure 3. (2)



g. Identify **one** advantage of using this data presentation technique. (1)

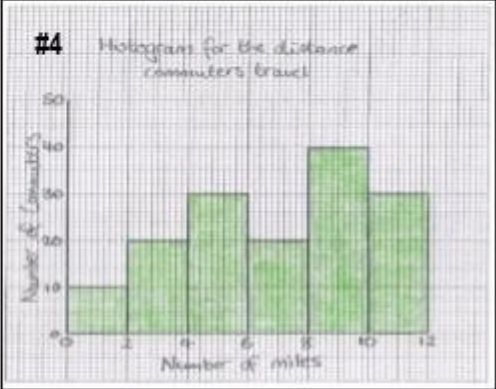
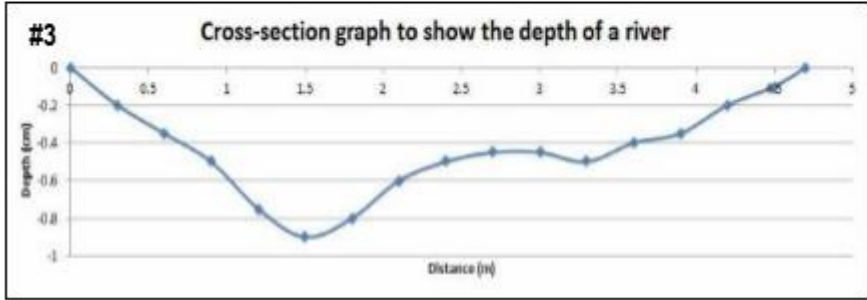
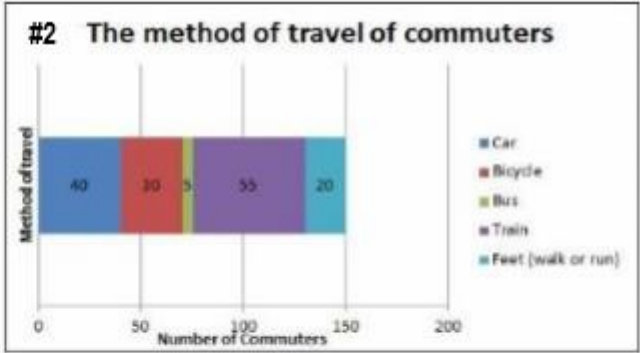
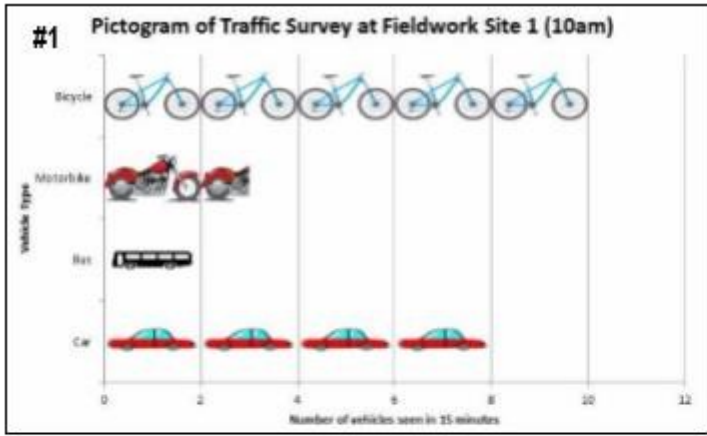
h. Suggest **one** other way in which this data could have been presented. (1)

A good way to prepare for unfamiliar fieldwork questions is to **predict** questions.

5. Predict a series of questions relating to the four graphs below. Use the **command words** and **key terms** to help you.

**Command words:** *calculate, compare, complete, describe, evaluate, identify, justify, outline, suggest*

**Key terms:** *advantage, anomaly, limitation, line of best fit, median, mean, modal class, mode, pattern, primary data collection technique, presentation, problem, range, reason, reliability, results, risk, secondary data source*



#1 \_\_\_\_\_

\_\_\_\_\_

#1 \_\_\_\_\_

\_\_\_\_\_

#2 \_\_\_\_\_

\_\_\_\_\_

#2 \_\_\_\_\_

\_\_\_\_\_

#3 \_\_\_\_\_

\_\_\_\_\_

#3 \_\_\_\_\_

\_\_\_\_\_

#4 \_\_\_\_\_

\_\_\_\_\_

#4 \_\_\_\_\_