Year 11 Revision Workbook

Paper 1: Living with the physical environment

- The challenge of natural hazards – Question 1
- The living world – Question 2
- Coastal landscapes in the UK – Question 3
- River landscapes in the UK – Question 4

The Challenge of Natural Hazards – Q1

Natural hazards pose major risks to people and property

What is a natural hazard? P.2

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What is hazard risk? P.2

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Why is the frequency and strength of natural hazards increasing? (Think about the world's population and what people are doing to make the problem worse).

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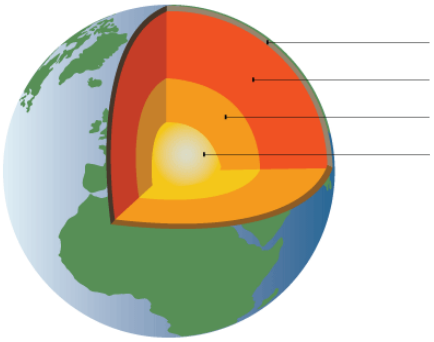
Earthquakes and volcanic eruptions are the result of physical processes p.3

Label the layers of the earth on the image below and give three differences between oceanic and continental crust:

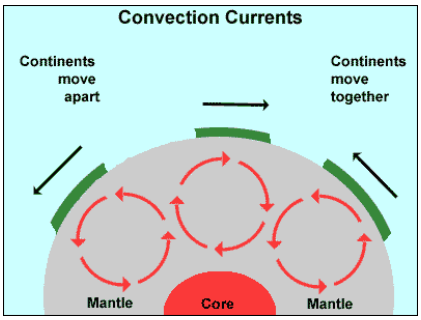


Oceanic crust	Continental crust

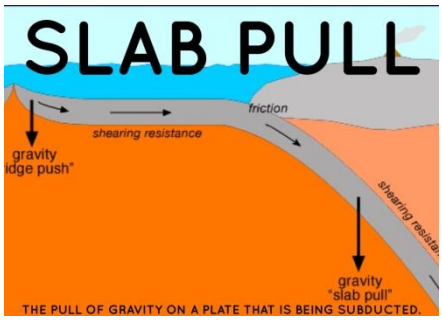
Outline the evidence that tectonic plates are moving. P.3

What are the two theories behind why tectonic plates move? P.3

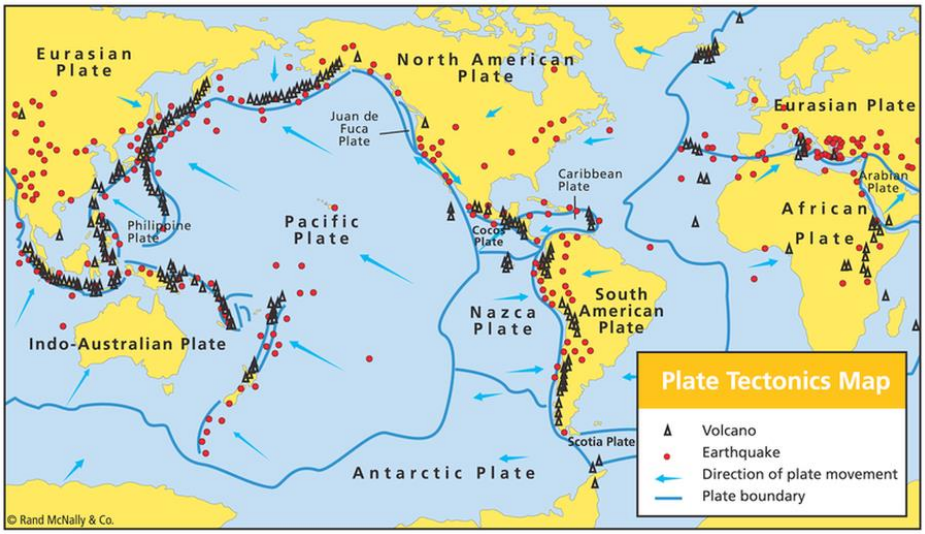
THEORY 1



THEORY 2



Describe the **global distribution** of volcanoes and earthquakes, i.e. where are they? P.4



Draw and annotate the 4 different plate margins in the boxes below. Be sure to explain why earthquakes and volcanoes occur at the plate margins. P.3

Constructive Margin	**Destructive Margin**
Conservative Margin	**Collision Margin**

The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth (i.e. effects of earthquakes are different in rich and poor countries).

What are primary and secondary effects? P.5

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What are immediate and long-term responses? P.5

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Complete the table below with 3 primary and 3 secondary effects of an earthquake and 3 immediate and 3 long-term responses to an earthquake: p.5

Primary effects	Secondary effects
Immediate responses	**Long-term responses**

Named example of an earthquake in a high income country (HIC) : Christchurch, New Zealand, 2011 p.5

Outline the causes of the Christchurch earthquake.

_____

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_____

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_____

Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS, i.e. facts that could only have happened in Christchurch, e.g. numbers, names, etc.

Primary effects	Secondary effects

Immediate responses	Long-term responses

Do you think primary effects or secondary effects were more significant in Christchurch?

_____

_____

_____

Do you think immediate or long-term responses were more significant in Christchurch? Why?

_____

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_____

Named example of an earthquake in a low income country (LIC) : Nepal 2015 p5

Outline the causes of the Nepal earthquake.

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Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS, i.e. facts that could only have happened in Haiti, e.g. numbers, names, etc.

Primary effects	Secondary effects

Immediate responses	Long-term responses

Do you think primary effects or secondary effects were more significant in Nepal? Why?

_____

_____

_____

Do you think immediate or long-term responses were more significant in Nepal? Why?

_____

_____

_____

Explain why the effects and responses were so different in Christchurch and Nepal.

The effects were so different because _____

_____

_____

_____

_____

_____

The responses were so different because _____

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_____

Management can reduce the effects of a tectonic hazard

Give 4 reasons why people continue to live in areas at risk from a tectonic hazard: p.6

- _____
- _____
- _____
- _____

What are some of the benefits of living in Iceland near lots of volcanoes? Which is the biggest benefit and why? P.6

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What is monitoring and what are the 3 Ps used to reduce the effects of earthquakes? P.6

Monitoring is _____

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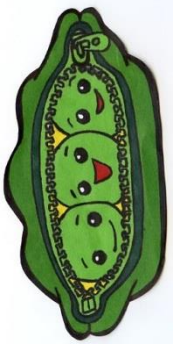

Prediction is _____

_____

Protection is _____

_____

Planning is _____

_____

Which of the above four strategies is the most effective in reducing the effects of earthquakes? Why?

_____

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_____

Which of the above four strategies is the least effective in reducing the effects of earthquakes? Why?

_____

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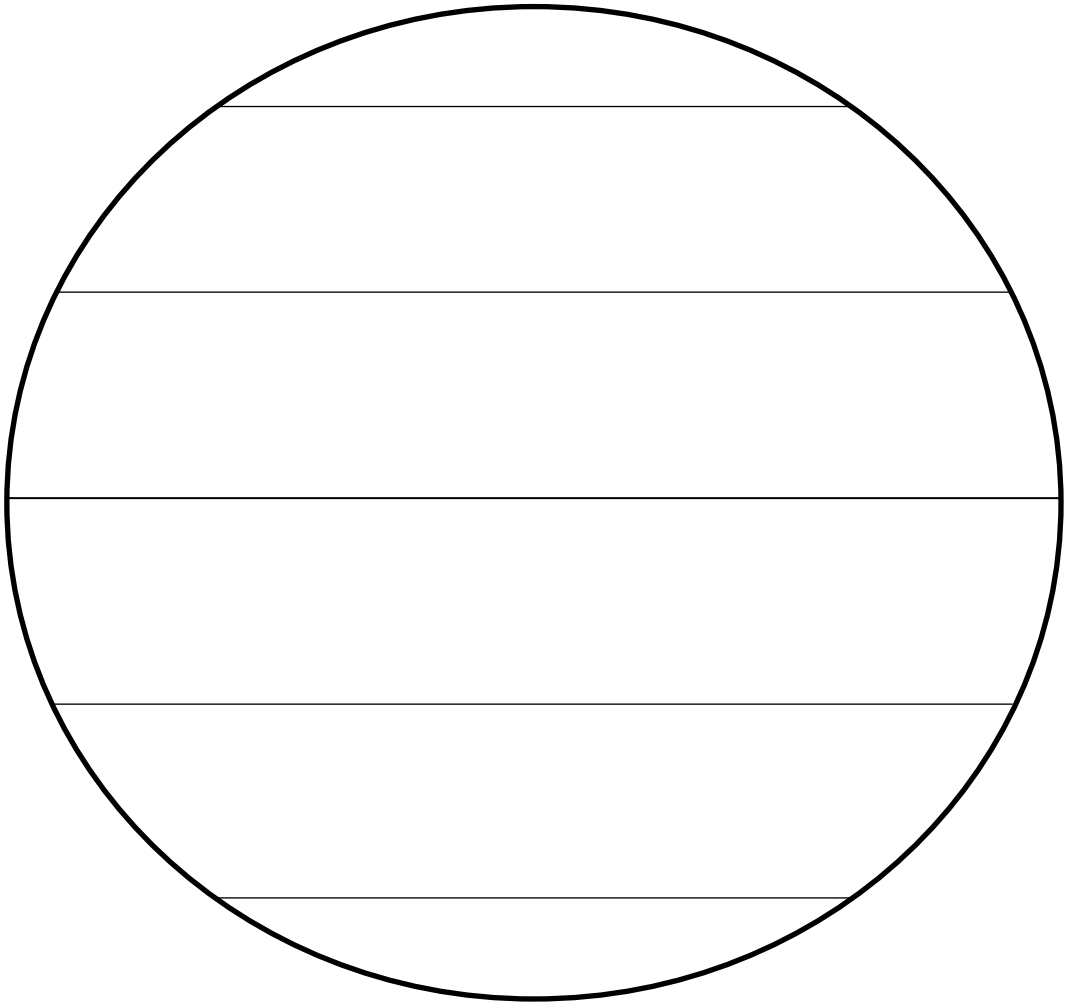
Global atmospheric circulation helps to determine patterns of weather and climate p7

On the model below, add the following features:

- 0° (equator), 30°N and S, 60°N and S and 90°N and S
- Polar, Ferrell and Hadley cells
- Areas of high and low pressure with sun and rain
- NE trade winds, SE trade winds, south-westerly winds, north-westerly winds and polar easterly winds



What is the Coriolis Effect? P7

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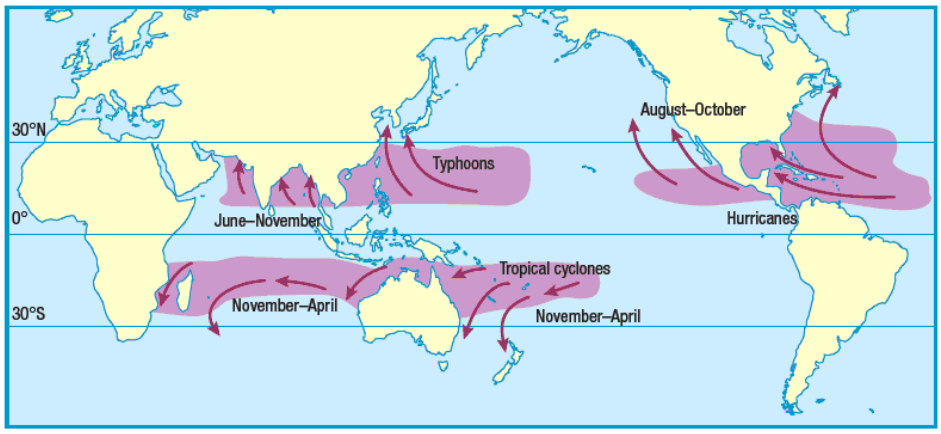
Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions



Describe the distribution of tropical storms. Use lines of latitude and key terms in your answer. P.8

Give 2 conditions needed for tropical storms to form: p.8

-
-

Write a paragraph to explain the sequence of formation of a tropical storm. P.8

Give 2 reasons why tropical storms may lose their energy: p8

-
-

Named example of a tropical storm: Hurricane Katrina 2005 p.9

Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS, i.e. facts that could only have happened in Katrina, e.g. numbers, names, etc.

Primary effects	Secondary effects

Immediate responses	Long-term responses

Do you think primary effects or secondary effects were more significant in Katrina?

_____

_____

_____

How can you monitor, predict, protect against and prepare for tropical storms? Give some examples of each in the table below: p.10

Monitor	Predict
Protect	**Prepare**

The UK is affected by a number of weather hazards

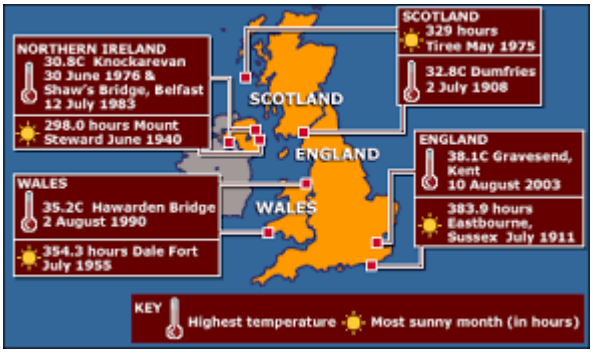
What is extreme weather? P.11

_____

_____

Annotate the photograph below describing the social, economic and environmental impacts of severe snowfall in the UK (include impacts you might not be able to see in the image):

Extreme weather events in the UK have impacts on human activity p.12



Named example of a recent extreme weather event in the UK: 2003 Heatwave

Outline the causes of the Heatwave

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_____

_____

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Complete the table below to show the social, economic and environmental impacts of the Heatwave (be specific): p12

Social impacts	Economic impacts	Environmental impacts

What management strategies were used to reduce the risk to people and the environment?

Immediate responses	Long-term responses

Give 3 pieces of evidence to prove that weather is becoming more extreme in the UK (use your timeline and include facts to show why it was extreme): p.11

- _____
  _____
- _____
  _____
- _____
  _____

Climate change is the result of natural and human factors and has a range of effects

Complete the table below to briefly explain how each factor provides evidence of climate change: p.13

Long-term evidence	Recent evidence
Ice cores:	Melting ice:
Tree rings:	Seasonal changes:
Ocean sediments:	Instrument readings:

Briefly explain how each of the following factors cause climate change: p.14

Natural causes	Human causes
Orbital changes:	Use of fossil fuels:
Volcanic activity:	Agriculture:
Solar output:	Deforestation:

Add 6 labels onto the map below to show the global effects of climate change on people and the environment (they could be positive or negative): p.15

Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change) p.16

What is the definition of mitigation?

_____

_____

_____

What is the definition of adaptation?

_____

_____

Complete the table below to show how we can mitigate and adapt to climate change and briefly outline how each one helps to reduce the effects of climate change: p.16

Mitigation methods	Adaptation methods

What are the advantages and disadvantages of mitigation and adaptation?

Method	Advantages	Disadvantages
Mitigation		
Adaptation		

The Living World – Q2

Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components

An example of a small scall ecosystem: Hene Centre Pond

Complete the key terms list below by adding the correct definitions: p.17

- Ecosystem: _____
  _____
- Biotic components: _____
- Abiotic components: _____

Describe the ecosystem in Sutton Park p.18

_____
_____
_____
_____
_____

Complete the table below with the correct definitions and give an example for each that would be found in a freshwater pond: p.17

Term	Definition	Example
Producers		
Consumers		
Decomposers		
Food chain		
Food web		
Nutrient cycling		

Complete the table below outlining the location and characteristics of each biome: p.19

Global ecosystem	Location	Characteristics
Tropical rainforest		
Desert		
Polar		
Deciduous and coniferous forests		
Temperate grasslands		
Mediterranean		
Tropical grasslands		
Tundra		

Tropical rainforest ecosystems have a range of distinctive characteristics

Where are tropical rainforests found? P.20

_____

_____

What is the climate like?

_____

_____

_____

_____

Why is the temperature constantly high in the rainforest?

_____

_____

Why is the rainfall high?

_____

_____

Why does the amount of rainfall vary throughout the year?

_____

_____

Give 2 reasons why the soils in tropical rainforests are infertile:

- _____

_____

- _____

_____

Annotate the photograph below to describe and explain how plants have adapted to the rainforest: p.21

Explain 3 animal adaptations that enable species to survive in tropical rainforests:

- _____
_____
_____
- _____
_____
_____
- _____
_____
_____

Deforestation has economic and environmental impacts p.23

A case study of a tropical rainforest: Amazon, Brazil

What are the causes of deforestation in the Amazon Rainforest? Complete the table below to outline each of the causes:

Cause	Information
Subsistence and commercial farming	
Logging	
Road building	

Mineral extraction	
Energy development	
Settlement and population growth	

What are the impacts of deforestation? P.23

How does deforestation lead to soil erosion?

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How does deforestation contribute to climate change?

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Complete the table below to show how deforestation can have both economic gains and economic losses: p.23

Economic gains for the country	Economic losses for the country

Tropical rainforests need to be managed to be sustainable p.24

Rainforests need to be managed sustainably so that we can still use valuable resources but without causing long-term damage for future generations. Complete the table below outlining how rainforests can be managed sustainably – include specific facts where possible:

Sustainable strategies	How do they work?
Selective logging	
Afforestation	
Ecotourism	
International agreements	

Hot environments (Deserts) have a range of distinctive characteristics

Where are deserts located p.25

What are desert soils like? P.25

How have plants and animals adapted to the physical conditions of these hot environments? Give examples in the table below: p,26

Animal / plant	Adaptation	How does it help it to survive?
Camel		
Fenex Fox		
Plants / Cacti		

Development of cold environments creates opportunities and challenges

A case study of hot environment: Thar

Complete the table below describing the opportunities in the Thar: p.27

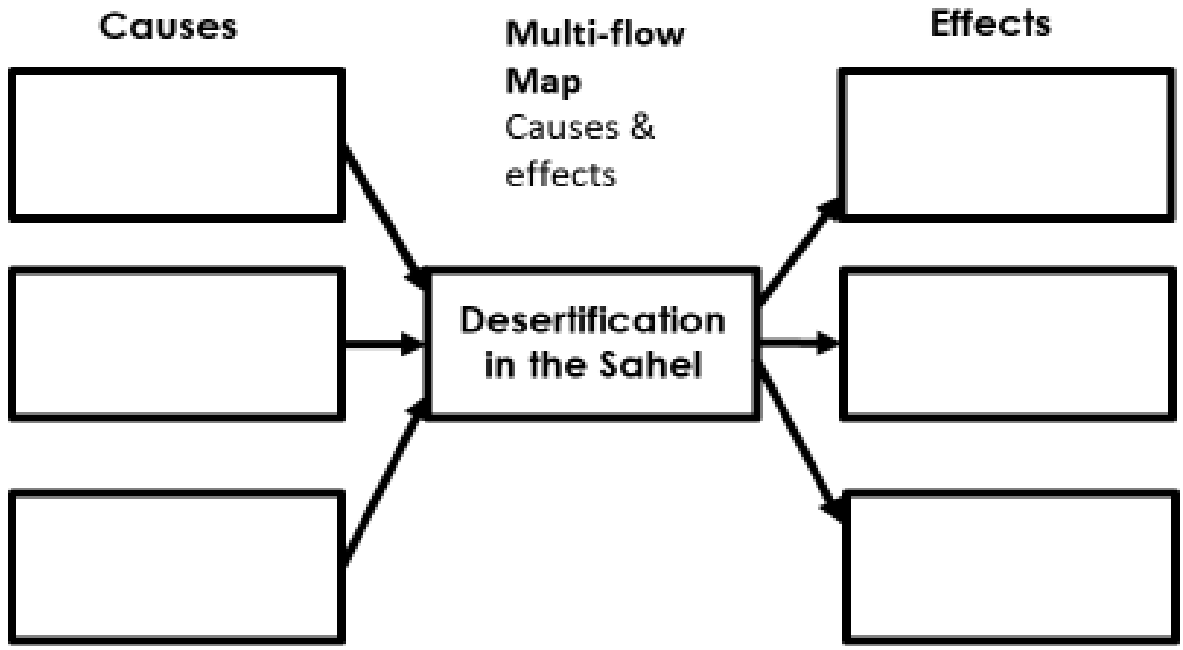
Mineral extraction	Energy developments	Farming	Tourism

Similarly, below, complete the table describing the challenges of developing the Thar: p.27

Extreme temperature	Inaccessibility	Lack of water

Hot environments are at risk from desertification

What is desertification: P28



Method to reduce Desertification	What is it?
Reducing Livestock	
Stone Lines (Magic Stones or bunds)	
Planting Trees (afforestation)	
Technology	Example:

Complete the table discussing showing the solutions to desertification. P29

Which is the best solution and why

_____

_____

_____

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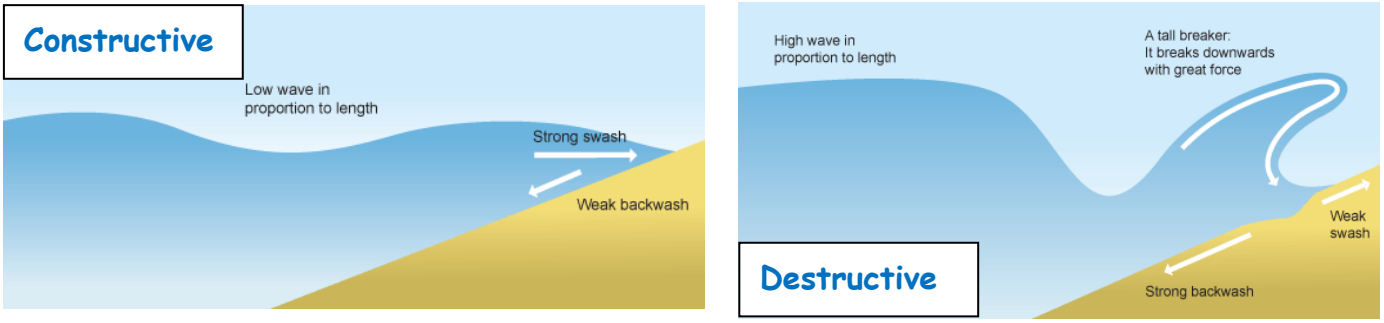
Coastal Landscapes in the UK – Q3

The coast is shaped by a number of physical processes

What causes a wave? P31

What is the fetch? P.31

There are two types of waves: constructive and destructive. Complete the table below to show the characteristics of each wave using the image to help you: p.31



Wave characteristic	Constructive wave	Destructive wave
Wave height		
Wave length		
Type of wave (plunging or spilling)		
Strength of swash		
Strength of backwash		
Beach sediment – gain or loss		

Why do you think the backwash is often weaker on a pebbly beach?

What is weathering? P.34

What is **mechanical weathering**?

What is **chemical weathering**?

What is mass movement?

Complete four simple diagrams and four definitions to show the different types of mass movement:p.31

Rockfall	**Landslide**
Mudflow	**Rotational slip**

Complete the table below describing the four types of erosion found at the coast: p.30

Hydraulic action	Abrasion
Attrition	Solution

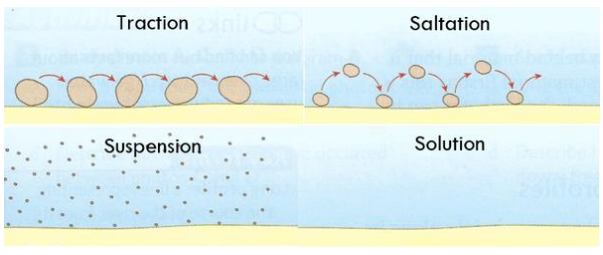
What do we mean by differential erosion mean?

_____

_____

Do the same in the table below to describe the four types of transportation found at the coast: P.30

Traction	Saltation
Suspension	Solution



Draw an annotated diagram in the box below to explain the process of longshore drift: p.33

What is coastal deposition? P.33

_____

Give 3 reasons why coastal deposition occurs: p.33

- _____
  _____
- _____
  _____
- _____

Distinctive coastal landforms are the result of rock type, structure and physical processes

Outline the two factors that influence coastal forms:

Rock type: _____

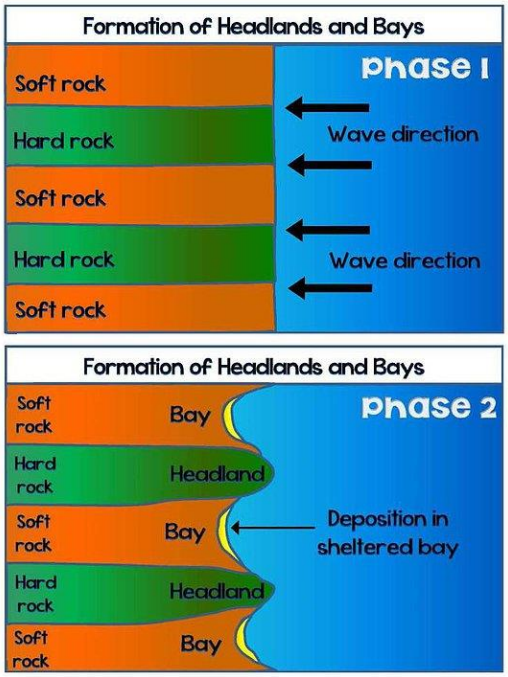
_____

Geological structure: _____

_____

Landforms resulting from erosion p.32

Headlands and Bays



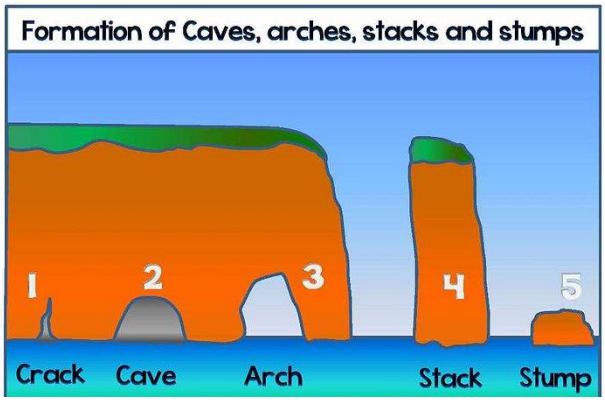
Explain how headlands and bays form using the diagram to help you. Remember to include key terms where necessary.

Cliffs and wave-cut platforms p.32

Complete annotated diagrams below to explain how a wave-cut platform is created:

Caves, arches, stacks and stumps p.32

Annotate the diagram below to explain the formation of caves, arches, stacks and stumps. Number your annotations to sequence the formation.



Landforms resulting from deposition

Beaches Describe the formation of beaches P.34

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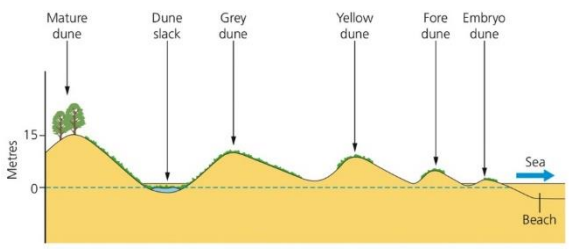


Sand dunes p.34

Explain the formation of sand dunes

_____

_____

_____

Spits P33

Spits are long, narrow fingers of sand or shingle jutting out into the sea. A bar is a spit that has grown across a bay and a tombolo is a spit that reaches an island.

Draw an annotated diagram in the box below to explain the formation of spits:

An example of a section of coastline in the UK: Dorset Coast, South UK P35

Describe the geology of the Dorset Coast. P.35

_____

_____

Describe the features found along the Dorset Coast

Old Harry	Lulworth Cove
Chesil Beach	Swanage Bay

Different management strategies can be used to protect coastlines from the effects of physical processes P.36

Hard engineering: _____

_____

Soft engineering: _____

_____

Managed retreat: _____

_____

Complete the table below showing the advantages and disadvantages of hard and soft engineering methods:

Method	Advantages	Disadvantages
Sea wall		
Groynes		
Rock armour		
Gabions		
Beach nourishment		
Dune regeneration		
Managed retreat		

An example of a coastal management scheme in the UK: Lyme Regis P.37

Why does the Holderness Coast need protecting?

_____

_____

_____

_____

List 5 strategies used in at Lyme Regis to protect the coastline:

- _____
  _____
- _____
  _____
- _____
  _____
- _____
- _____

What are the positive and negative impacts of the defences on the area?

Positive impacts	Negative impacts

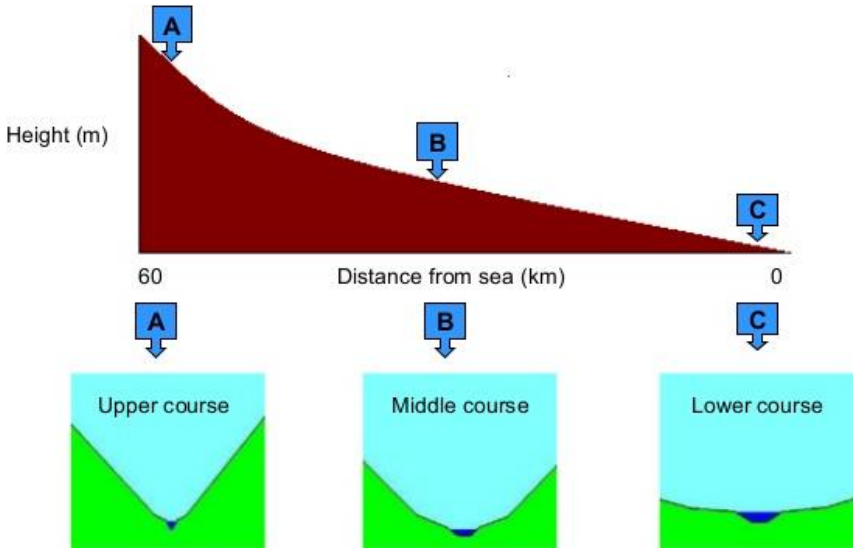
What groups of people might be in conflict over these defences and why? P.37

Groups	Conflict

River Landscapes in the UK – Q4

The shape of river valleys changes as rivers flow downstream p.38

Using the images below, complete the description of the shape of the long and cross profiles of a river valley:



In the upper course the long profile is _____ and _____. The cross profile is narrow and v-shaped. P.38

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Complete the definitions of vertical and lateral erosion: p.38

- Vertical erosion is _____
- Lateral erosion is _____

Distinctive fluvial landforms result from different physical processes

Features formed by erosion in the upper course of a river p.39

Explain the formation of **interlocking spurs**

_____

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Draw annotated diagrams below to explain the formation of **waterfalls and gorges**: p39

A river flows over a band of hard rock on top of soft rock.	

Features formed by erosion and deposition in the middle course of a river p.40

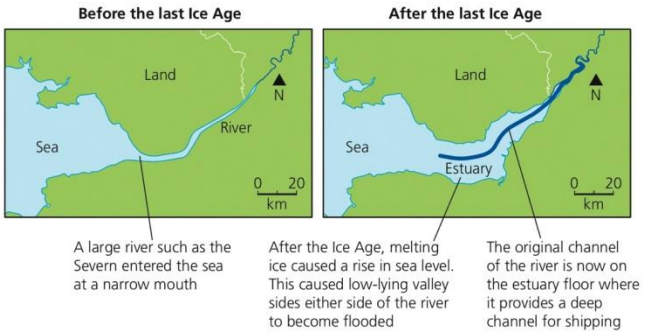
Draw annotated diagrams below to explain the formation of **meanders and ox-bow lakes**:

Features formed by deposition in the lower course of a river p.41

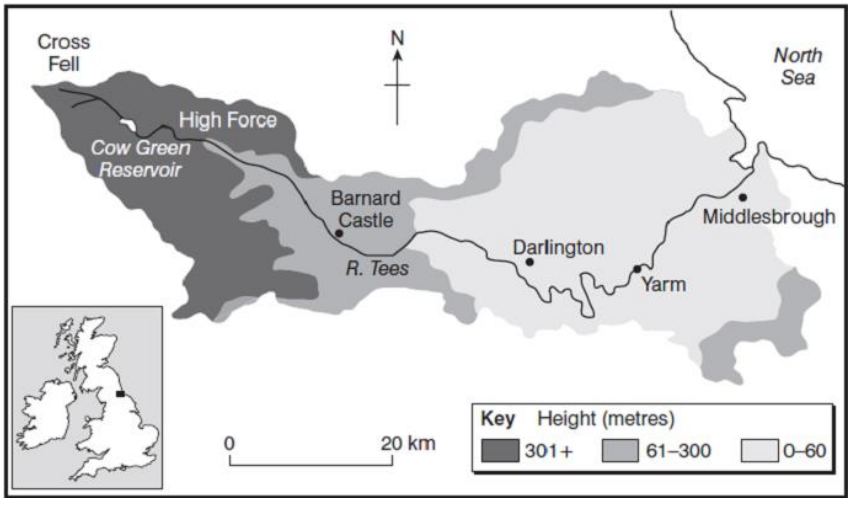
Draw annotated diagrams below to explain the formation of **levees and floodplains:**

A river is contained within its banks (normal)		

Using the diagrams below, explain the formation of **estuaries**: p.41



An example of a river valley in the UK: River Tees, North-east England



Describe the features of the River Tees (waterfalls, gorges, meanders, levees and estuaries). Include place names. DO NOT explain how the features were formed, just say what they are like. P.42

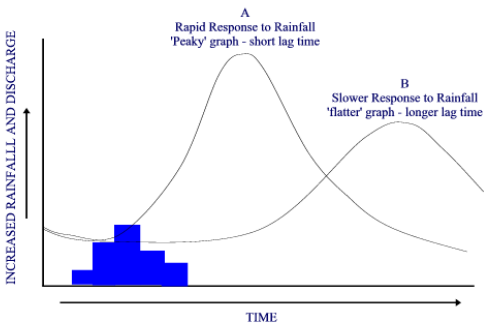
Different management strategies can be used to protect river landscapes from the effects of flooding

List some physical and human causes of flooding – make sure you can explain how each leads to flooding: p.43

Physical/Natural	Human

State the characteristics of the two hydrographs below. An example has been done for you.

p.43



A	B
Impermeable rock	Permeable rock

What is hard and soft engineering? P.44

Hard engineering is _____

_____

Soft engineering is _____

_____

Complete the table below showing the advantages and disadvantages of hard and soft engineering: p.44

Method	Advantages	Disadvantages
Hard: dams and reservoirs		
Hard: straightening embankments		
Hard: Flood relief channels		
Soft: Flood warnings and preparation		
Soft: Floodplain zoning		
Soft: planting trees and river restoration		

An example of a flood management scheme in the UK: Somerset 2014

Briefly outline why Somerset needed a flood management project: P45

_____

_____

_____

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_____

List 4 of the strategies used in Somerset to reduce the risk of flooding: p.45

- _____
- _____
- _____
- _____

Complete the table below showing the advantages/successes and disadvantages/failures of the flood management scheme: p.45

	Successes	Failures
Social		
Economic		
Environmental		

Overall, to what extent do you think the flood management scheme in Somerset was a success? Why?

_____

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