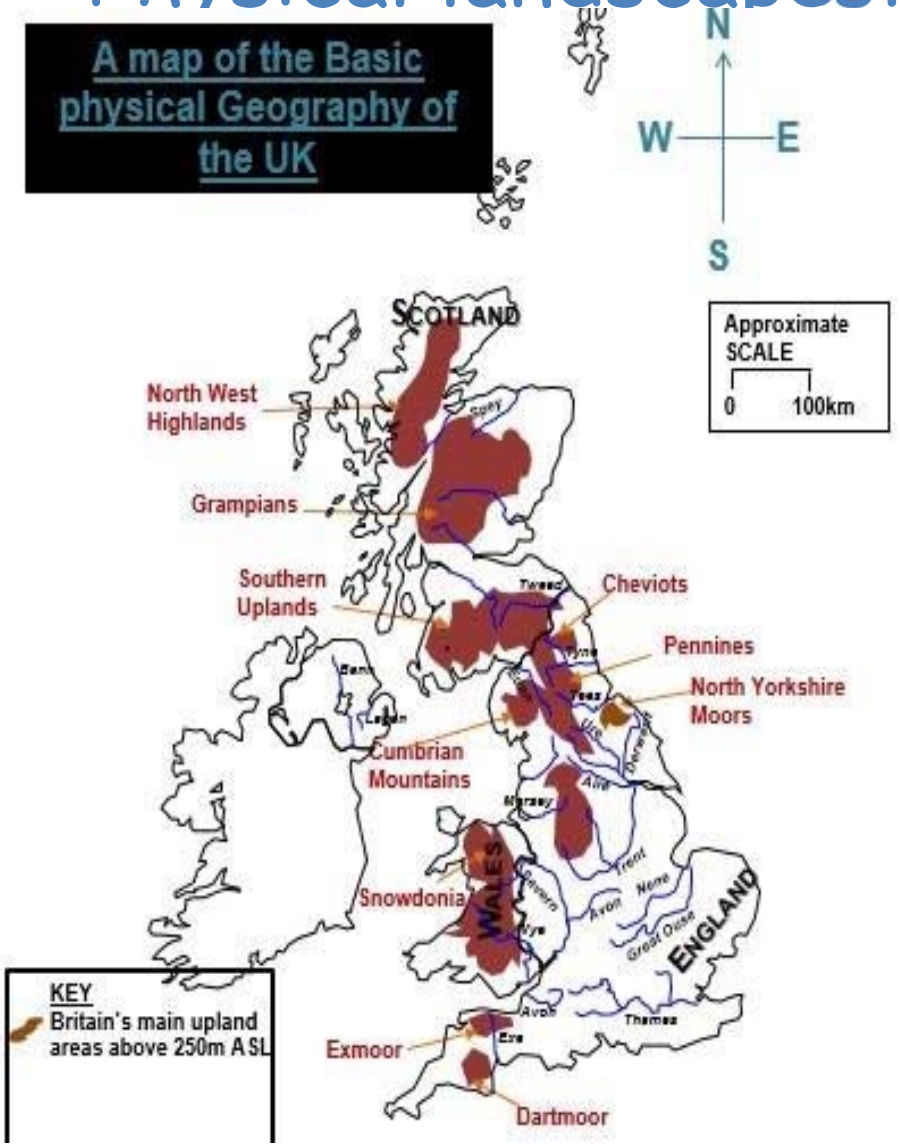
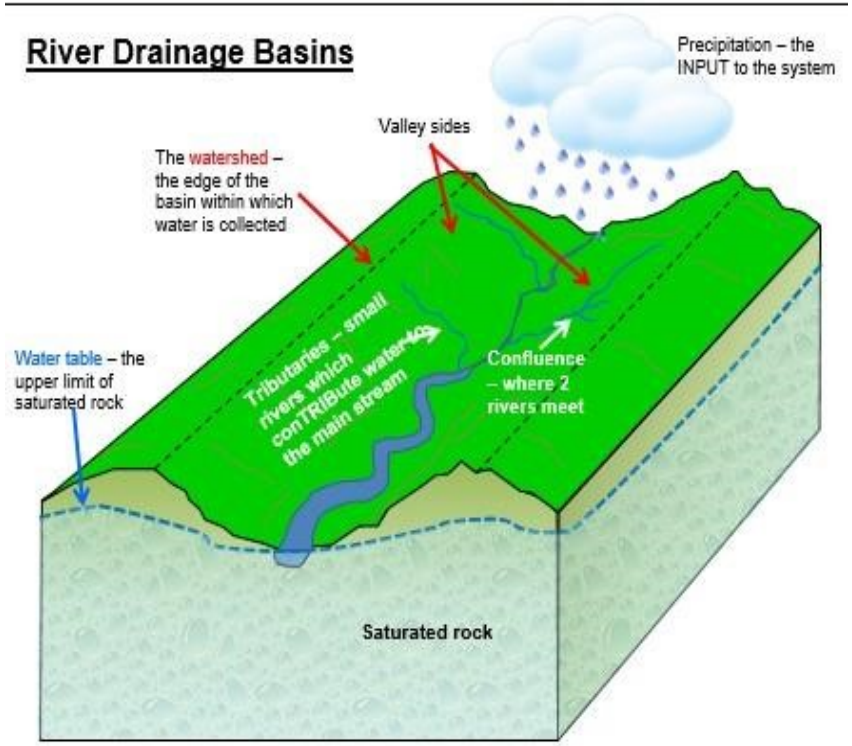
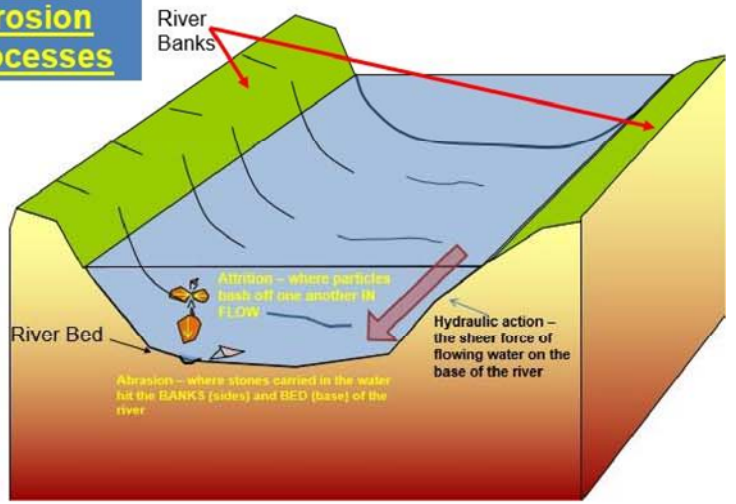
Physical landscapes - River landscapes in the UK





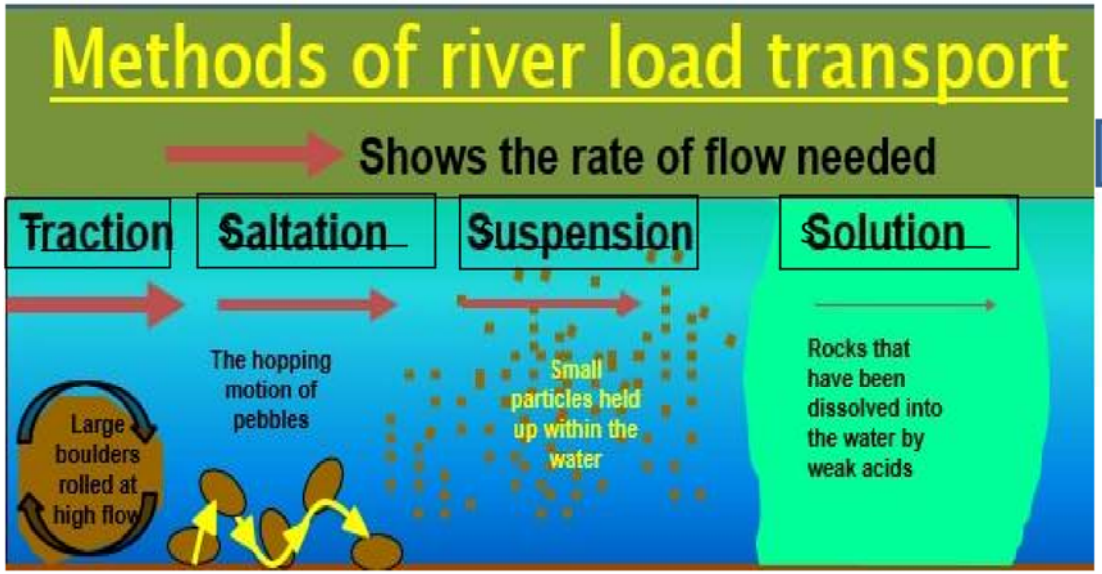
The shape of river valleys changes as rivers flow downstream - PROCESSES

River Erosion Processes



Erosion

Abrasion or corrasion	
Attrition	
Hydraulic Action	
Solution or corrosion	

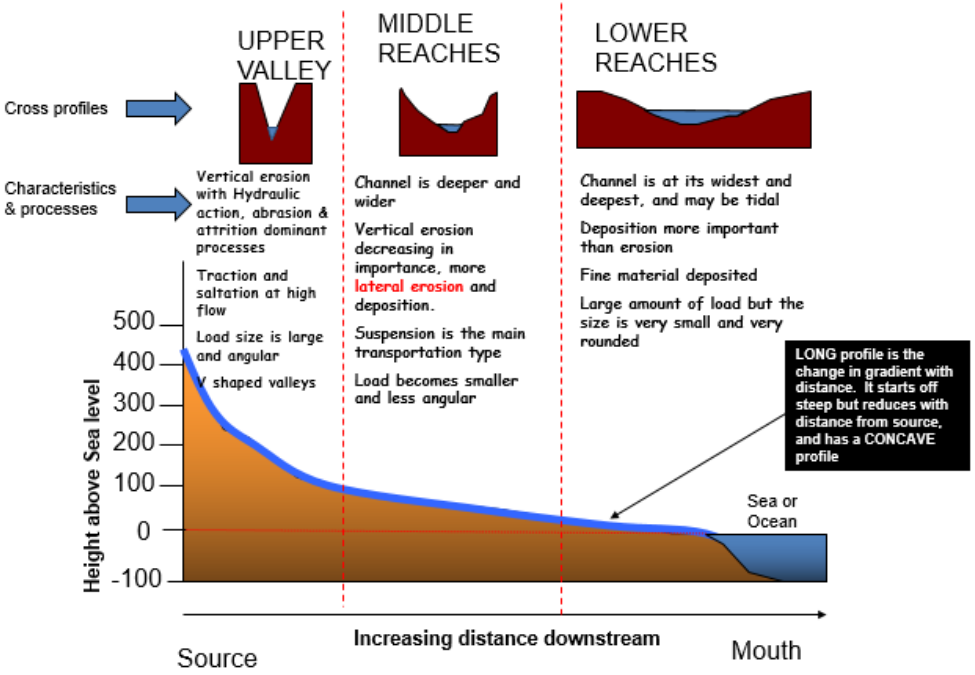


Deposition Why does deposition occur?

Describe reasons why a river's energy decreases.

Challenge: What is the Hjulstrom Curve?

Long and cross profiles on a TYPICAL river



Where does most of the vertical erosion take place? Why?

Where does most the Lateral erosion take place? Why?

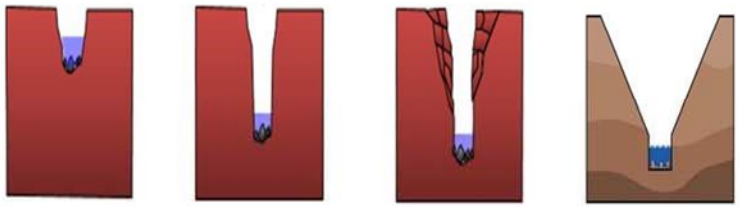
Explain what happens to the discharge and velocity as the river travels downstream,

	EROSION		TRANSPORTATION	DEPOSITION
UPPER COURSE				
MIDDLE COURSE				
LOWER COURSE				

What are the features of a river?

Upper / Middle / Lower?	Feature	Description
	Floodplain	
	Plunge pool	
	Ox-bow lake	
	Waterfall	
	Meander	
	V-shape valley	

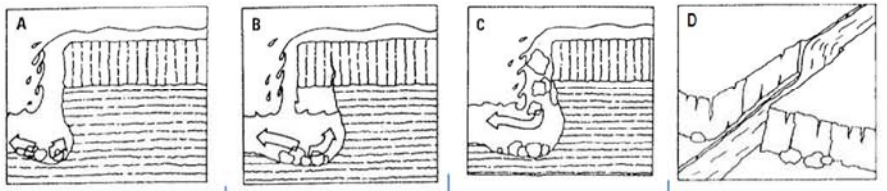
How is a V-Shape Valley formed?



1.	2.	3.	4.

Upper, middle and lower - Draw, label and describe the formation of the features located along the

UPPER

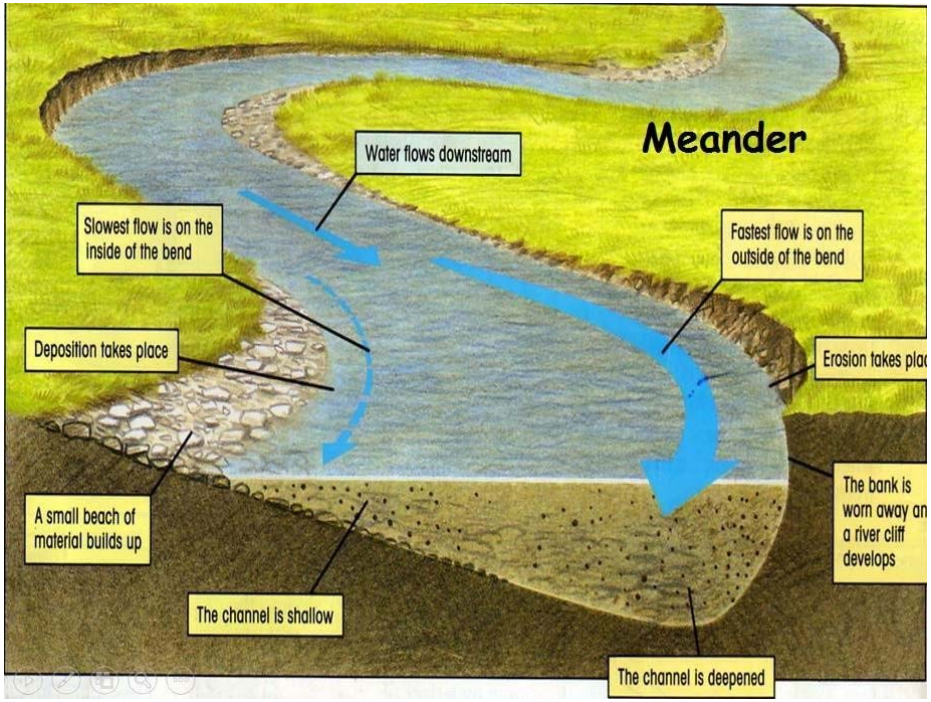


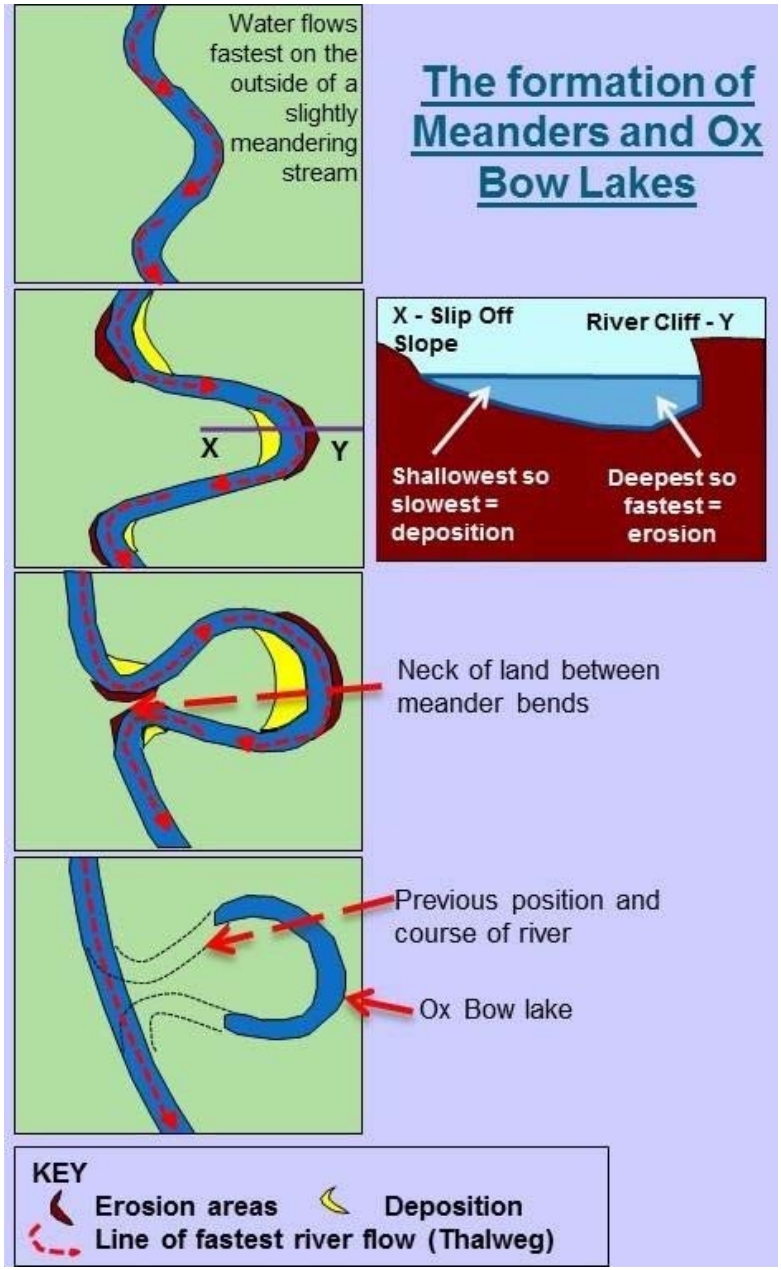
Using pg 155 annotate the diagram showing how Rapids are formed.

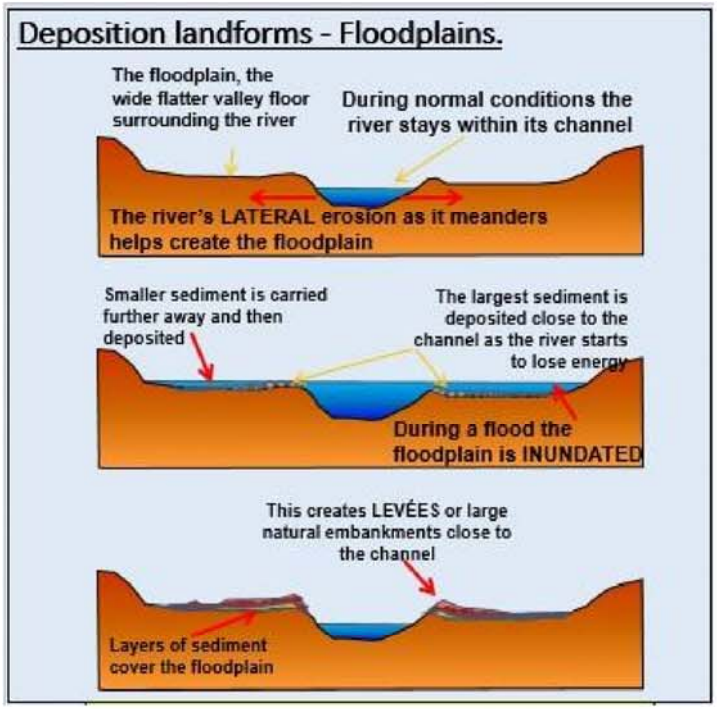
MIDDLE

As water travels from the upper river section to the _____ river section. There is less pull from _____, therefore there is less _____ erosion and more _____ erosion. The sideways movement of water causes it to flow_____ on the outside bend, as such the water has more _____and erosion Takes place forming a _____, the water slows down on the _____ which means the water has _____ energy, and so _____ occurs forming a _____.

Missing words: ***Gravity, Middle, lateral, vertical, energy, faster, inside, bend, River Cliff, deposition, less, slip off slope.***







Lower –Floodplains and Levées

Firstly, floodplains are formed by a combination of both _____ (where land is worn away) and _____ (where sediment is laid down by the river) processes.

_____ erosion (where the river erodes from side to side across the floodplain) has the effect of _____ the floodplain over hundreds of years.

Deposition is also important. When the river _____, it spreads out over the floodplain.

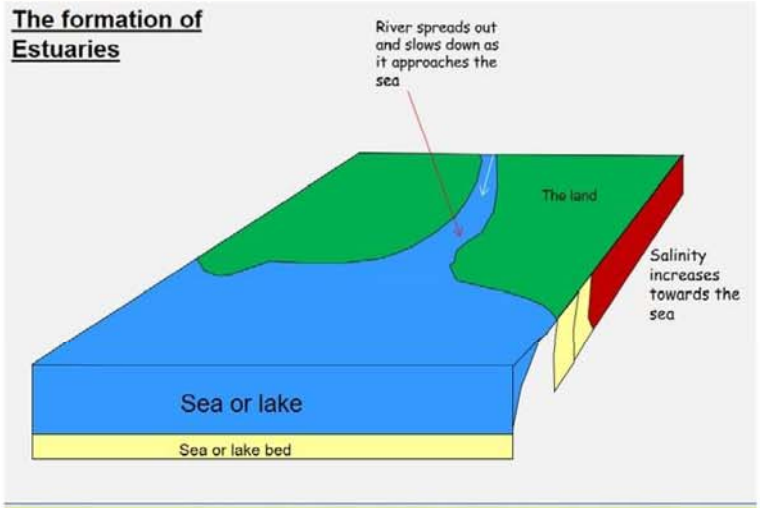
Next, this slows the river down as the river is in contact with more _____.

This causes deposition of _____, the _____ rocks and the most sediment is dropped closest to the river channel, the finer material is dropped _____ away.

Finally, this creates a _____ floodplain and levées.

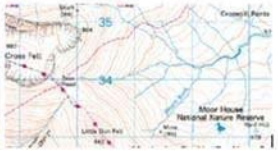
Words to use:
widening, deposition, floods, Lateral, levees, friction, largest, erosion, further, sediment, layered

The formation of Estuaries



Draw and annotate the diagram the formation of estuaries.

Casestudy – River Tees, an example of a river valley

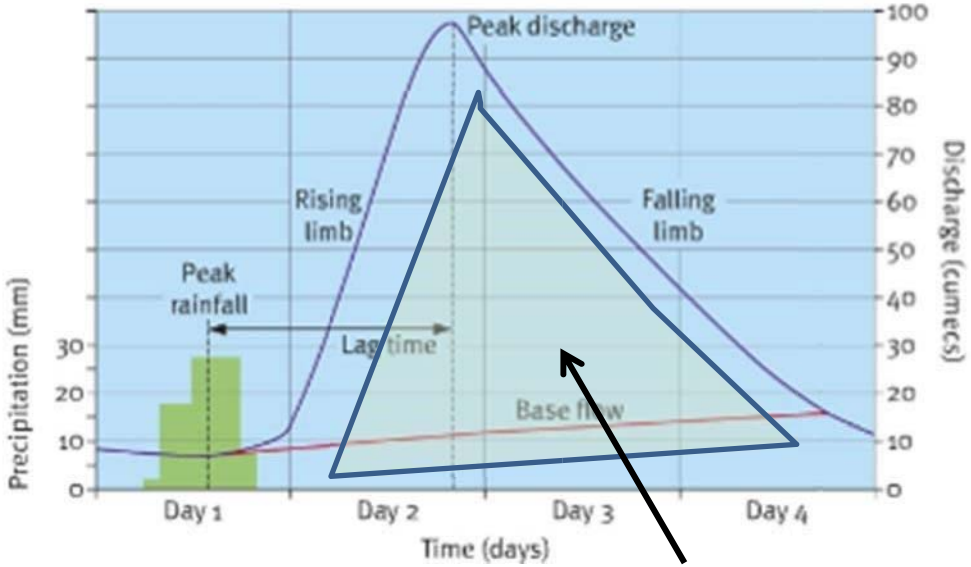


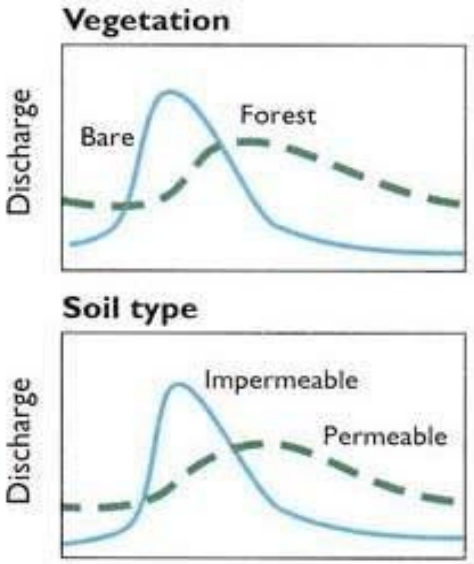
Using your notes and research online - Add detailed notes about all of the landforms and processes and human interferences with the river. GCSEPOD will help.

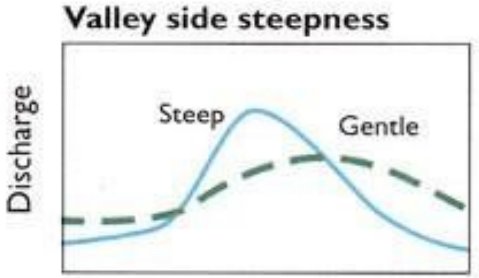
Causes of flooding

Human Causes	Physical Causes

Storm hydrographs







What is a storm hydrograph? _____

_____

Graph definitions

Base flow –

Rising limb –

Peak discharge -

Falling limb –

Lag time –

Why are storm hydrographs important?

_____

_____

Different factors can affect the shape of a storm hydrograph and affect its lag time:

Vegetation

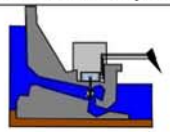
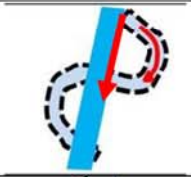
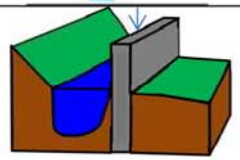
Geology

Rainfall

Land use

Relief

Hard and soft engineering of river environments

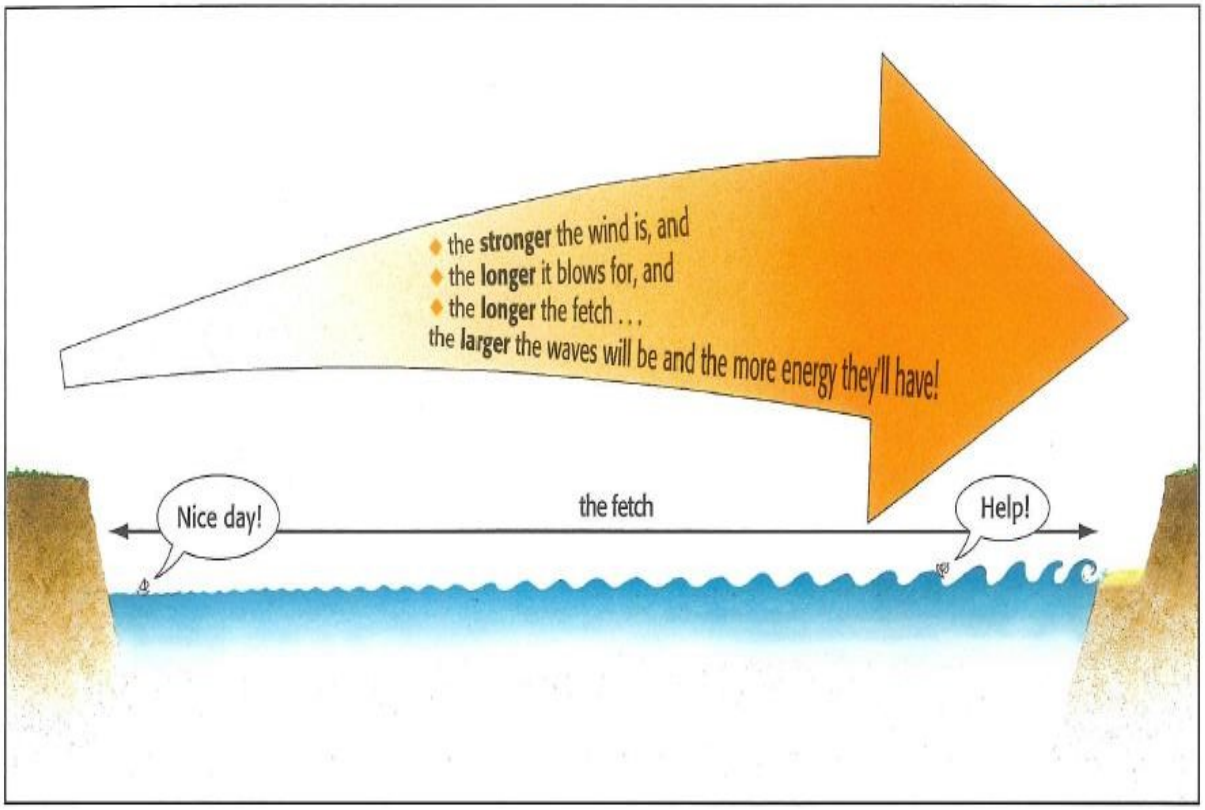
	Definition	Scheme	How it works	Diagrams or examples	Costs (negatives)	Benefits (positives)
Hard engineering		Dams and reservoirs				
		Straightening meanders				
		Embankments				
		Flood relief channels				
Soft engineering		Flood Warnings and preparation				
		Flood plain zoning		 Land uses increase in value as distance from river increases		

Coasts and Waves

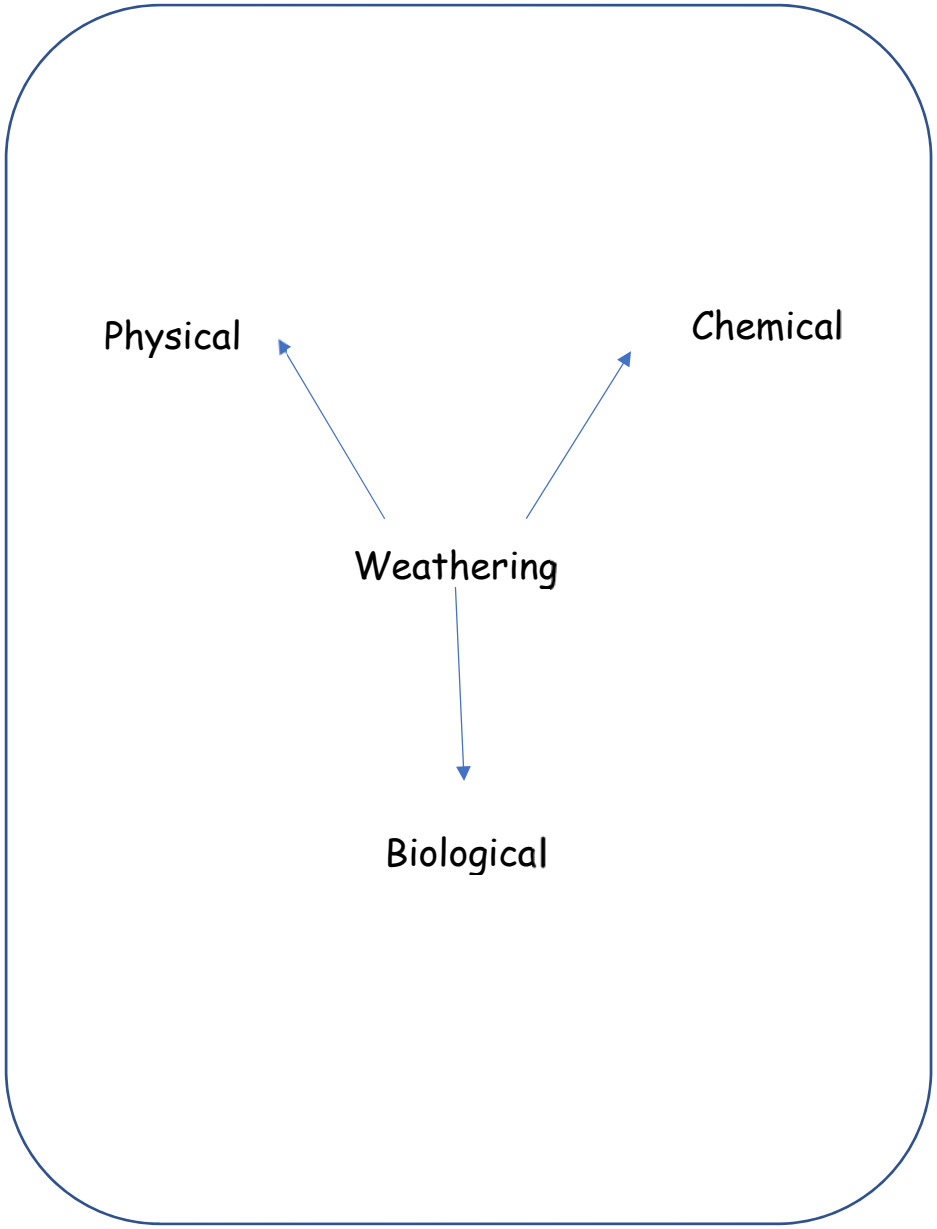
The coast is a narrow zone where the land, sea and atmosphere meet. It is constantly changing. Some coastlines are being rapidly eroded (broken down) while others are being slowly constructed (built up).
Waves are made by the transfer of energy from the wind blowing over the surface of the sea. The stronger the wind blows, the larger the waves are that are formed. The larger the wave, the more energy it contains.

What causes waves?

Waves are caused by the **wind** dragging on the surface of the water.
The length of water the wind blows over is called its **fetch**.



Why are some waves bigger and stronger than others?
(4 marks)



Erosionprocesses

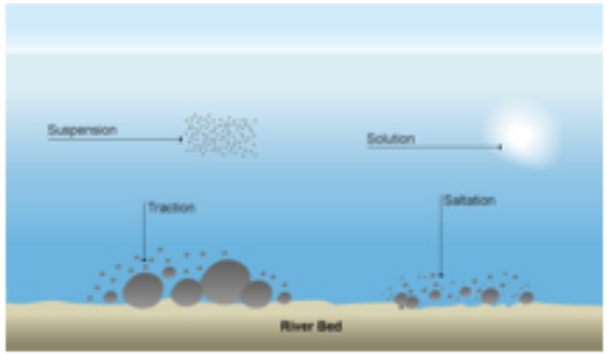
#1 Hydraulic action

#2 Abrasion

#3 Attrition

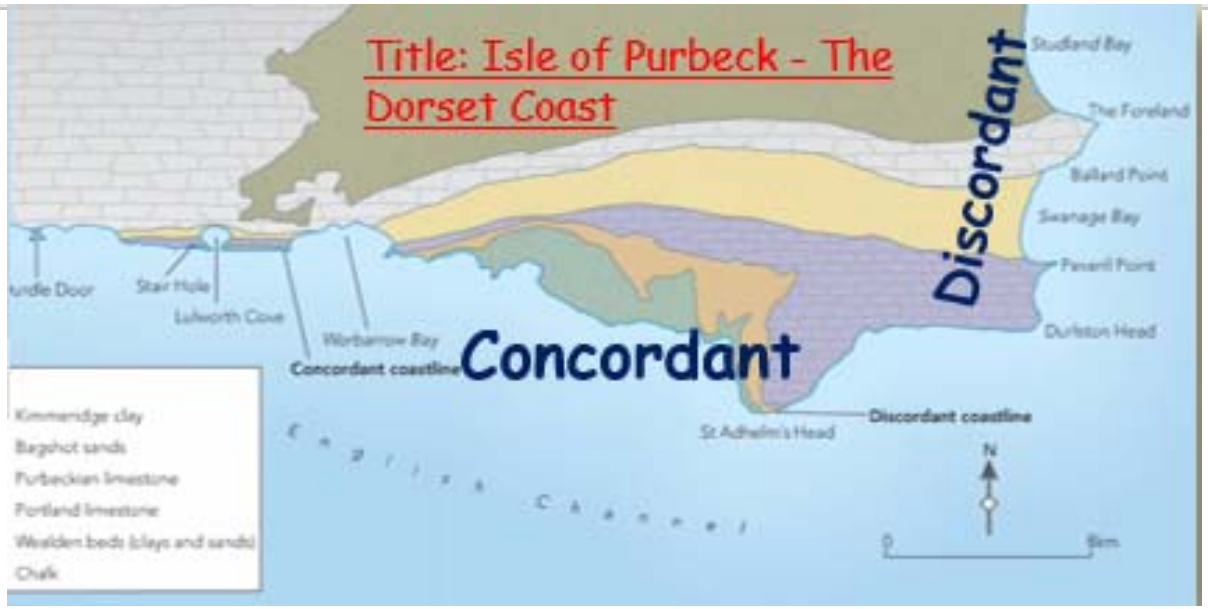
#4 Solution

Transport



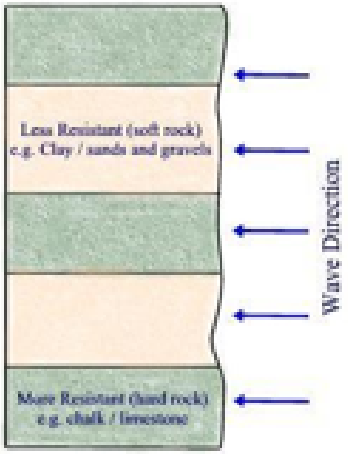
Why does deposition occur?

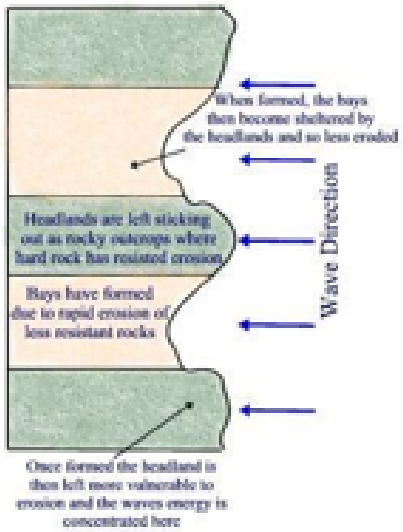
Draw a labelled diagram of longshore drift explaining how it transports sediment along the coast.

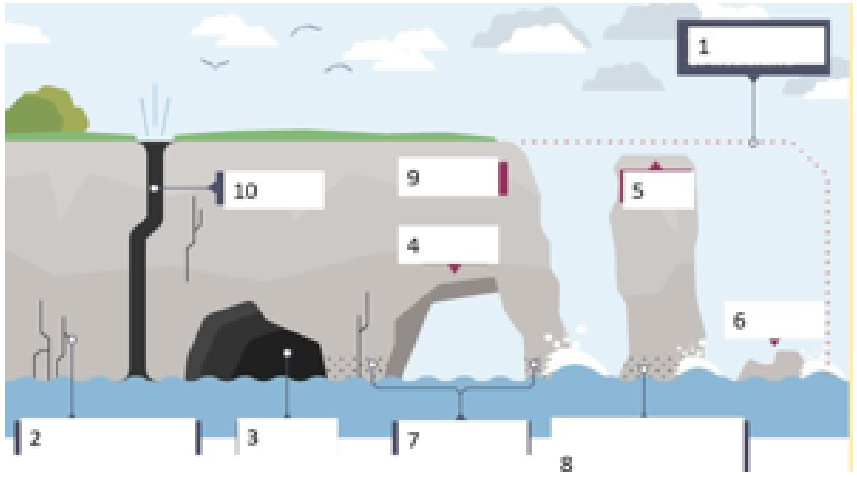


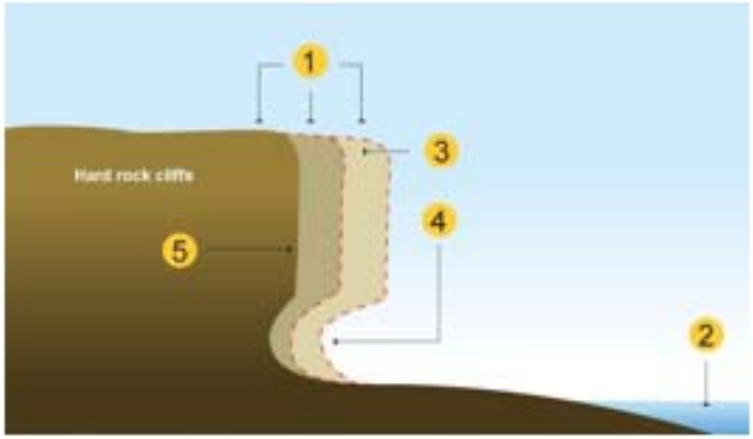
Discordant coastline

The Formation of Headlands and Bays









Cliff retreat and wave-cut platform formation

Draw a labelled diagram of a spit and explain how it is formed:

Sand dune formation:

Concordant coastline


HARD ENGINEERING
SOFT ENGINEERING
Coastal management - Has it been a success or can conflicts be caused?
Coastal management
Types and their pros and cons

Holderness coastline

How are they protecting the coast?

Success or failure?

OR

Lyme Regis coastline

How are they protecting the coast?

Success or failure?