Component 2 – Paper 2 exam for Topics 4, 5, and 6

Topic 4: The UK's Evolving Physical Landscape

COASTS AND RIVERS

Instructions

1. You will need to use either your revision guide, the knowledge organisers that are on the Show My Homework post, or the department's website: http://www.fulstonmanorgeoggers.weebly.com

2. You are to read carefully the task set on each page and then complete the task in full sentences where expected.

3. If you get stuck, remember the three Bs – Book, Brain, Boss!

Book - Check your resources first (revision guide, knowledge organiser, website)

Brain – Think it through, you may really already know but are doubting yourself

Boss – email your teacher, message them on Show My Homework, or on Google Classroom for support

UK Physical Landscapes

Key words

Upland area _____

Lowland area _____

Relief of the land _____

Describe the location of the upland areas (brown) (Use compass directions, as well as countries of the UK)

_____

_____

_____

_____

_____

_____

_____

Describe the location of the lowland areas (dark green) (Use compass directions, as well as countries of the UK)

_____

_____

Rock types of the UK

Describe the key differences between the different rock types found in the UK.

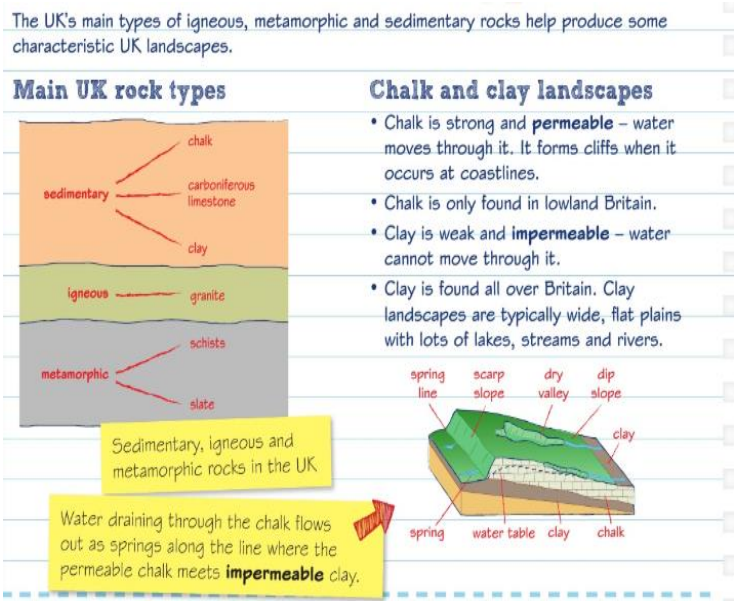
_____

_____

_____

_____

_____



Coastal Landscapes

Waves

What causes a wave?

_____

_____

_____

_____

What is the fetch?

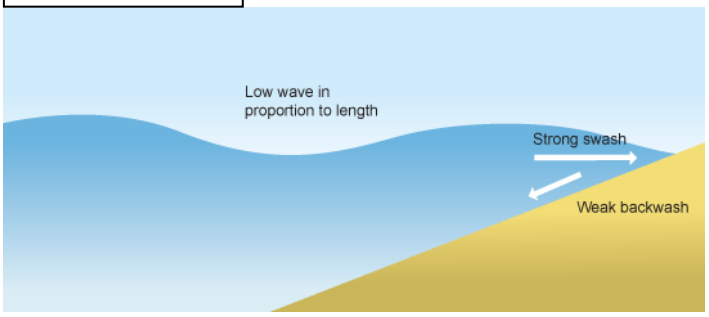
_____

_____

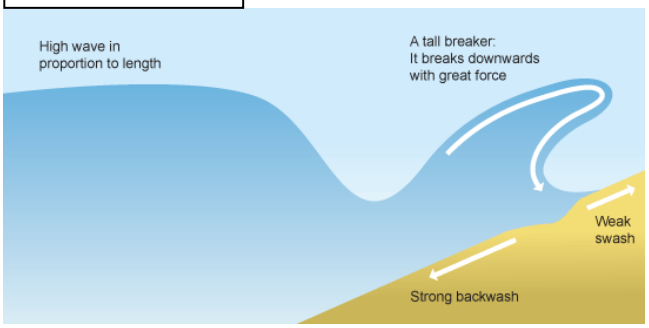
Types of waves

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:

Constructive



Destructive



Wave characteristic	Constructive wave	Destructive wave
Which has the highest waves?		
Strength of swash		
Strength of backwash		
Beach sediment – gain or loss		

Weathering

What is weathering?

_____

What is mechanical (physical) weathering?

_____

_____

What is chemical weathering?

_____

_____

What is mass movement?

_____

_____

Complete the simple diagrams and definitions to show the different types of mass movement:

Fall (Eg Rockfall)	**Slide (Eg landslide)**
Slump	

Erosion

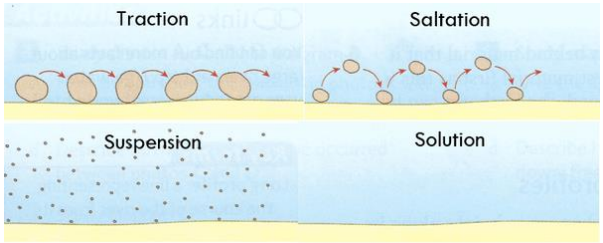
Complete the table below describing the four types of erosion found at the coast:

Hydraulic action	Abrasion
Attrition	**Solution**

Transportation

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

Traction	**Saltation**
Suspension	**Solution**



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

Deposition

What is coastal deposition?

_____

_____

Give 2 reasons why coastal deposition occurs:

- _____

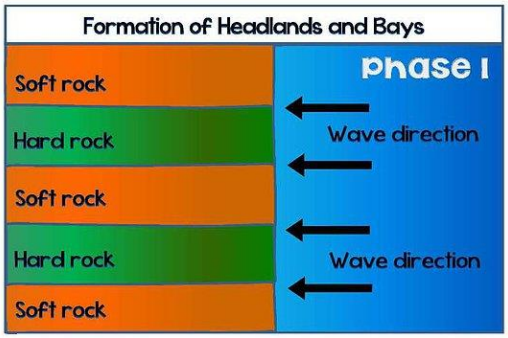
  _____
- _____

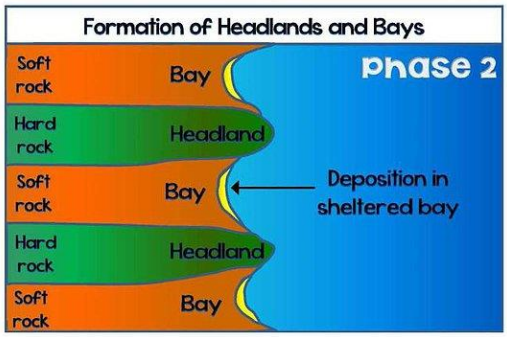
  _____

Landforms created by erosion

Landforms at the coast are the result of rock type (hard and soft) as well as physical processes (Erosion or deposition)

Headlands and Bays





Give an example in the UK

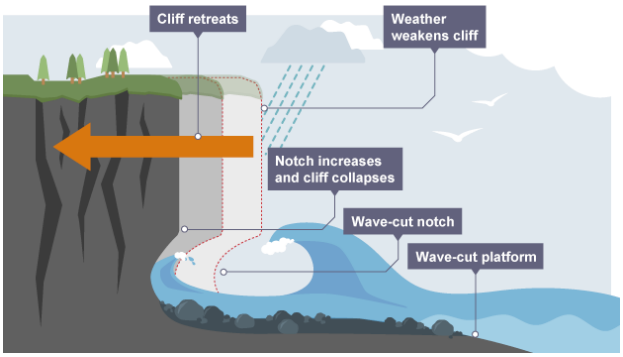
Explain how headlands and bays form

(using the diagram to help you. Remember to include key terms where necessary)

Challenge!

What is wave refraction?

Cliffs and wave-cut platforms



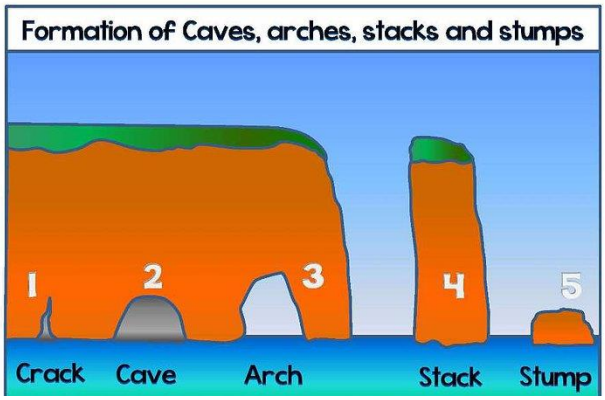
Complete annotated diagrams below to explain how a wave-cut platform is created *(Remember to include the erosional processes!)*

Step 1	Step 2
Step 3	Step 4

[Caves, cave, arches, stacks and stumps]

Name an example in the UK

Explain how each one causes the next. The first one has been done for you *(Remember to include the erosional processes!)*



A crack opens up in a headland due to hydraulic action opening up a weakness in the rock

Landforms created by deposition

Landforms at the coast are the result of rock type (hard and soft) as well as physical processes (Erosion or deposition)

Beaches

Beaches are deposits of sand and shingle at the coast. Explain how both sandy and pebbly beaches form:

Sandy: _____

_____

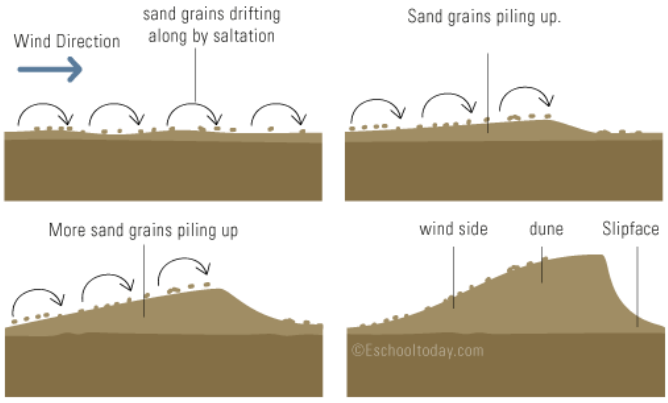
_____

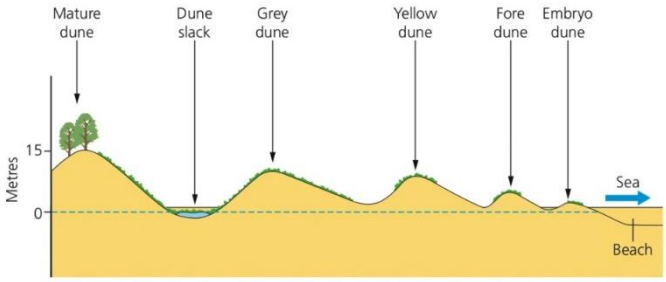
Shingle/pebble: _____

_____

_____

Sand dunes





Explain the formation of sand dunes

Step 1 _____

_____

Step 2 _____

_____

Step 3 _____

_____

Step 4 _____

_____

Spits and Bars

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.

Example in the UK _____

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

Drawing (1)	Explanation
Drawing (2)	Explanation
Drawing (3)	Explanation
Drawing (4)	Explanation
Drawing (5)	Explanation

Managing Coastal Erosion

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

Hard engineering:

_____

_____

Soft engineering: _____

_____

_____

Managed retreat: _____

_____

Complete the tables explaining how these methods work and colour code into hard and soft

Sea Wall 	**Groynes** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

Rock Armour 	**Gabions** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

Beach nourishment 	**Sand dune regeneration** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

Cliff stabilisation	
How does it work?	
Advantages	Disadvantages

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

Why does the Lyme Regis need protecting?

_____

_____

_____

_____

List 4 specific strategies used in the Lyme Regis to protect the coastline:

1. _____
2. _____
3. _____
4. _____

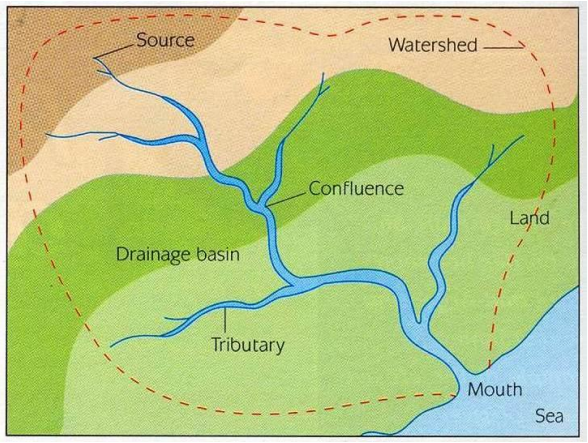
What are the positive and negative impacts of the defences on the area?

Positive impacts	Negative impacts

River Landscapes

Features of a river

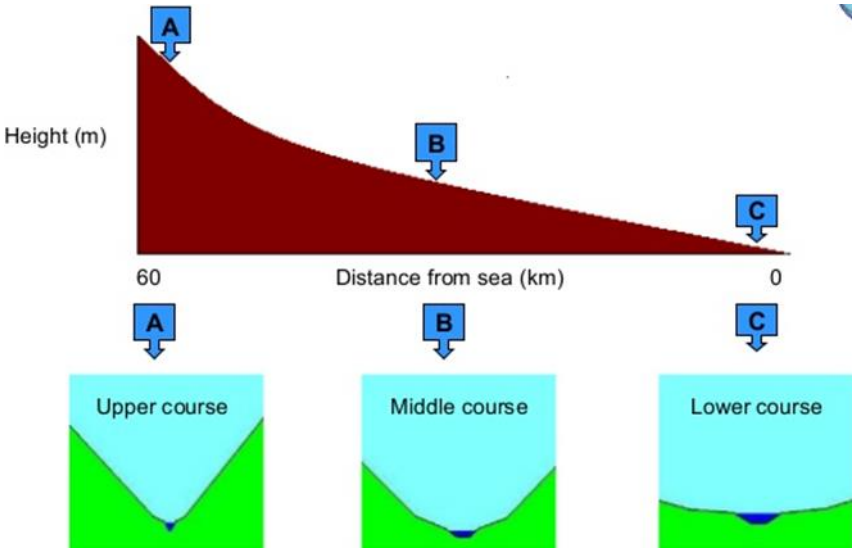
Annotate on the definitions of the key words of a drainage basin



The long profile

The shape of river valleys changes as rivers flow downstream

The long profile of the river is



_____

_____

The shape of it is _____There are three parts to the river

_____

_____

_____

The cross-profile

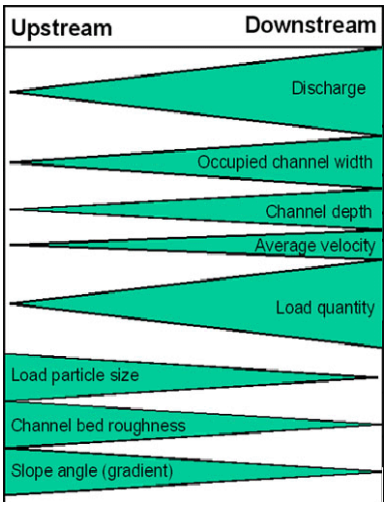
The cross profile of the river is _____

_____

The cross-profile of the river changes. Describe what happens to the width and the depth

	Width	Depth	Main process found here
Upper course			
Middle course			
Lower course			

Bradshaw Model



The Bradshaw model looks at the changes in the river from the upper course to the lower course

What things are expected to increase?

- ✓
- ✓
- ✓
- ✓
- ✓

What things are expected to decrease?

- ✓
- ✓
- ✓

River discharge increases because _____

_____

Velocity of the river increases because _____

_____

Particle size decreases because _____

_____

Upper Course of the river

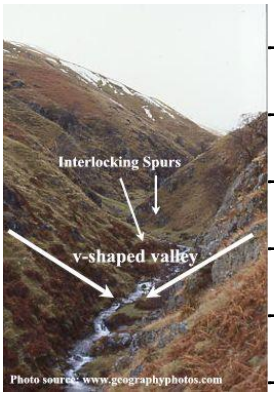
The main process here is _____. As well as the 4 types of erosion. Erosion can go vertically (Cutting downwards) or horizontally (laterally – Going sideward). It is these processes that change the shape of the cross profile from the source (Upper course) to the mouth (lower course).

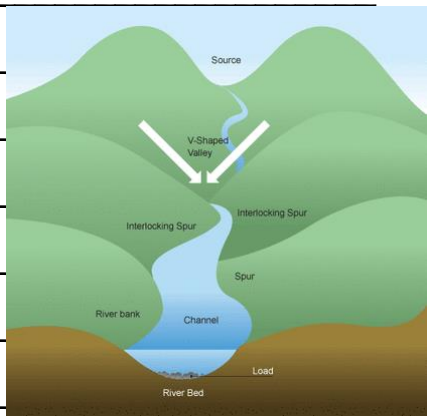
Complete the table below describing the four types of erosion found in a river:

Hydraulic action	Abrasion
Attrition	Solution

V shaped Valleys and interlocking spurs

Explain the formation of V shaped valleys and interlocking spurs *(don't forget to include erosional processes!)*

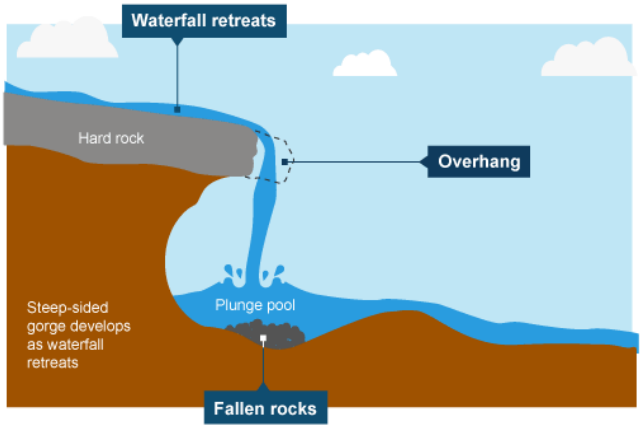




Waterfalls and gorges

Explain and use diagrams below to explain the formation of waterfalls and gorges: *(don't forget to include erosional processes!)*

Step 1	
Step 2	
Step 3	
Step 4	
Step 5	



Middle Course of the river

Features are formed by erosion and deposition in the middle course of a river. Much of the material eroded in the upper course gets transported through the middle course.

Describe the four types of transportation in a river:

Traction	Saltation
Suspension	Solution

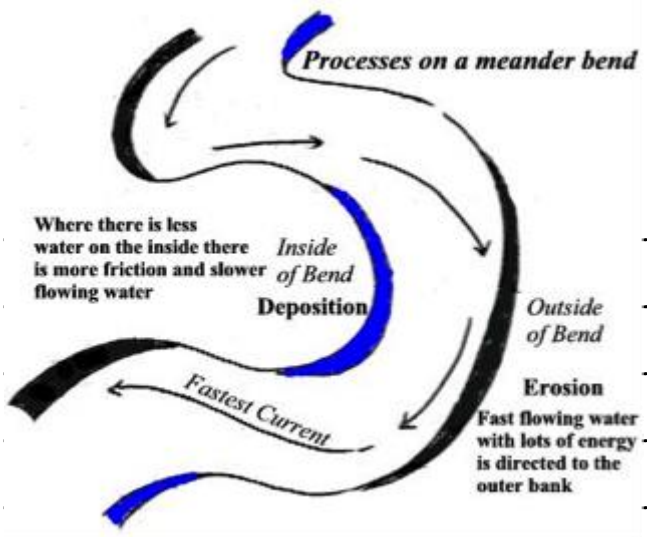
Meanders

Meanders are _____

Their cross profile is asymmetrical (not the same on both sides).

Draw the cross section and label with the key words

- ✓ Outside of the river
- ✓ Inside of the river
- ✓ Fastest flow of water (Thalweg)
- ✓ Centrifugal force (Force making the water go to the outside)
- ✓ River cliff
- ✓ Slip off slope



Using the diagram to help, explain the formation of a meander

Ox Bow Lakes

Draw and explain the formation of ox-bow lakes:

Step 1	
Step 2	
Step 3	
Step 4	

Lower course of the river

The river here is its widest and deepest. The river here also flows the fastest, but where it meets the sea, the different types of water (fresh vs salty) causes the river to deposit the material.

Material is also deposited when the river floods.

Levees and floodplains

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

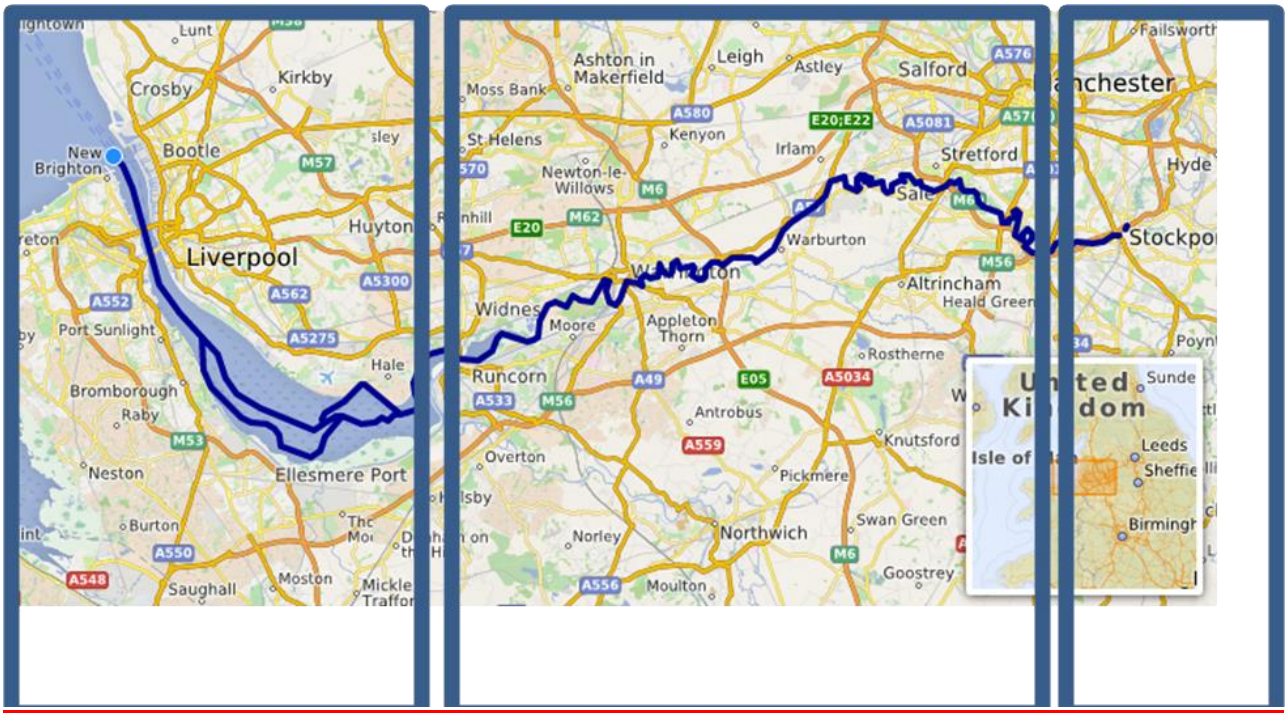
When a river floods it…			

Estuaries

These are found where rivers meet the _____. The two waters are different densities and salt quantities and mix together to create a type of water known as _____ water. Here, _____ happens and sediment is first deposited to form _____. Overtime sediment can grow on them and _____ grow in parts of the estuary.

Words include salt marsh, mudflats, deposition and brackish

An example of a river valley in the UK: River Mersey



Identify which section of the river is the upper, middle and lower (Write them underneath)

What places are in each of the sections?

Upper _____

Middle _____

Lower _____

What landforms would be found in each of the sections?

Upper _____

Middle _____

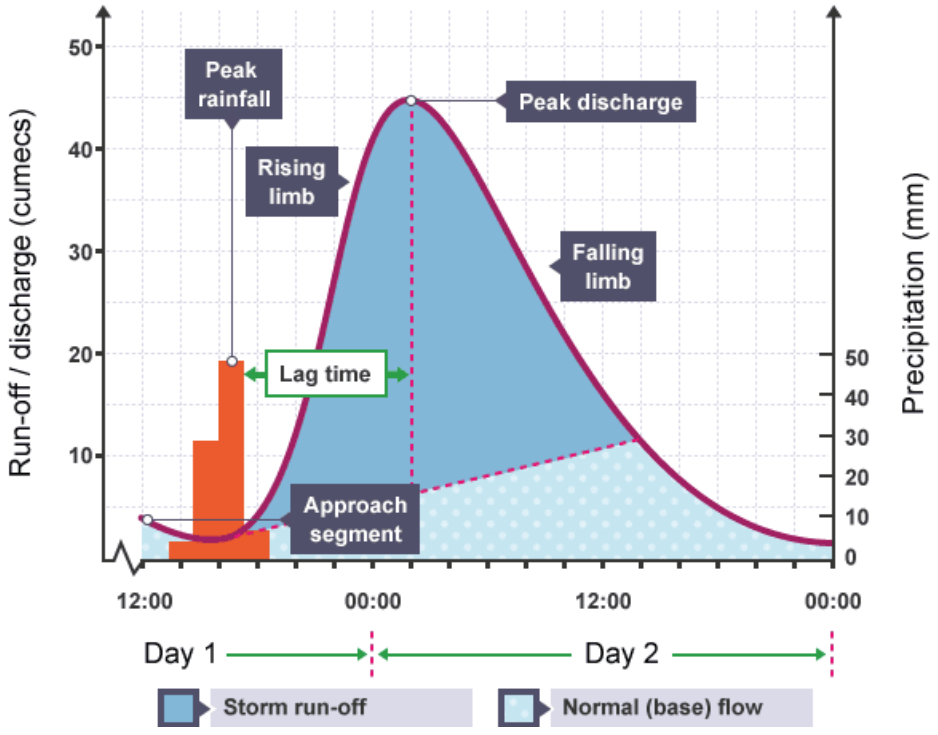
Lower _____

River flooding

Explain some physical and human causes of flooding – make sure you can explain how each one leads to flooding:

Physical/Natural	Human
Heavy rainfall =	Urbanisation =
Rock type =	Deforestation =
Gradient of land =	River management =

Flood hydrographs



Discharge _____

Lag time _____

How would you describe the shape of this hydrograph? _____

Is this river likely to flood? _____

Flood management

What is hard and soft engineering?

Hard engineering is _____

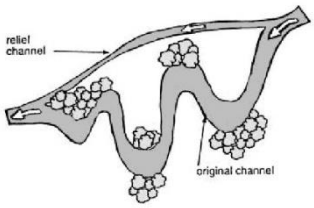
_____

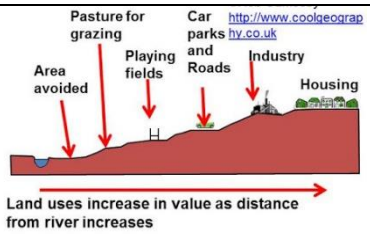
Soft engineering is _____

_____

Complete the tables explaining how these methods work and colour code into hard and soft

Dams/ reservoirs 	**Levees** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

Flood relief channels 	**Dredging** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

Afforestation 	**Flood plain zoning** 
How does it work?	How does it work?
Advantages	Advantages
Disadvantages	Disadvantages

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

Why did Somerset need a flood management project?

_____

_____

_____

_____

Describe 4 of the strategies used in Somerset to reduce the risk of flooding:

- _____
- _____
- _____
- _____

Complete the table below showing the costs (disadvantages) and benefits (advantages) of the scheme.

	Social	Economic	Environmental
☺			
☹			