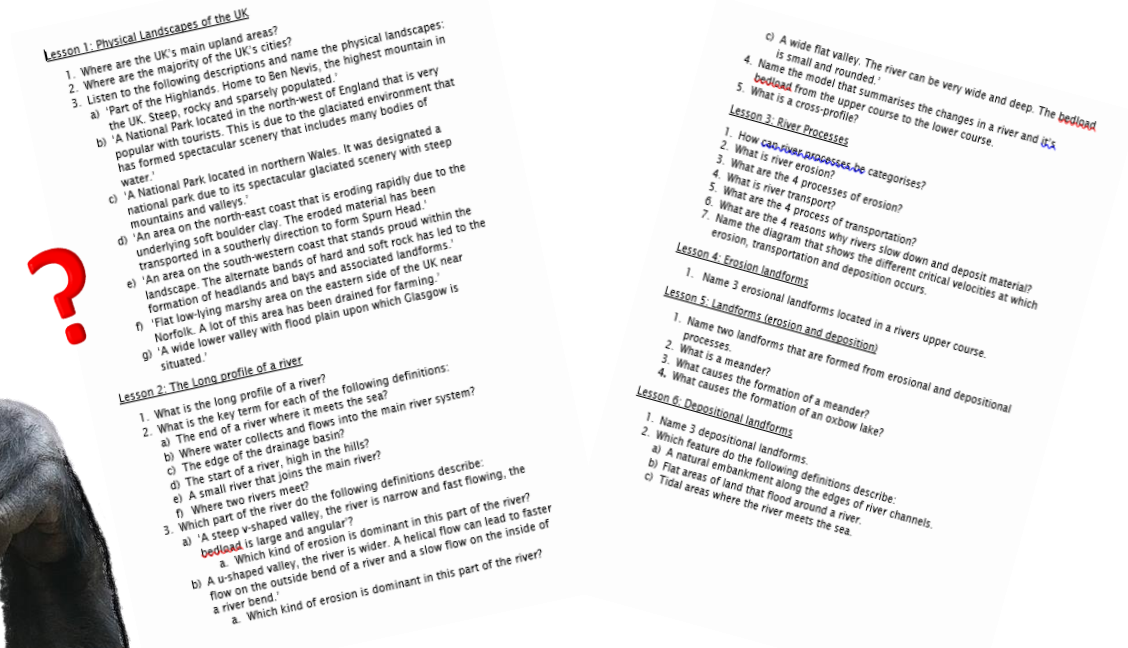
Knowledge Quiz

Complete the Knowledge Quiz to test your knowledge on the Long Profile, Fluvial Processes and Erosional Landforms.

When you have completed the Knowledge Quiz use the Answer Sheet to work out your score.



Lesson 1: Physical Landscapes of the UK

1. Where are the UK's main upland areas?
2. Where are the majority of the UK's cities?
3. Listen to the following descriptions and name the physical landscapes:
   a) 'Part of the Highlands. Home to Ben Nevis, the highest mountain in the UK. Steep, rocky and sparsely populated.'
   b) 'A National Park located in the north-west of England that is very popular with tourists. This is due to the glaciated environment that has formed spectacular scenery that includes many bodies of water.'
   c) 'A National Park located in northern Wales. It was designated a national park due to its spectacular glaciated scenery with steep mountains and valleys.'
   d) 'An area on the north-east coast that is eroding rapidly due to the underlying soft boulder clay. The eroded material has been transported in a southerly direction to form Spurn Head.'
   e) 'An area on the south-western coast that stands proud within the landscape. The alternate bands of hard and soft rock has led to the formation of headlands and bays and associated landforms.'
   f) 'Flat low-lying marshy area on the eastern side of the UK near Norfolk. A lot of this area has been drained for farming.'
   g) 'A wide lower valley with flood plain upon which Glasgow is situated.'

Lesson 2: The Long profile of a river

1. What is the long profile of a river?
2. What is the key term for each of the following definitions:
   a) The end of a river where it meets the sea?
   b) Where water collects and flows into the main river system?
   c) The edge of the drainage basin?
   d) The start of a river, high in the hills?
   e) A small river that joins the main river?
   f) Where two rivers meet?
3. Which part of the river do the following definitions describe:
   a) 'A steep v-shaped valley, the river is narrow and fast flowing, the bedload is large and angular'
      a. Which kind of erosion is dominant in this part of the river?
   b) A u-shaped valley, the river is wider. A helical flow can lead to faster flow on the outside bend of a river and a slow flow on the inside of a river bend.'
      a. Which kind of erosion is dominant in this part of the river?
   c) A wide flat valley. The river can be very wide and deep. The bedload is small and rounded.'
4. Name the model that summarises the changes in a river and it's bedload from the upper course to the lower course.
5. What is a cross-profile?

Lesson 3: River Processes

1. How can river processes be categorises?
2. What is river erosion?
3. What are the 4 processes of erosion?
4. What is river transport?
5. What are the 4 process of transportation?
6. What are the 4 reasons why rivers slow down and deposit material?
7. Name the diagram that shows the different critical velocities at which erosion, transportation and deposition occurs.

Lesson 4: Erosion landforms

1. Name 3 erosional landforms located in a rivers upper course.

Lesson 5: Landforms (erosion and deposition)

1. Name two landforms that are formed from erosional and depositional processes.
2. What is a meander?
3. What causes the formation of a meander?
4. What causes the formation of an oxbow lake?

Lesson 6: Depositional landforms

1. Name 3 depositional landforms.
2. Which feature do the following definitions describe:
   a) A natural embankment along the edges of river channels.
   b) Flat areas of land that flood around a river.
   c) Tidal areas where the river meets the sea.

Date: Wednesday, 13 May 2020

Title: Depositional Landforms: Levées, Flood plains and Estuaries

What landform is being portrayed by the catchphrase?

LO: To explore the characteristics and formation of levées, flood plains and estuaries.

SUCCESS CRITERIA:

I can **describe** the characteristics of levées, flood plains and estuaries.

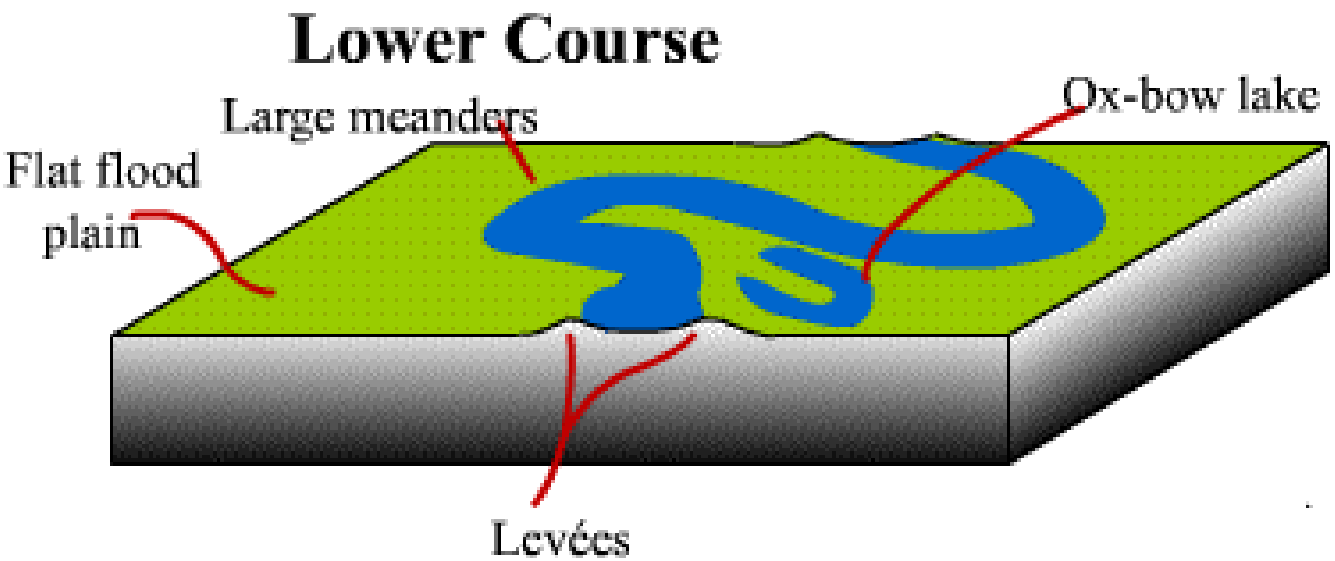
I can **explain** the formation of levées, flood plains and estuaries.

Lower Course

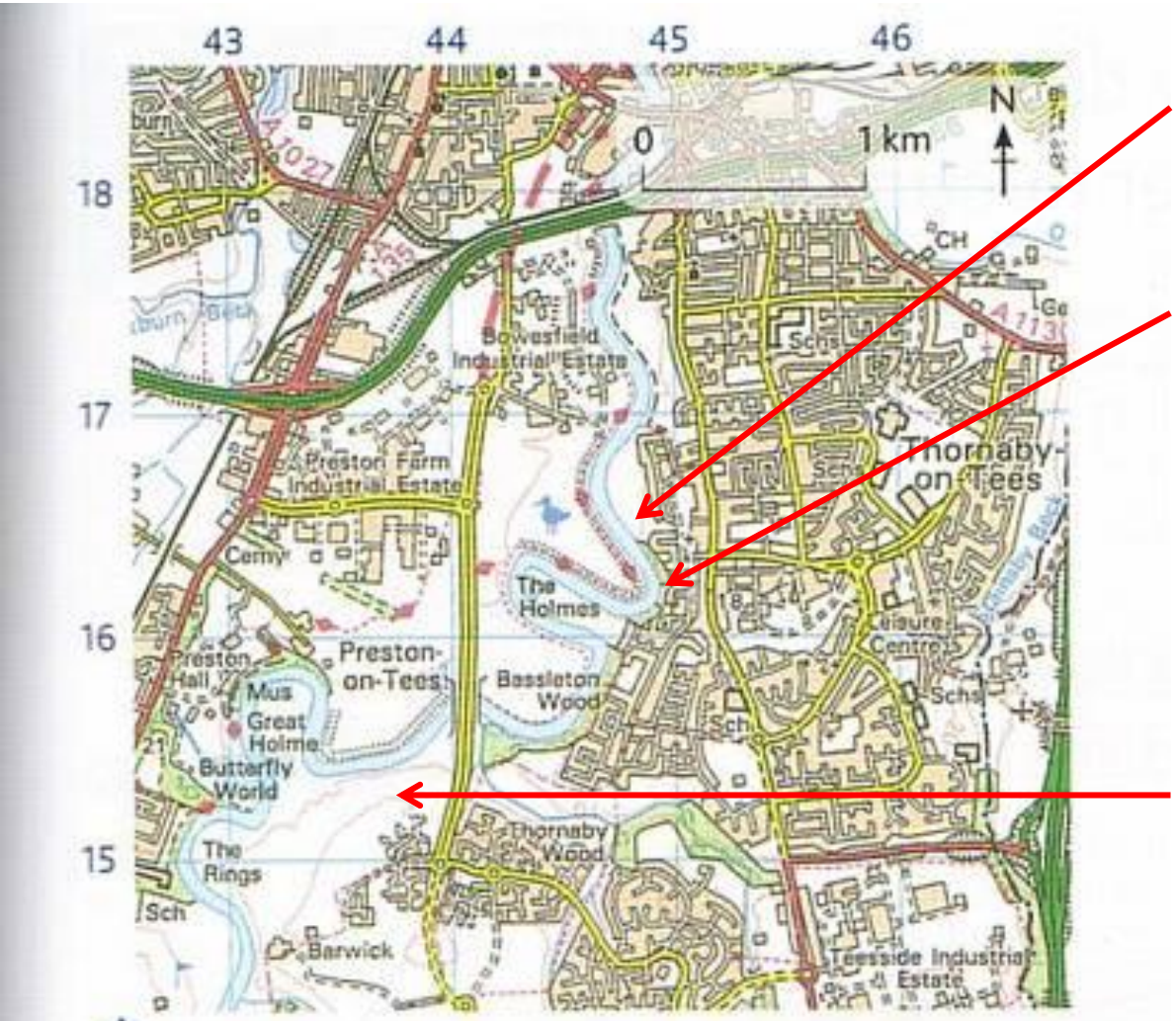
When a river reaches its lower course, the gradient flattens out. **Deposition** is the dominant process in this part of a river.

More energy is needed to carry heavier particles.

The river will drop material when there is a decrease in velocity or amount of water.



Lower course on an OS map



1:50,000 OS map extract of the floodplain of the River Tees, part of map sh

A meandering river

Widest river channel

Lots of buildings

Contour lines are spread out suggesting a floodplain

What is a levées?

Levées are naturally raised river banks (ridges of sediment) found on either or both sides of a river channel, that is prone to flooding. They are found in a river's lower course. It is formed by flooding over many years and composed of gravel, stones and alluvium (silt). formed artificially to hold more water and reduce flood risk.

What is a flood plain?

A flood plain is wide, flat area on marshy land on either side of a river, and found in the middle and lower courses. Flood plains are made from alluvium which is deposited when a river floods. Flood plains are used for farming as the soil is very fertile.

Continue to read through the next few slides to understand the formation of leeves and floodplains in more detail

Formation of Levées

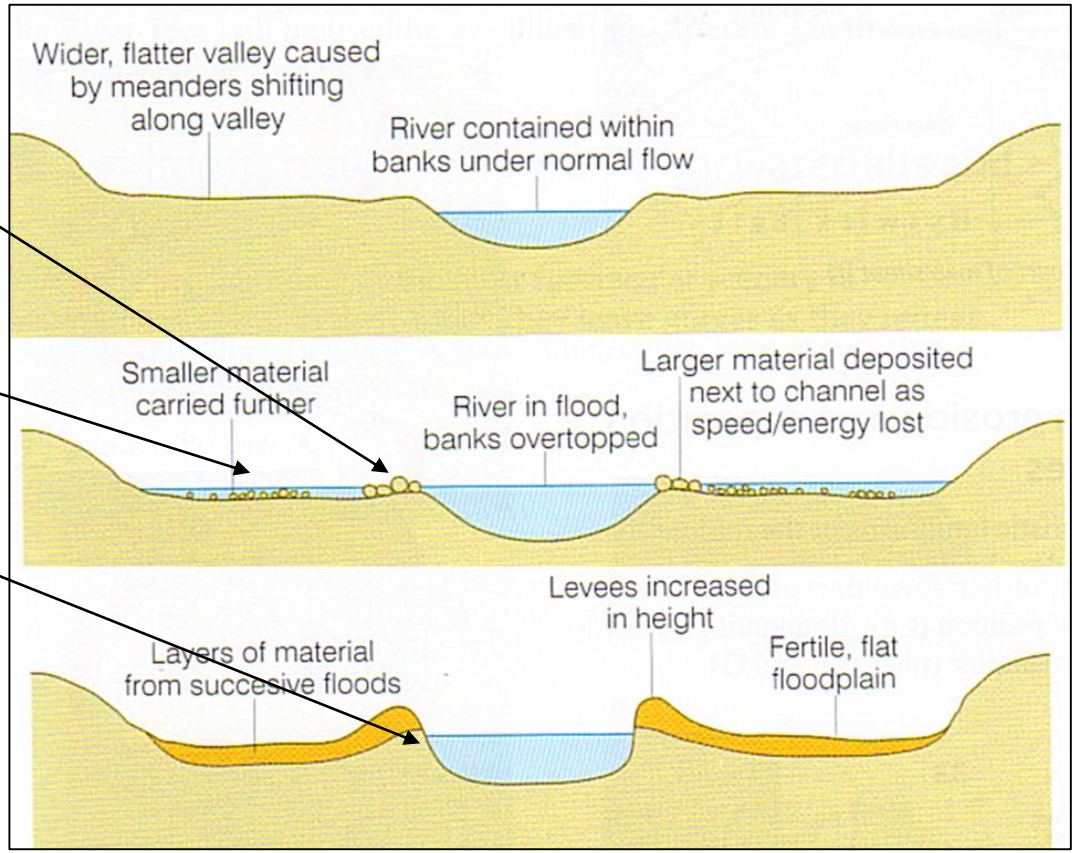
SUMMERISE AND COPY

When a river bursts its banks, friction with the land reduces velocity (speed of river) and causes deposition. Heavy sediment is deposited closest to the river.

The size of sediment then becomes progressively smaller with distance from the river.

With each successive flood, the banks are built up higher.

Although it may seem that make it more difficult for the river to flood next time, this is not the case as overtime the bed of the river deposits a thicker layer of sediment, which raises the river in its channel.



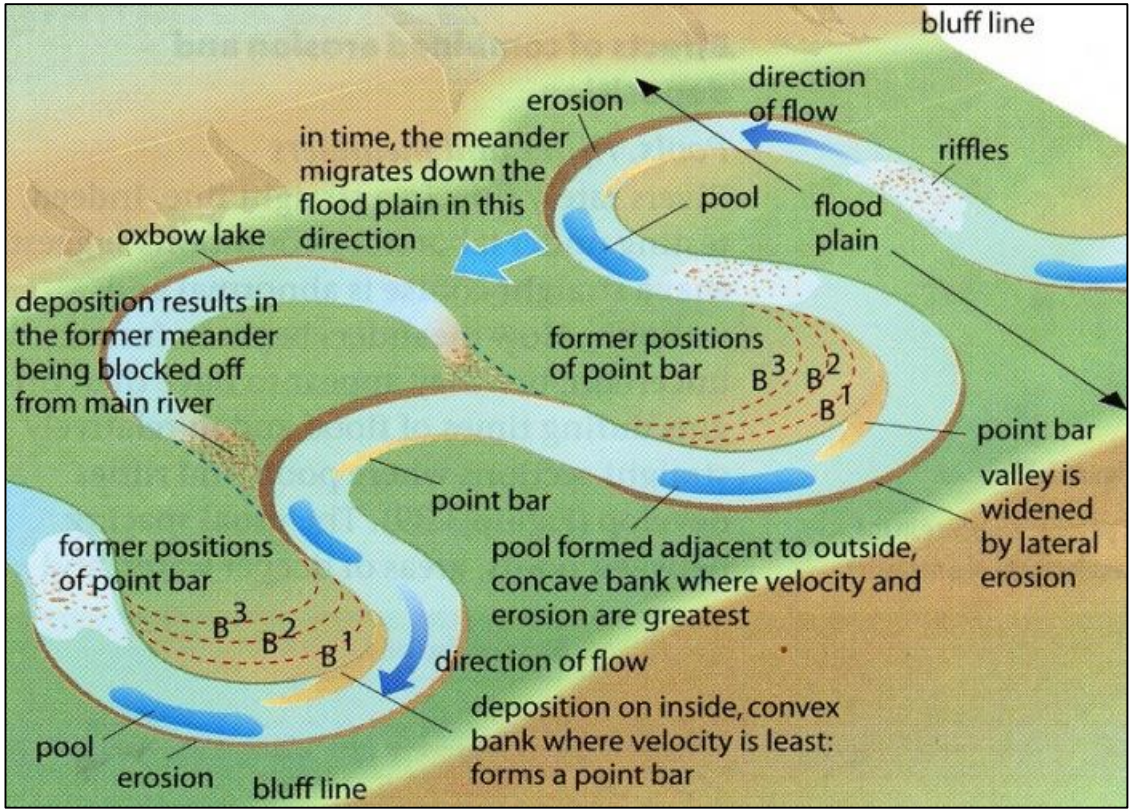
Formation of Flood plains

SUMMERISE AND COPY

Flood plains are formed by two processes:

Meanders migrate across the flood plain due to lateral erosion. When they reach the edge of the floodplain they erode the valley side (bluff line). Eventually this cuts a wider valley. This explains why flood plains are very wide.

When the river floods its deposits silt, creating a very flat flood plain. Layer upon layer builds up over many years to form a thick deposit of fertile alluvium.



Estuaries

Estuaries are found at the mouth of a river, in its lower course where the river meets the sea.

The water here is tidal, the river level rises and falls each day.

The water floods over the banks of the river carrying silt and sand on to the valley floor.

As the tide reaches its highest point, the water is moving very slowly as the rivers velocity decreases, so the <u>sediment is deposited.</u>

Over time, more and more mud builds up, creating large areas of mudflats.

At low tide, the wide, muddy banks are exposed. Overtime, these mudflats develop into <u>saltmarshes</u>.

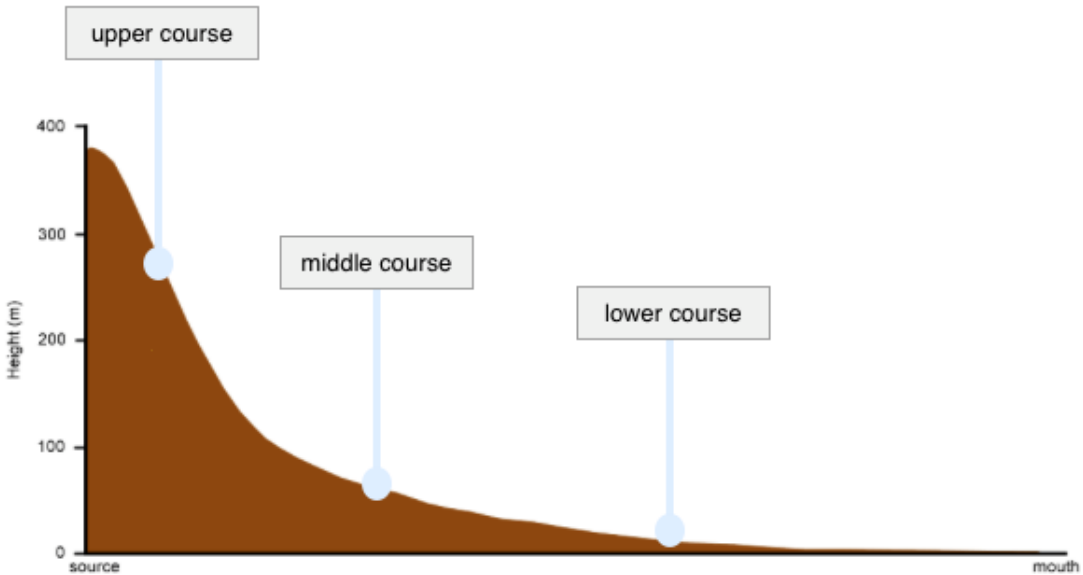
https://www.youtube.com/watch?v=qrYQFdukGMg

TASK

Task 1: Complete the worksheet

Task 2: Add to the long profile - Go back in to the diagram of a rivers long profile that you created in the second lesson. Add the names and a short description of all the landforms you have learnt so far to your diagram:

- Levees
- Oxbow lake
- Estuaries
- Floodplains
- Waterfalls
- Gorge
- Meanders
- Rapids



Task 3: Complete the exam question on the next slide

EXAM QUESTION: Figure 1 shows a photograph of a river landform on the South Coast of Devon. Explain the processes involved in the formation of the landform shown in Figure 5 (4).

Figure 5

SUCCESS CRITERIA:

L1 (1-2) There is a basic explanation of an estuary.

L2 (3-4) There is a clear explanation of an estuary, which uses geographical terms.

EXAM QUESTION: MODEL ANSWER

Figure 1

Estuaries are found at the mouth of a river where the land is close to sea level. The water is tidal and so the river level rises and falls each day. When the tide comes in, the water floods over the banks of the river (1) and deposits silt and sand on the valley floor (1). Over time, more and more mud builds up (1), creating large areas of mudflats and saltmarshes (1).