

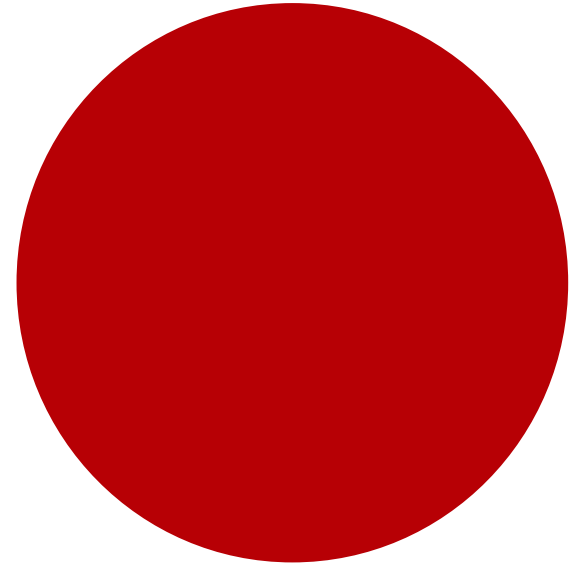
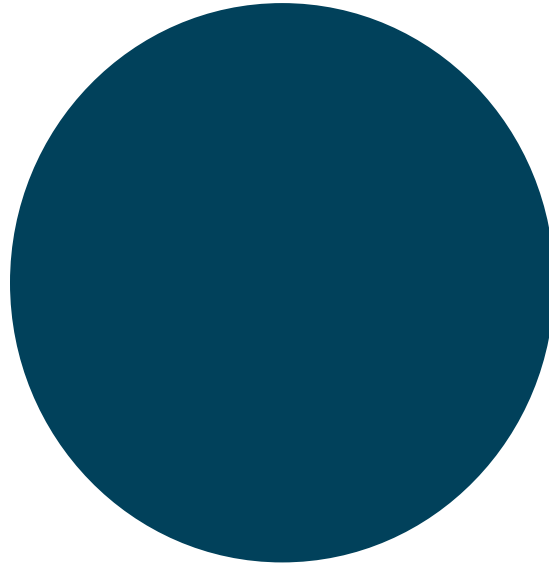
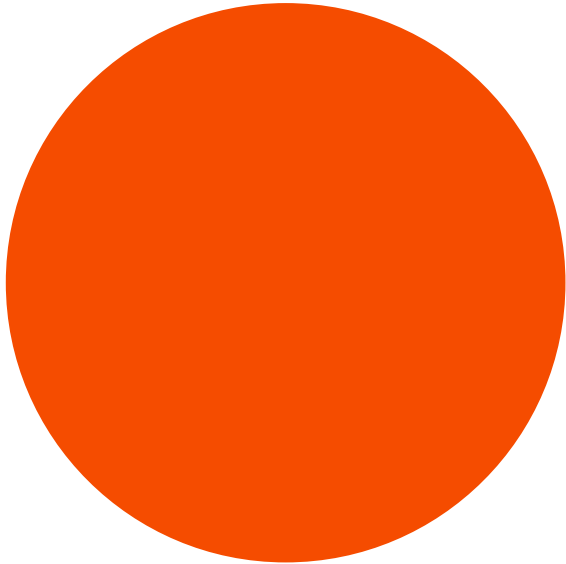


Lesson One:

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L.O. To understand the journey of a river





Did you know?

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Ninety-seven percent of all the water on Earth is found in the oceans. The remaining three percent is fresh water.

This fresh water is found primarily frozen in ice sheets, ice caps or in glaciers. Fresh water is also held deep underground, in naturally occurring aquifers (porous rocks that hold water like a sponge) or in groundwater (contained in soils).

Only 0.011% of all water is fresh water found on the surface as rivers or lakes. However, rivers continue to shape the landscape and impact of the lives of people who live in their vicinity.



Glossary of Terms

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Source

The point at which a river starts.

Upper course

The first stage of river, often located on high ground.

Middle course

The second stage of a river, where the land is flatter and the river wider.

Lower course

The land is flat and the river is at its widest.

Channel

The river bed and banks in which water flows.

V-shaped valley

The river in the upper course flows through steep gradients

Tributaries

Small streams that join the larger river.

Erosion

Material is cut away from river beds and banks by the water

Transportation

When eroded material is taken downstream.

Deposition

Material is 'dropped' or deposited when the river no longer has the capacity to carry it.

Undercutting

A feature of erosion when the river cuts away at the bank.

Meander

The natural bend in a river.

Oxbow lake

A section of a meander that becomes isolated from the main river channel and eventually dries out.

Mouth

The point where the river ends.

Estuary

In the lower course, where the river meets the sea.

Delta

Characterised by mud and sediment deposits, deltas are formed at the mouth of a river when the incoming tide cannot wash them away.

Precipitation

Precipitation is rain, hail, sleet and snow. It is important that pupils do not think that the only source of fresh water is rain.

Surface runoff

When precipitation runs over the surface of the land.

Throughflow

When water infiltrates the layer of soil and flows through it, rather than overland.



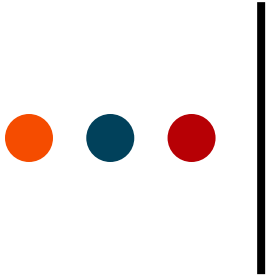
The Water Cycle

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Please watch the following video to remind yourself about the water cycle, you will need this information for later on it today's lesson

<http://www.crickweb.co.uk/ks1science.html#watercycle>



Use the glossary to help you understand the journey of a River.

We will be focussing on the journey of The River Thames in the next lesson.



This is the source of
The River Thames!
Usually it remains
dry, sometimes you
can see a pool
forming at the stone,
but usually no sign of
water can be seen.



The Upper Course

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Peru - Cusco Sacred Valley & Incan Ruins 153 - steep-sided Urubama valley © McKay Savage

The Upper Course is usually flowing as it has lots of energy. It is often referred to as a young river



Little Luckiamute River © Ian Sane, Flickr



Waterfalls

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The fast flowing river can create waterfalls where it carves out layers of soft rock and leaves a cliff of hard rock standing.

High Force Waterfall The River Tees

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High Force Waterfall © Lincoln Eye, Flickr



The Middle Course

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Cuckmere Meander © Dave Moyes, Flickr



Thames Path © Gabriella Szekely, Flickr



The Middle Course

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The middle course of the river's journey is where it gets wider and slower.

Rivers often 'meander' which means to follow a winding path.



The current of the river no longer has the force to carry stones or gravel. This material drops to the riverbed, where it forms bars of sand or gravel or builds islands.



Erosion and Deposition

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- **Erosion:** This causes the wearing away of the river banks and river bed. In the first instance, the sheer weight of the water can move material from the river bed and river bank. In a process called abrasion, small rocks and sediment can also act like sand paper, rubbing away at the river bed. Attrition also causes rocks and pebbles to collide and break apart. Finally, erosion can occur through corrosion, where water reacts with minerals in the rocks it flows over. Erosion occurs on the outside of the meander where the water is moving at its fastest. This will also cause a deeper channel to be formed- so consequently the water on the outside of a meander will be deeper than on the inside.

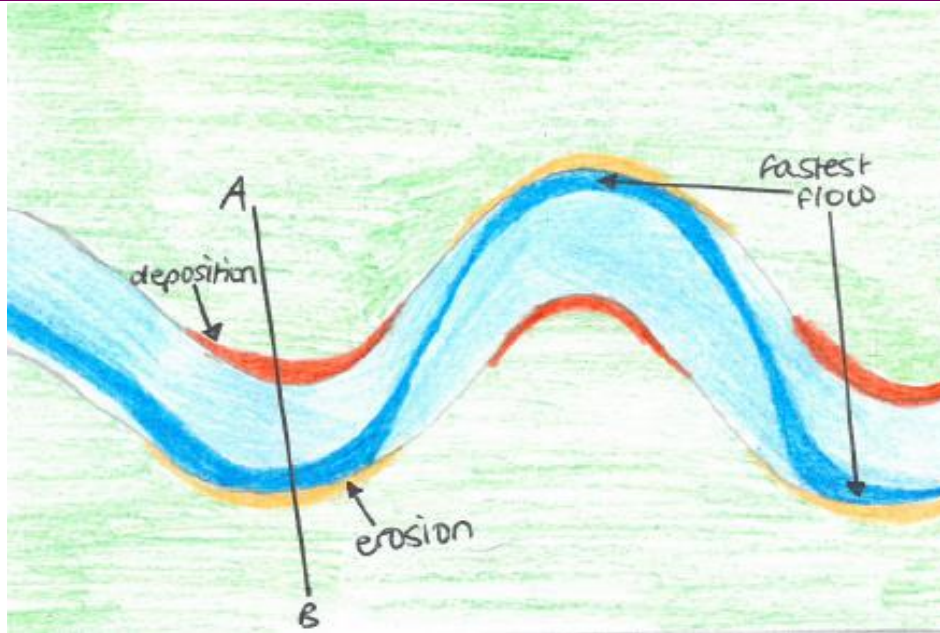


Erosion and Deposition

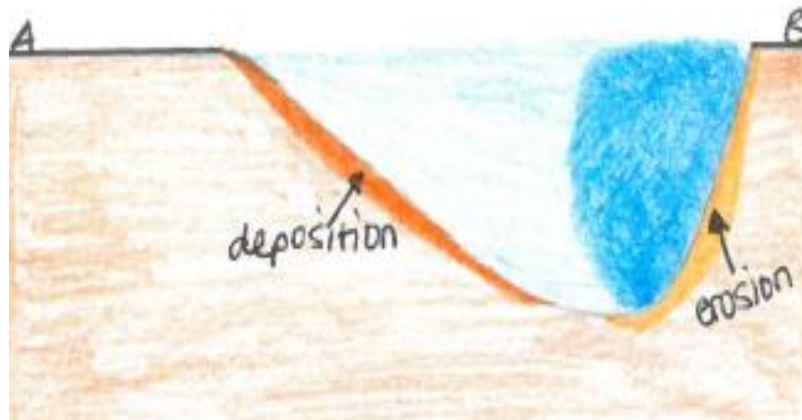
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View from above



Cross section





Erosion and Deposition

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Deposition: This occurs where water lacks the energy to transport the load it is carrying. In the middle course this happens on the inside of a bend or meander, where the water flows slowly. In the lower course, deposition can happen at the mouth of the river, where the estuary meets the sea. This can form a delta. Oxbow lakes form when meanders become extreme.



Oxbow Lakes

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Meandering River through the flat fields of Northwest Scotland © Ben-Benjamin



Oxbow Lakes © Molly Stevens, Flickr



Oxbow Lakes

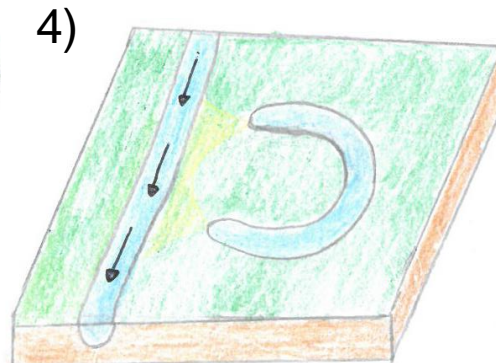
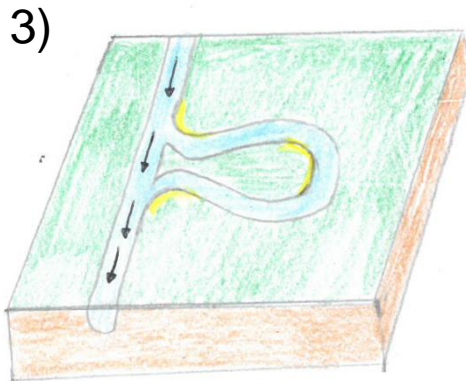
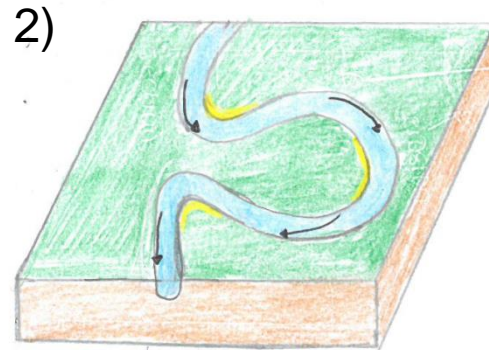
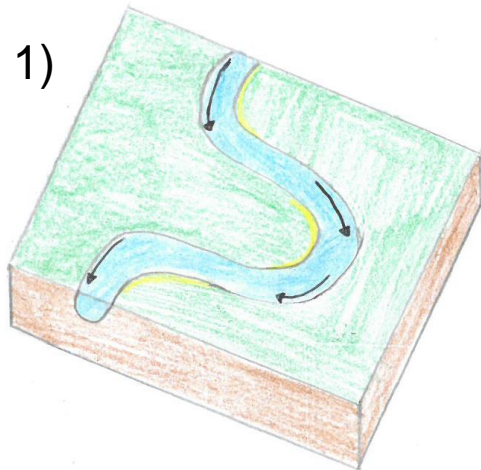
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An **oxbow lake** is a U-shaped **lake** that forms when a wide meander of a river is cut off, creating a free-standing body of water.

The Formation of Oxbow Lakes



Anna Brace

1) The river meanders.

2) With continued erosion and deposition, the meander becomes more pronounced.

3) The river takes a straighter more efficient course.

4) The loop is abandoned and an oxbow lake is formed. Eventually the oxbow lake will dry out.

The Thames Estuary

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Thames Estuary © Quietloner, Flickr



The Thames Estuary

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An **estuary** is a partially enclosed coastal body of brackish water (water that has more salt in it than fresh water but not as much as sea water) with one or more **rivers** or streams flowing into it, and with a free connection to the open sea. **Estuaries** form a transition zone between **river** environments and maritime (sea) environments


River Mouth

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Task 1

Match the key word to its definition

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Can you do this without looking back at the glossary?

Channel
Meander
Upper course
Estuary
Mouth
Lower course
Tributaries
Source
Oxbow lake
Middle course

The point at which a river starts.

The first stage of river, often located on high ground.

The second stage of a river, where the land is flatter and the river wider.

The land is flat and the river is at its widest.

The river bed and banks in which water flows.

Small streams that join the larger river.

The natural bend in a river.

A section of a meander that becomes isolated from the main river channel and eventually dries out.

The point where the river ends.

In the lower course, where the river meets the sea.



Task 1 Answers

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Journey of a River

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Can you create a 3D model or of the parts of a river and label them. Send your creations into school via email for your teacher to see. Make sure you are using most (if not all all) of the key vocabulary

learning@wembleyprimaryschool.brent.sch.uk



Journey of a River

Examples of work

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