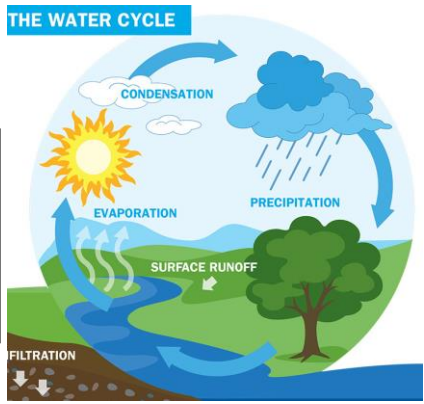


Year 6 - Rivers Knowledge Organiser

Keywords

source	evaporation	channel	suspension	drought
mouth	precipitation	cross-section	<u>bedload</u>	desalination
tributary	surface runoff	estuary	<u>sediment</u>	flood
confluence	infiltration	erosion	V-shaped valley	flood defences
river basin	throughflow	solution	waterfall	flash flood
watershed	groundwater	abrasion	gorge	saturated
floodplain	water table	hydraulic action	plunge pool	embankment
river bed	impermeable	attrition	meander	abstract
river bank	long profile	transport	oxbow lake	aquifer

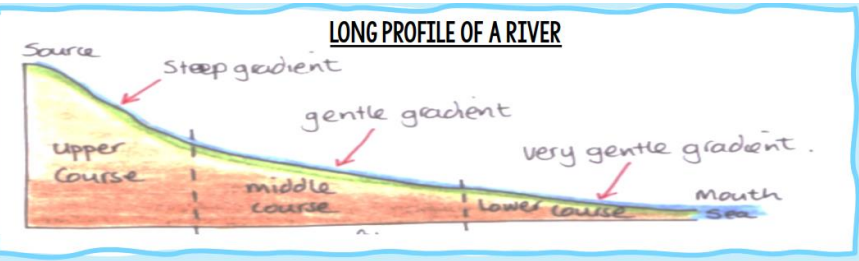


River Processes

- Erosion** – Rocks are worn away.
- Transportation** – eroded material is carried downstream by the river.
- Deposition** – The river loses energy and transported material is dropped.

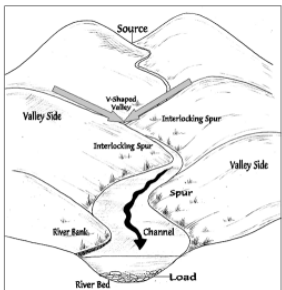
Flooding

- Causes of flooding:**
- Heavy rain – the main cause, filling the rivers with water
 - Snow melting – Spring snow melting in mountains
 - Steep land – makes the water run down to rivers faster
 - Impermeable rock – water won't soak in
 - Tributaries – water gets to the river quickly.
 - Built up areas (urbanisation)
 - Deforestation (cutting down trees) – trees aren't there to absorb water.



THE UPPER COURSE

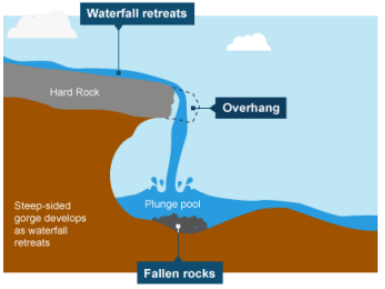
FEATURES
Steep-sided V-shaped valleys, interlocking spurs, rapids, waterfalls and gorges.



When a river is near its source, it often develops a V-shaped valley as the river erodes down (this is called **vertical erosion**).

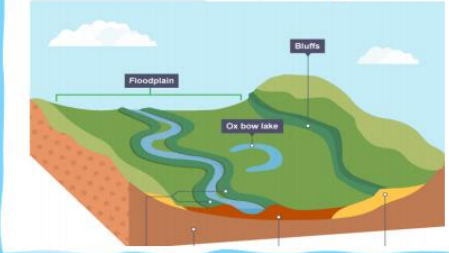
At the same time, weathering breaks up material on the valley slopes. Weathered material from the valley sides gets deposited in the river.

1. The soft rock erodes more quickly, **undercutting** the hard rock
2. The hard rock is left **overhanging** and eventually collapses.
3. The fallen rocks crash into the **plunge pool**. They swirl around, causing more erosion
4. Over time, this process is **repeated** and the waterfall moves upstream
5. A steep-sided **gorge** is formed as the waterfall retreats



THE LOWER COURSE

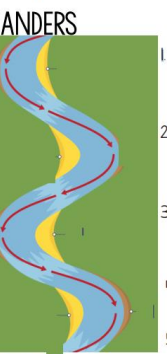
FEATURES
Wide flat-bottomed valleys, floodplains and deltas



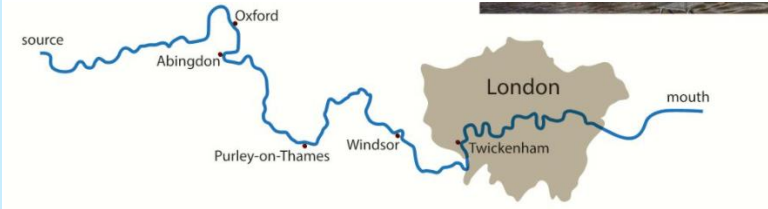
A floodplain is the area around a river that is covered in times of flood. It is a very fertile area. This makes floodplains a good place for agriculture. A build-up of alluvium on the banks of a river can create levees, which raise the riverbank.

THE MIDDLE COURSE

FEATURES
Wider, shallower valleys, meanders, and oxbow lakes



1. The formation of meanders is due to both **deposition** and erosion and meanders gradually move downstream.
2. The force of the water **erodes** and undercuts the river bank on the outside of the bend where water flow has most energy.
3. On the inside of the bend, where the river flow is slower, material is **deposited**, as there is more friction.
4. Over time the horseshoe become tighter, until the ends become very close together. As the river breaks through the ends join, the loop is cut-off from the main channel.
5. The cut-off loop is called an **oxbow lake**.



Flooding has happened in all of these places along the River Thames in the last 20 years.

Flood prevention:

- Short-term**
- Portable flood barriers
 - Sandbags
 - Flood shutters (used at St John's!)
- Long-term**
- Embankments – creates more space for water in the river.
 - New river channels – creates more space for water
 - Planning new housing carefully – don't build on a floodplain
 - Allowing areas to flood – e.g. low value farmland

The Thames Barrier was created to protect the city of London from flooding. [Read more here - https://www.bbc.co.uk/news/magazine-26133660](https://www.bbc.co.uk/news/magazine-26133660)