

Year 4 Geography

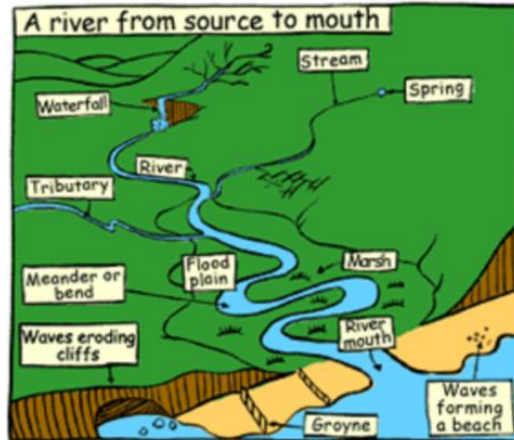
Rivers and The Water Cycle

How does the water go round and round?

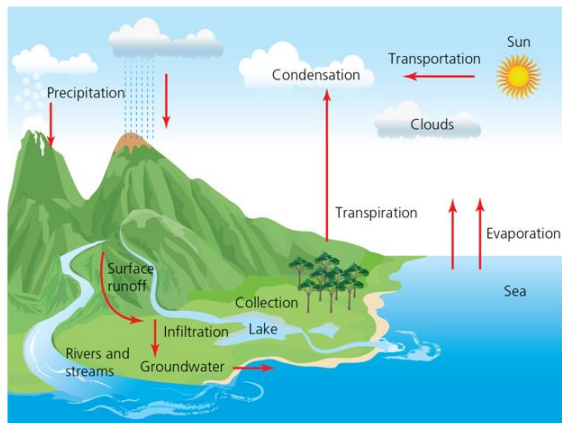
What I should already know: Climate and weather, seasonal weather patterns in the UK
River Nile - flooding, irrigation, settlements and human use by Ancient Egyptians

Lesson 1: Where does all the rain go? (Activity: Pre-assessment: draw and label a picture of what you think a river looks like.)

- water moves downhill
- a river starts at the source and ends at the mouth
- some water soaks into the ground and flows into a stream, river, lake or the sea



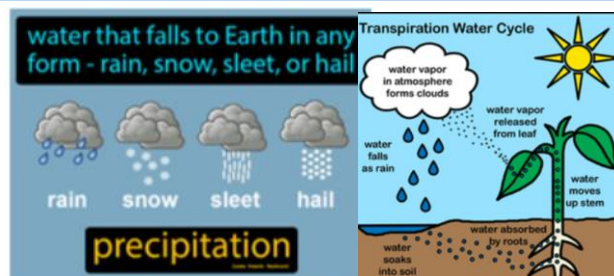
The water cycle



infiltration	rainwater soaks into the ground
percolation	the movement of water into the deeper layers of the soil
source	the start of a river
mouth	end of a river where it flows into the sea
estuary	where a river meets the sea and saltwater mixes with freshwater
terrain	features of the surface of a piece of land
tributary	a river or stream that flows into another river
confluence	the point at which two rivers or streams join
meander	a curve or bend in a river
infiltration	rainwater soaks into the ground,
percolation	the movement of water into the deeper layers of the soil

Lesson 2: Where does all the rainfall come from? (Activity; draw and label a diagram of the water cycle and write a description of the process.)

- The water (or hydrological) cycle shows the continuous movement of water
- Stages of the water cycle:
 - evaporation
 - condensation
 - precipitation
 - collection



evaporation	when a liquid is becomes a gas
condensation	when a gas becomes a liquid
water vapour	water in its gas state

Lesson 3: What can we learn about the River Thames? (Activity: add key features to an OS map of the river Thames from source to mouth)

The river Thames is important because:

- flows through the UK's capital city, London
- the Thames Barrier protects London from flooding

An OS map of the River Thames from source to mouth



urban	<i>built up areas like towns and cities</i>
rural	<i>countryside</i>
gradient	<i>the steepness of a slope</i>
ordnance survey map (OS)	<i>up to date and accurate maps showing the landscape's human and physical features. All OS maps use the same symbols, which are included in a key so people using the map know what each symbol represents.</i>

Lesson 4: How and where do people use and change rivers? (Activity: research world rivers to discover how human use influences physical features)

- **Yangtze River** – In 2012, the huge Three Gorges Dam was built on the River Yangtze for hydro-electric power, for flood control downstream and to increase the river's shipping capacity
- **River Nile** – in Egypt use of the Nile for irrigation dates back to at least 4000 BC
- **River Niger** – from its source in the Guinea highlands the river actually flows away from the sea and into the Sahara
- **Mississippi River** – the largest port district in the world
- **River Ganges** – a river sacred to the Hindus
- **River Rhine** – the second longest river in Central and Western Europe
- **River Danube** – the second longest river in Europe and a source of drinking water for 20 million people.



Work to control flooding on a river in China.



A reservoir is a man-made lake created by a dam built to store water.



Three Gorges Dam, hydro-electric plant

port	<i>a place where boats can come and go to load and unload their supplies/people</i>
hydro-electric power	<i>electricity that comes from moving water</i>
irrigation	<i>when people add water to plants, to help them grow when there is not enough rain. Irrigation water can be pumped from rivers</i>

Lesson 5: How do rivers wear away mountains? (Activity: draw and label a cross section of a V-shaped and U-shaped valley and explain how they are formed.)

- many rivers have their



glacier	<i>a frozen river</i>
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- source (start) in mountains
- mountains were made over millions of years by movements in the Earth
- mountains can be shaped by water
- valleys formed by flowing water tend to be V-shaped
- valleys formed by ice/glaciers are U-shaped



U-shaped valleys have been typically carved for a glacier. Photo taken in Scotland.



V-shaped valley has been typically eroded by running water. Photo taken in Scotland.

erosion	<i>the process that wears away the riverbed and banks</i>
transportation	<i>when rivers pick up and carry material in the water as they flow downstream</i>
deposition of materials	<i>when a river does not have enough energy to carry the materials, so it drops them</i>

Lesson 6: BIG FINISH Can we model a river or a stream? (Activity: To build a river or stream to see how changes in water flow affect the features)

- when describing the features of a river upstream is against the flow and nearer to the source of the river and downstream is closer to the mouth
- ivers are usually wider at the mouth than the source

Make a river



grid reference	<i>a numbered grid of squares which helps the map-reader to locate a place</i>
upstream	<i>means that you are travelling against the flow of the river towards the source</i>
downstream	<i>means that you are travelling with the flow of the river towards the mouth</i>

UNIT QUIZ