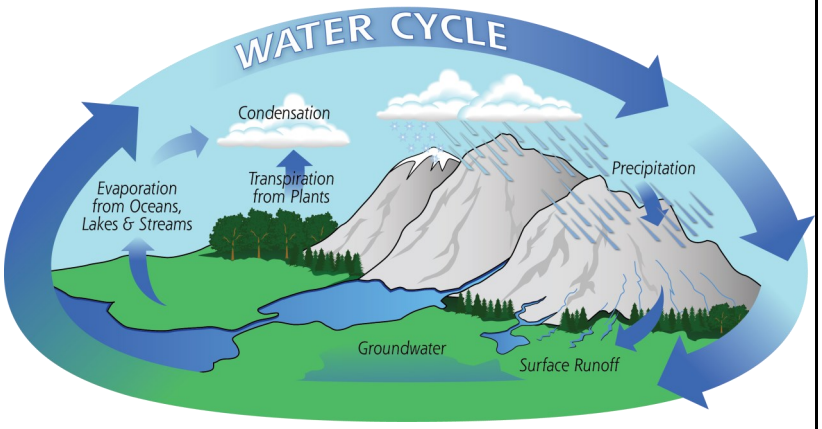
YEAR 8 GEOGRAPHY– FLOODING

1 KEY VOCABULARY—WATER CYCLE

Water cycle	The movement of water in the Earth and atmosphere.
Evaporation	The change of water from a liquid to a gas—happens due to heating.
Transpiration	Loss of water from inside the leaves of plants.
Condensation	The change of water from a gas to a liquid—happens due to cooling.
Precipitation	Any form od water falling from the sky—rain , snow, hail etc.
Surface water	Any water sitting on or moving across the surface of the Earth.
Groundwater	Water held below the ground at the water table (saturated rock)
Impermeable	A material that will not allow water to pass through it.
Permeable	A material that will let water flow through it

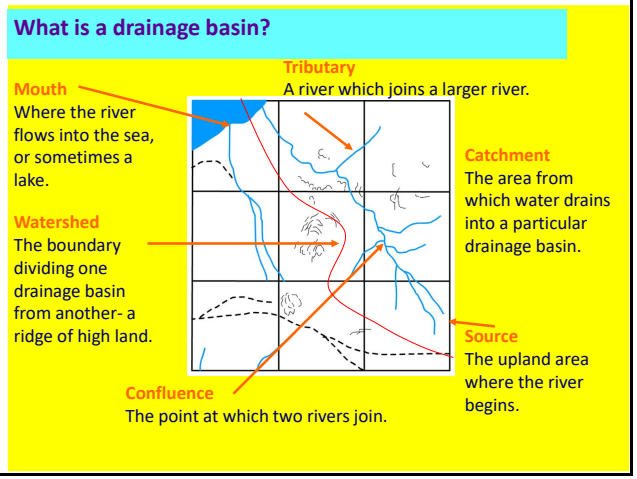
2 THE WATER CYCLE

The water cycle shows the continuous movement of water within the Earth and atmosphere. It is a complex system that includes many different processes. Liquid water evaporates into water vapour, condenses to form clouds, and precipitates back to earth in the form of rain and snow. Water in different phases moves through the atmosphere (transportation). Liquid water flows across land (runoff), into the ground (infiltration and percolation), and through the ground (groundwater). Groundwater moves into plants (plant uptake) and evaporates from plants into the atmosphere (transpiration). Solid ice and snow can turn directly into gas (sublimation). The opposite can also take place when water vapour becomes solid (deposition).



3 RIVER FEATURES IN THE DRAINAGE BASIN

A river is a method by which the PRECIPITATION is collected and drained off the land. The river begins collecting rainfall on high ground at it SOURCE. It flows downhill due to gravity, other smaller rivers (TRIBUTARIES) join on at CONFLUENCES to create a bigger CHANNEL. The river will get wider and flatter with greater chance of FLOODING until it reaches the MOUTH where it enters the sea. The whole area that the river collects the water from is known as the CATCHMENT AREA or DRAINAGE BASIN.



YEAR 8 GEOGRAPHY – FLOODING

4 CAUSES OF FLOODING

Physical causes of flooding	Human factors increasing flood risk
heavy rainfall	urbanisation, because towns and cities have more impermeable surfaces
steep slopes	deforestation, because removing trees reduces the amount of water intercepted and increases run-off
snowmelt	Converting front gardens to
impermeable rock (doesn't allow	Poor land management
very wet, saturated soils	
compacted or dry soil	

5 BOSCASTLE FLOODING 2004

Boscastle is a small coastal settlement in the south west of England. It flooded in August 2004, washing cars and buildings into the sea and putting peoples' lives in danger.

Causes of flooding in Boscastle

Heavy localised rainfall - 89 mm of rain fell in an hour.

Saturated ground from previous rainfall.

Topography of the land. The landscape upstream of Boscastle, a steep-sided valley, acted as a funnel directing vast volumes of water into the village.

Narrow river channels in the village itself.

What has Boscastle done to prevent flooding in the future?

£4.5 million has been spent on a flood defence scheme.

The scheme stretches along the valley, incorporating drainage, sewerage systems and land re-grading.

Boscastle car park has been raised in height, which will stop the river from bursting its banks so easily.

New drains allow water to run into the lower section of the river quickly.

The river channel has been made deeper and wider so that it can accommodate more water.

6 KEY VOCABULARY—RIVERS

Mouth	The point where the river enters the sea or ocean
Tributary	A smaller river or stream joining the main river
Confluence	The point at which a tributary joins
Watershed	The edge of the drainage basin (an area of high ground)
Catchment area/ drainage basin	The area from which a river collects it water
Source	The beginning of a river
Environment Agency	The government organisation responsible for protecting us from flooding
Boscastle	A Cornish village that experienced a huge flash flood in 2004
Bihar	A region in India that experienced a wide scale flood
Embankments	A method of building up the sides of a river to prevent it from flooding
Channelisation	Changing the river bed and banks to allow the river to hold more water and prevent flooding.

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YEAR 8 GEOGRAPHY —FLOODING IN BIHAR

- Bihar is located in North East India
- It is one of the poorest regions of India
- Life expectancy of 67 years
- GDP per capita (average earnings) of $5800
- Seasonal climate meaning the ground is baked dry for months of the year
- Literacy rate (% of adults who can read and write) of 70%

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CAUSE AND EFFECT OF THE BIHAR FLOODS OF 2008

Causes	Effects
During the months of August and September in 2008 there was a long period of heavy rainfall along the foothills of the Himalayas.	The rainfall ultimately led to widespread floods in Bihar, an Indian state, that made millions homeless and claimed the lives of hundreds of people.
Bihar is located in the north east of India, to the south of the Himalayas bordering Nepal.	The flood killed 500-2000 people
In Bihar, 42% of the population lives below the poverty line	70% of Bihar's population are farmers most of their food was destroyed.
It is one of the poorest states in India	3 million people were made homeless and sent to refugee camps.
The monsoon brought heavy rainfall to the foothills of the Himalayas and dramatically increased the discharge of the Kosi.	The disaster ended up costing nearly $542 million
The lack of vegetation cover meant that rain water wasn't intercepted and easily flowed into the river via surface runoff	The flood will have washed sewage and pollutants into the Kosi River, polluting it and killing off some wildlife.
the defences were defective or poorly maintained	The river was forced to flow into a channel that it hadn't flown through in over 100 years. In doing so, it flooded a large portion of Bihar.