7.04 Rivers

Background

Rivers affect the landscape and the lives of the people who live near them.

A	**Rivers are found within their own drainage basin and have their own distinct features.**
B	**As a river moves from its source in the upper course to its mouth in the lower course, its profile changes.**
C	**There are many different river processes that can impact the landscape.**
D–F	**The processes of erosion and deposition can lead to the formation of different river landforms.**
G	**Flooding is a key feature of rivers, and drainage basin processes play a significant role in this. By altering the drainage basin of a river, we can interfere with these processes.**
H	**There are many examples of floods. Today, many strategies have been put in place to manage the flood risk.**

A) Drainage basin features

1	**drainage basin**	**(n)** an area of land drained by a river and its tributaries
2	**source**	(n) the start of a river
3	**mouth**	(n) the place where the river enters a lake, sea or ocean
4	**tributary**	(n) a smaller river that joins a larger river
5	**confluence**	(n) the point at which two or more rivers meet
6	**watershed**	(n) the dividing line between two drainage basins

B) The river profile

1	**upper course**	the narrow, steep, upper part of a river, which contains waterfalls
2	**middle course**	the wider, deeper channel, which contains meanders and oxbow lakes
3	**lower course**	the widest, flattest part of the river near the mouth, which contains the floodplain.

C) River processes

	river load	(n) the material carried along in the river
1	**erosion**	(n) the breaking down or wearing away of material.
	vertical erosion	(n) erosion which takes place downwards into the land.
	lateral erosion	(n) when erosion moves across the land from side to side, causing the bends of meanders to widen.
2	**transportation**	(n) when rivers carry rocks and sediment along their journey
3	**deposition**	(n) when a river drops its load

D) River features - waterfalls

1	**waterfalls**	**(n)** water falling from a height when a river or stream flows over a steep drop (upper course)
2	**plunge pool**	(n) an area at the base of a waterfall that undercuts the hard rock layer
3	**gorge**	(n) a steep sided valley left behind when a waterfall retreats upstream

E) River features - meanders

1	**meander**	(n) a bend in a river (middle course)
2	**slip-off slope**	(n) the sloping bend of a meander from the inside (shallow) to the outside (deep)
3	**river cliff**	(n) the undercut bank on the outside bend of a meander

F) River features - floodplains

1	**floodplain**	(n) a wide, flat area of land that is flooded frequently when a river bursts its banks (lower course)
2	**levee**	(n) banks found at the side of a river in the lower course
3	**silt**	(n) the fine, fertile eroded material transported by a river

G) The drainage basin system

1	**precipitation**	(n) water falling to the ground in all forms (rain, snow, sleet and hail)
2	**interception**	(n) when the leaves of trees stop precipitation reaching the ground
3	**surface runoff**	(n) the movement of water over the surface of the land back into a river
4	**surface storage**	(n) water stored on the surface in lakes or puddles
5	**infiltration**	(n) the movement of water from the surface into the soil
6	**throughflow**	(n) the movement of water through the soil back into the river

H) Case study: Somerset levels UK

Where/when	Southwest England, flood 2014 Rivers Parrett and Tone

Causes	Effects	Responses
deforestation on the floodplain	600 homes flooded	20,000 sandbags provided to protect homes
saturated ground from heavy rainfall	£200 million lost from the collapse of the tourist industry	65 pumps installed to drain millions of cubic metres of floodwater
low-lying land with four rivers flowing through it	6,800 hectares of agricultural land flooded	Hundreds of people were evacuated from their homes.
build-up of sediment in the channel from lack of dredging	Native bird species couldn't hunt on the flooded ground.	The Environmental Agency is spending £6 million a year on dredging the rivers Parrett and Tone.