Rivers: odd one out

Below is a list of issues, themes and concepts that you have come across in your work about rivers.

1. Circle the odd one out in each row. You may need to refer back to your notes.
2. Explain why it is the odd one out.
3. Add **one** more term at the end of each row. Keep the odd one out the same.

Number	Issues, themes and concepts			Reasoning	Additional choice
1	abrasion	bedload	hydraulic action		
2	traction	saltation	suspension		
3	meander	transport	erosion		
4	river cliff	slip-off slope	waterfall		
5	waterfall	estuary	plunge pool		
6	V-shaped valley	interlocking spurs	lateral erosion		
7	upper course	gentle gradient	smooth bed and banks		
8	delta	meander	middle course		

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Teaching notes

Thinking about thinking

This activity will help students make connections between important aspects of rivers. It should also help them review what they have learnt. It can be an individual, paired or small group exercise. Answers can be compared and evaluated as a class.

Some suggested answers are available on the next page. The odd ones out are marked in red.

Extension tasks

- The students could be asked to go back over their choices. They should be able to find a different odd one out for each number or a different reason for their original choice.

- In pairs, they could discuss which number they found the most difficult to complete and which one they considered to be your best answer.

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Answers

Number	Issues, themes and concepts			Reasoning	Additional choice
1	abrasion	**bedload**	hydraulic action	Abrasion and hydraulic action are processes of erosion operating within the river channel. Bedload is a type of material carried by the river.	attrition or solution
2	traction	saltation	**suspension**	Bedload may be moved by either saltation (bouncing along the riverbed) or traction (rolling along the riverbed). Only smaller particles are held in suspension.	bedload or boulder
3	**meander**	transport	erosion	Erosion and transport are processes operating along the river's course. A meander is a landform created by the processes of erosion and deposition.	deposition
4	river cliff	slip-off slope	**waterfall**	A river cliff and slip-off slope are features associated with meanders. A waterfall is usually found in the upper course of the river.	meander
5	waterfall	**estuary**	plunge pool	A plunge pool is carved out at the base of a large waterfall as rocks are swirled around due to the velocity of the water. An estuary forms where the velocity is much less, near to the mouth of the river.	overhang
6	V-shaped valley	interlocking spurs	**lateral erosion**	A V-shaped valley forms in the upper course of the river due to vertical erosion. Characteristics include very steep valley sides, with interlocking spurs, and a narrow valley bottom. Lateral erosion tends to take place in the middle and lower reaches of a river.	upper course or vertical erosion
7	**upper course**	gentle gradient	smooth bed and banks	As you move along the river's long profile, the gradient or slope decreases. Particles within the river channel tend to become smaller, more rounded and better sorted with distance downstream, giving rise to smoother bed and banks.	lower course or silt
8	**delta**	meander	middle course	A delta forms where a river enters the sea. A meander is a key feature of the middle course of a river.	oxbow lake or slip off slope