

TASK 1: Cut out the boxes and glue them in your book to **describe** and **explain** the fluvial processes along the course of a river. Some are already in the correct order.

Erosion, Transportation and Deposition along the course of a River.

Hydraulic Action

This is when the sheer force of fast-flowing water hits the river banks and river beds and forces water into the cracks.

This compresses air in the cracks. Repeated changes in air pressure weaken the channel. Hydraulic action is responsible for vertical erosion in the upper course of a river. In the lower course of the river it contributes to lateral erosion of the banks, especially when fast flowing water hits the outside bend of a meander.

Abrasion

Attrition affects a rivers load. When stones first enter a river they will be jagged and angular. As they are transported downstream, stones collide with each other and also with the river banks and bed.

Stones which have fallen into the channel quite recently will be angular and have sharp, jagged edges. These are particularly effective tools of abrasion. Ongoing abrasion is responsible for both vertical and lateral erosion of the channel.

Attrition

This gradually knocks off the stones jagged edges so they become smooth and more rounded. Some collisions may cause a stone to be smashed into several smaller stones. These re-sized stones will be further smoothed and rounded on their journey to the sea.

This is also called corrasion. Small boulders and stones may scratch and scrape their way down a river during transport, thereby wearing down the river banks and bed.

Solution

This fluvial process is also known as corrosion. Solution refers to the dissolving of rocks such as chalk and limestone.

The load is alternately lifted then dropped in line with a local rise and fall in the velocity of the water. Essentially the particles are too large to be suspended by the river however not large enough to be dragged along as part of the bed load.

Traction

This transportation process is what happens to fine material (silt).

These fine particles such as alluvium are held up and carried within the rivers flow because they are light. Fine material carried in this way is called the suspended load.

Saltation

Rivers travelling over these types of rocks will erode them this way by causing a chemical reaction which causes the rocks to dissolve, and therefore be eroded.

This transportation process small pebbles and stones are bounced along the river bed.

Suspension

This transportation process moves large boulders and rocks along the river bed.

The material is too large to be carried by the current of the river, therefore it is rolled along the river bed. The load that is carried in this way is called the bed load.

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This is a chemical change affecting rocks such as limestone and chalk. The load transported in this way is called the solute load.

Deposition

Deposition is the process by which a river drops its load. Material deposited by a river is called sediment.

The bigger the load particle, the greater the velocity needed to keep it moving. When velocity falls large boulders are therefore the first to be deposited. The finest particles are deposited last. This explains why mountain streams have boulders along their bed, while close to a rivers mouth there is only fine silt. Along its course a river will deposit its load wherever the velocity falls. This could be at the base of a waterfall, on the inside of a meander, or where the river enters the sea or lake.

ANSWERS

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Task 2: Label the upper, lower and middle course of the river. Identify where fluvial processes occur. Draw a diagram of the fluvial processes in the course of the river they are likely to occur in.

Fluvial Processes along the Course of a River

