**L.O:** To name and describe the 3 river processes of **Erosion, Transportation and Deposition.**

Watch the video clip 1 'sticky does river processes'

Video clip 1 - [https://www.youtube.com/watch?v=3BSYRPeHfME](https://www.youtube.com/watch?v=3BSYRPeHfME) or

Video clip 2 - [https://www.youtube.com/watch?v=SNJF4AfEIVs](https://www.youtube.com/watch?v=SNJF4AfEIVs) for more detail

**S - EROSION** - Is the **wearing away** of the land e.g. the riverbed and banks.

There are four types of erosion:

- **Hydraulic Action** = the force of the water forces cracks to become larger on banks
- **Abrasion** = rocks wear away at the bed and the banks (deeper, wider river channel)
- **Solution** = water dissolves minerals which breaks up the bed and banks
- **Attrition** = where rocks hit each other and wear down (become smaller, smoother)

Erosion creates the **features of:**

- Wider channel = Lateral erosion (sideways - horizontal)
- Deeper channel = Vertical erosion (downwards)
- River cliff (steep riverbank, showing earth sides, no vegetation, loosens rocks which drop into river)
- Undercutting of river cliffs / riverbanks - often then causing vegetation to overhang.
- Smaller more rounded bedload (rocks)
Rivers need **energy** to transport material and the levels of energy change as the river moves from source to mouth. When energy levels are high, large rocks and boulders can be transported easily.

Energy levels are high when:

- **Velocity/speed** is high
- **River levels** are high or deep water/large **Volume**
- **After heavy rain** or rapid snow melt
- **Rock type** is soft, easily eroded

Annotate the diagram below describing the 4 types of transportation.

**Processes of Transportation**

**TRACTION** — This is the method for moving the largest material. This is too heavy to lose contact with the bed, so materials such as boulders are rolled along.

**SUSPENSION** — This is a means of carrying very fine river material within the water, so that it floats in the river and is moved as it flows.

**SOLUTION** — This is the dissolved load and occurs only with certain rock types that are soluble in rainwater. This is true of chalk and limestone and the load is not visible.

**SALTATION** — moves the small stones and grains of sand by bouncing them along the bed. This lighter load leaves the river bed in a hopping motion.
**DEPOSITION** - the laying/dropping of down of eroded material.

Deposition occurs when the *river's energy drops* because:

- Velocity/Speed reduces
- Water is shallow
- Lots of load (becomes too large/heavy)

It creates the river features of *floodplain, levee, slip-off slope (river beach)*

**P - 54321 challenge**

5 - Name 5 river upper course features - waterfall, gorge, v shaped valley, interlocking spurs, narrow channel, large angular load

4 - Give the names of 4 types of river erosion - abrasion, attrition, hydraulic action, solution

3 - Name the 3 courses of a river long profile - upper, middle and lower courses

2 - Name 2 lower-course features - mouth, delta, estuary, ox-bow lakes

1 - Name 1 feature of deposition - levee, floodplain, slip-off slope

**EXTENSION TASK** - Read through the extra information below and then annotate the diagram explaining what it is illustrating, use the notes given.

**NOTES:** Rivers need energy to transport material, and levels of energy change as the river moves from source to mouth.

- When energy levels are **very high**, large rocks and boulders can be transported. Energy levels are usually higher near a river's source, when its course is steep and its valley narrow. Energy levels rise even higher in times of flood.

- When energy levels are **low**, only small particles can be transported (if any). Energy levels are lowest when velocity drops as a river enters a lake or sea (at the mouth).