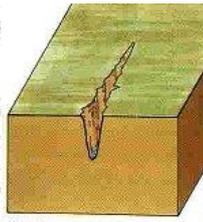
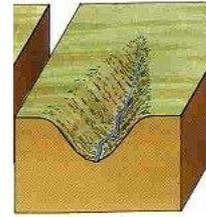


Water flowing over a surface cuts down into the ground and **erodes** the rock and soil.



The river cuts down and deepens its valley.

As the river **transports** rocks and stones, **abrasion** of rock fragments helps the river to **erode** the ground even further.



The river widens its valley

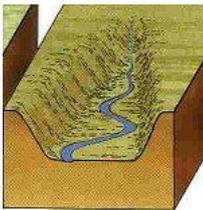
As the river cuts further down into the rock, **landslides** cause the valley sides to collapse due to **weathering**, and as a result they fall into the river from time to time.

The river **transports** the material it has eroded away in a downstream direction (the way the river flows).

While the river **transports** the rocks and sediment it wears them down through **attrition** as it travels.

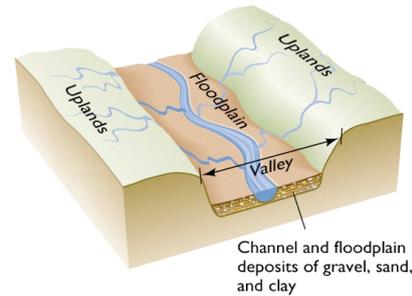
This **erosion** and **transport** of rock and soil creates a clear **v-shaped valley**.

Over time as the river cuts down more, and there is further **erosion**, and gradually the **river valley is widened**.



The river continues to widen its valley.

Further from its source the river slows down and begins to wind and bend over the valley floor. These **bends** are called **meanders**.



Channel and floodplain deposits of gravel, sand, and clay

Water flows **faster** on the **outside** of the bend because it is more distance to travel in the same time.

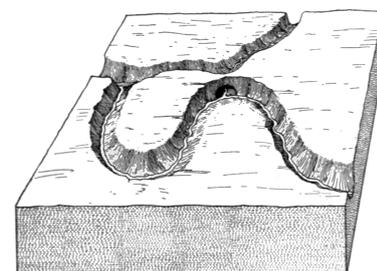
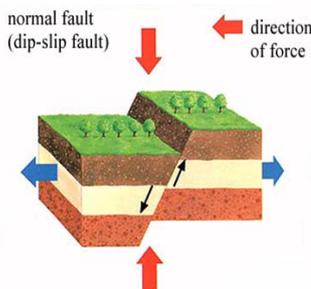
This faster flow causes more **abrasion** and **weathering** of the river bank on the outside of the bend.

Water flows more **slowly** on the **inside** of a bend. This means the river begins to **deposit** sediment on the inside of a bend as it has **less energy** to carry the material it is transporting.

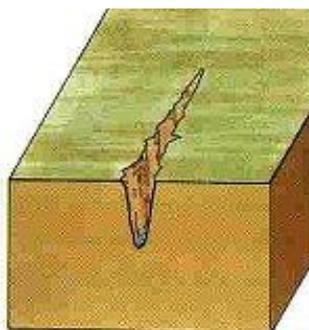
When a river **floods** its wide valley floor it will **deposit** a large amount of sediment as it will slow down. Over time and after several floods this will create a **flat flood plain** either side of the river.

In some locations **tectonic processes** cause the earth's crust to be **lifted up**. This can cause a river to cut down and create a deep canyon.

Where **tectonic uplift** happens **meanders** and **valleys** can become '**entrenched**' - they are trapped by the land that has been lifted up around them.

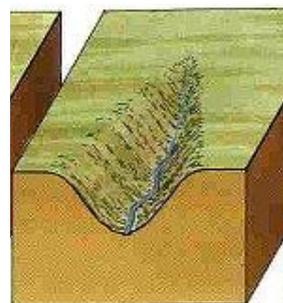


Water flowing over the ground cuts down and **erodes** the rock and soil.



The river cuts down and deepens its valley.

As the river **flows** rock fragments bang and scrape on the ground this helps the river to **erode** the ground even further. This is **abrasion**.



The river widens its valley

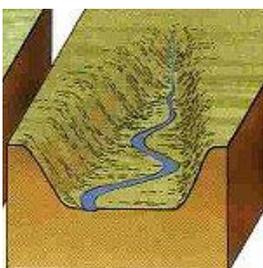
As the river cuts further down into the rock, it makes the sides of the valley weaker and they fall into the river creating a **V shaped valley**.

The river **transports** the material it has eroded away.

While the river **transports** the rocks and sediment they bang and knock against each other which wears them down. This is called **attrition**.

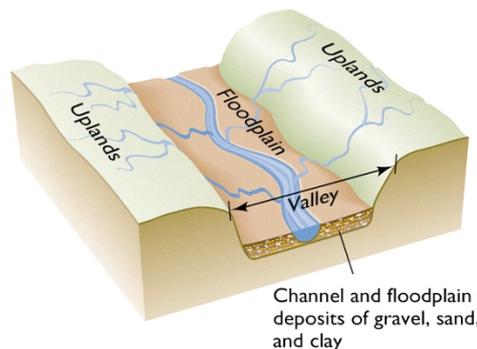
This **erosion** and **transport** of rock and soil creates a clear **v-shaped valley**.

Over time as the river cuts down more, and there is further **erosion**, and gradually the **river valley gets wider and wider**.



The river continues to widen its valley.

Further from its source the river slows down and begins to wind and bend over the valley floor. These **bends** are called **meanders**.



Water flows **faster** on the **outside** of the bend because it is more distance to travel in the same time.

The the water flows faster it causes more **abrasion** and **erosion** of the river bank on the outside of the bend.

Water flows more **slowly** on the **inside** of a bend. This means the river begins to **deposit** sediment on the inside of a bend.

When a river **floods** its wide valley floor it will **deposit** a large amount of sediment as it will slow down. Over time this will create a **flat flood plain** either side of the river.

Chance Card 1

Problem

What would happen if people built more houses and roads on the flood plain of the river? What would happen to the level of infiltration and run-off? What might be a greater problem if they did this?

Your Thoughts?

Chance Card 2

Problem

What would happen if people built a dam on the river to create a huge lake as a reservoir? What would happen to the level of erosion and deposition? What would eventually happen to the lake?

Your Thoughts?

Chance Card 3

Problem

What would happen if climate change meant the level of rainfall in this drainage basin was to increase? What would happen to the levels of erosion and deposition?

Your Thoughts?