The Active River (see pages 308-314)

-6 million years ago, the area known today as the Grand Canyon was as flat as a pancake

- Water from the _____ _____ cut down into the rock

-Canyon was formed over millions of years through a process called _____, which is the process by which _____

_____

What are some other "agents" of erosion?

-The Grand Canyon is now approximately 1.6 km deep and 446 km long

-Not every river is the same, and there are many factors that contribute to stream development and the rate of stream erosion

The Water Cycle

Have you ever wondered how rivers and streams keep flowing?

How do they they get their water?

The water cycle is the _____

_____

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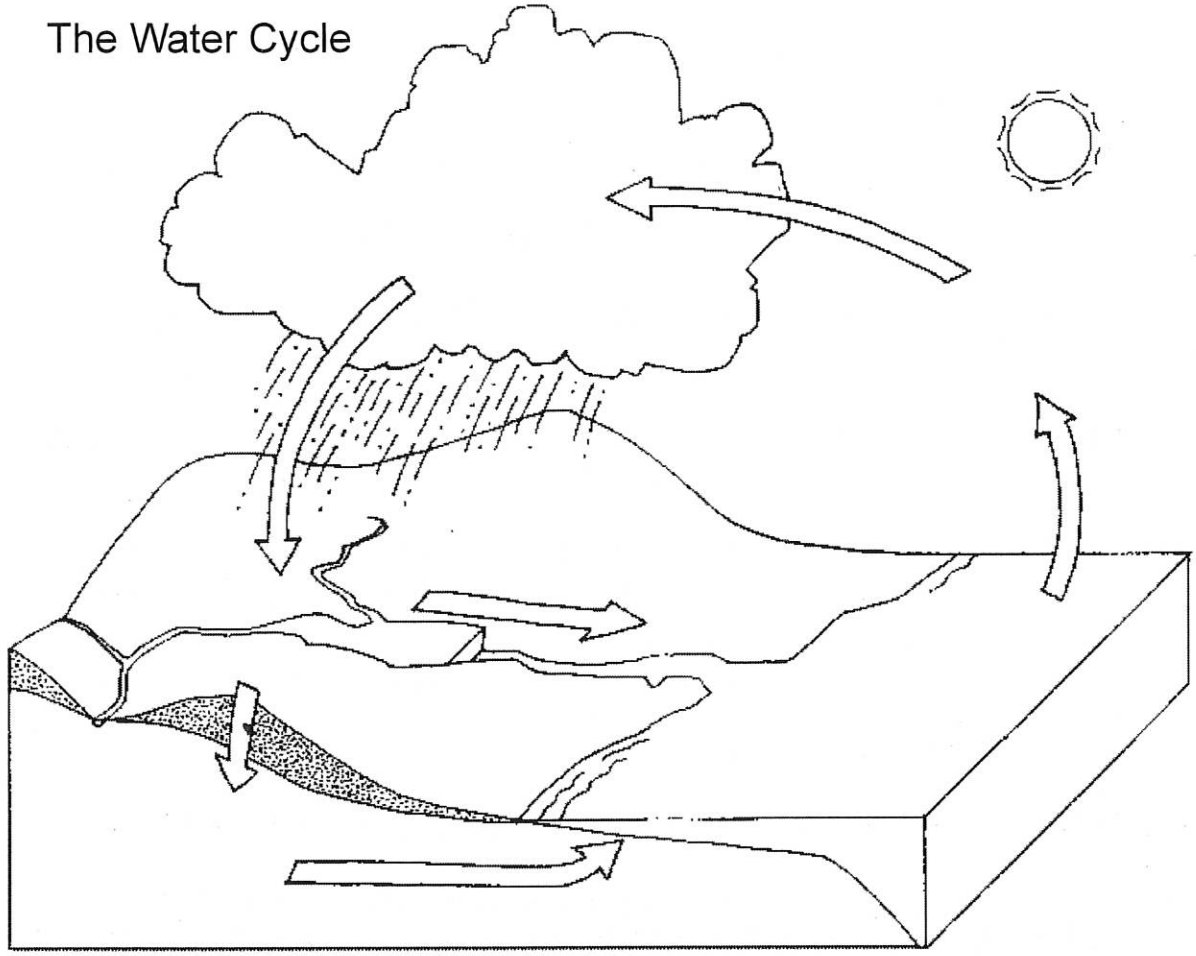
The Water Cycle



Define and **label** the following parts of the water cycle:

Precipitation:

Condensation:

Evaporation:

Infiltration (sometimes percolation):

Runoff:

Water Table:

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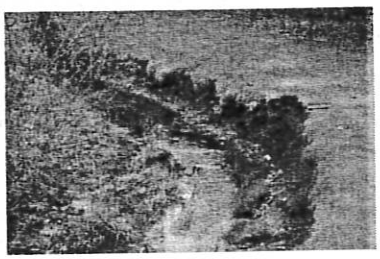
Stream Erosion



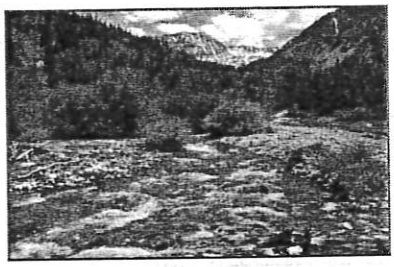
- As a stream forms, it _____ rock and soil to form a

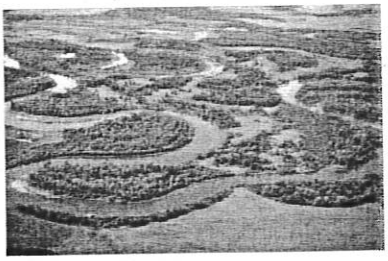
- A channel is _____

- When stream channel first forms, usually _____ and _____.

- Over time the stream transports rock and soil downstream and makes the channel _____ and _____.

-When streams become longer and wider, they are called _____





- A stream's ability to erode is influenced by 3 factors: Gradient, Discharge and Load

1. Gradient: The measure of the change in elevation over a certain distance. **High gradient gives stream or river more erosive energy**

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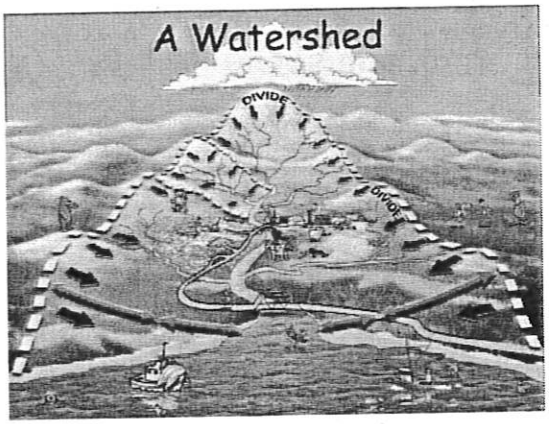
River Systems

- Many streams and rivers join together to form a network of flowing water on land

- A stream that flows into a lake or into a larger stream is called a _____

- River systems are divided into regions called _____, or drainage basins, which is _____



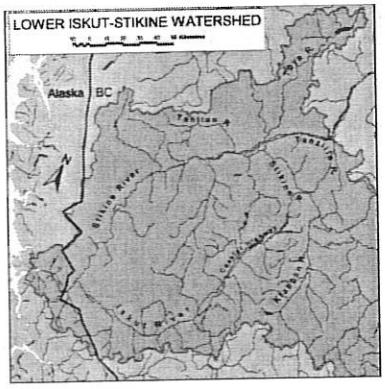
Watersheds are separated from each other by an area of higher ground called a _____, which is defined as _____

_____

_____

- The largest watershed in the US is the _____ River watershed

The Mississippi River watershed covers more than _____ of the US.



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Stream and River Deposits

- You can think of a river as a giant liquid conveyor belt for moving sediment

- Erode but also renew

- The rock and soil (load) eroded by rivers are eventually dropped or settle downstream

- This process, known as _____, is where these eroded materials are laid down or dropped.

-Rock and soil deposited by a stream is called _____.

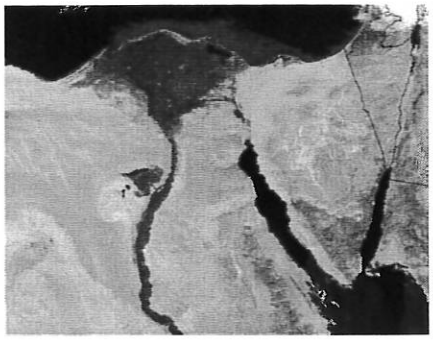
-Rivers and streams deposit sediment where the speed of the water current _____, whereas _____ occurs where the speed of the water is _____.

- Heavy minerals are usually deposited at places in a river where the current slows down

- Known as a _____ deposit which may contain gold

- A river's current _____ when it empties into a large body of water, such as a lake or ocean

- When this happens, its load is often deposited creating a fan-shaped pattern of sediment called a _____.



- Forms flat surface, usually made of fine sediment

- Form new land and cause coastline to grow

- When a fast flowing mountain stream flows onto a flat plain, the stream slows down very quickly

- Drops sediment, froming an _____ _____, which unlike deltas, form on dry land.

- During periods of high rainfall or rapid snow melt, a sudden increase in the volume of water flowing (_____), can cause the river to over flow its banks.

- The areas that forms from sediment deposited when a river overflows its banks is called a _____

- Flood plains are rich farming areas because periodic flooding brings new fertile to the land
- May also cause extensive damage = $$$$$ and loss of lives