

1. Turn in your Water Speed and Erosion Lab.
2. Open your notes on Erosion and title a new page Erosion and Deposition by Flowing Water.

# Lesson Objectives

1. Explain how flowing water causes erosion and deposition.
2. Describe how runoff, streams, and rivers change Earth's surface.
3. Identify features caused by groundwater erosion and deposition.

# How Flowing Water Causes Erosion and Deposition

Flowing water can erode rocks and soil.



Water dissolves minerals from rocks. This process usually happens really slow.

## Continued

The ability of water to erode is affected by the **VELOCITY** or **SPEED** of the water. The size of the eroded particles also depends on the **VELOCITY** of the water.



## Continued

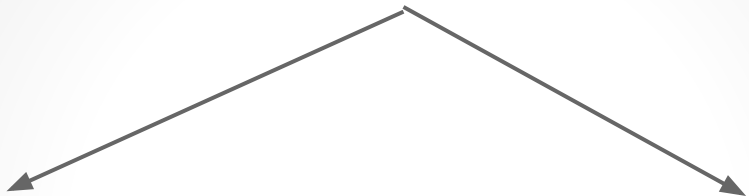
Moving water also picks up and carries particles of soil and rock. Eventually, the water deposits the materials.

As water slows, larger particles are deposited.

As water slows even more, smaller particles are deposited.

# Water Speed and Erosion

Faster-moving water has more energy.



Can carry larger  
particles.

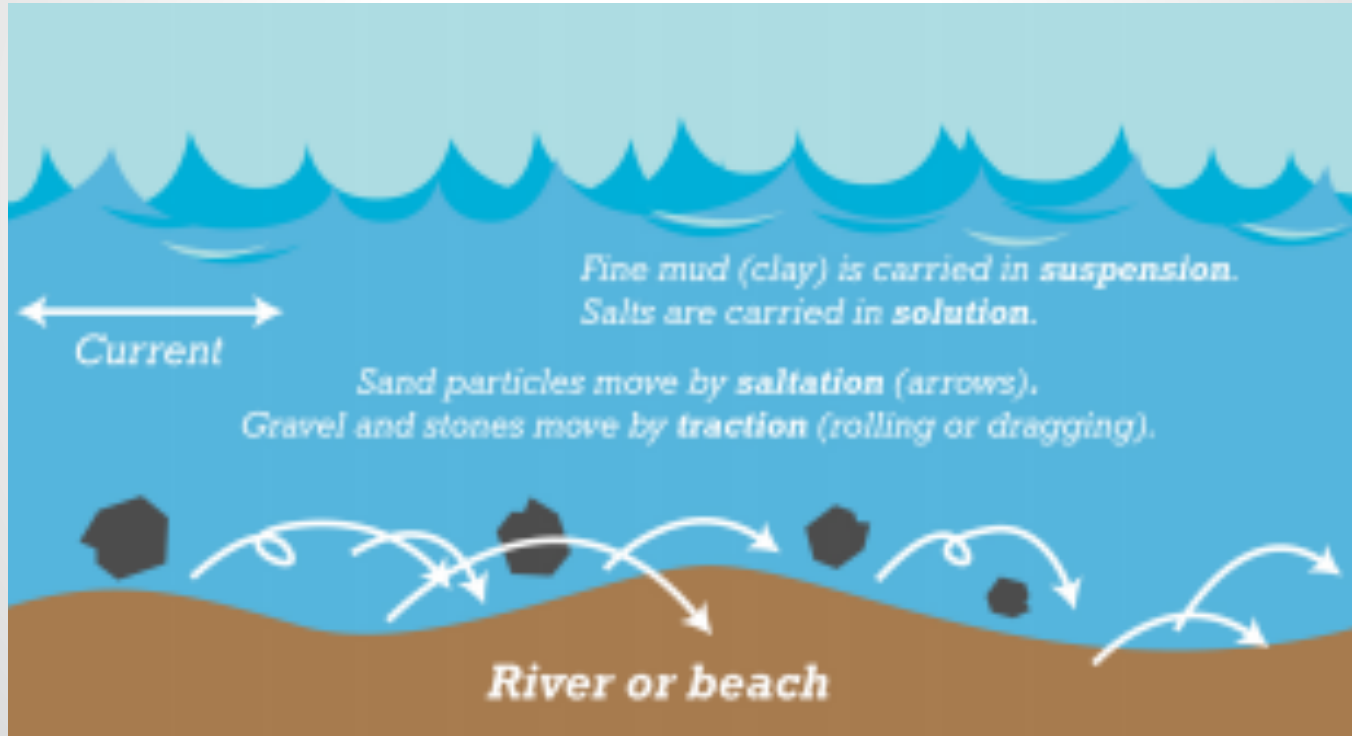
Can carry more  
particles.

## WHAT CAUSES WATER TO MOVE FASTER?

1. Slope
2. Amount of water that's in the stream

# Particle Size and Erosion

The size of particles determines how they are carried by flowing water.

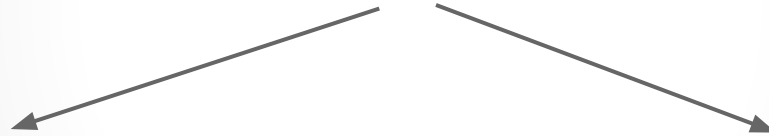


# Deposition by Water

Flowing water slows down when it reaches flatter land or flows into a body of still water.

**WHAT DO YOU THINK HAPPENS THEN?**

The water starts dropping the particles it was carrying.



As water slows, it drops  
the largest particles first.

The smallest particles settle  
out last.



# Erosion by Runoff

When a lot of rain falls in a short period of time, much of the water is unable to soak into the ground. Instead, it runs over the land.

## GRAVITY

Causes the water to flow from higher to lower ground. As the runoff flows, it may pick up loose material on the surface, such as bits of soil and sand.

## PLANTS

Runoff is likely to cause more erosion if the land is bare. Plants help hold the soil in place.

# Erosion by Mountain Streams

Streams often start in mountains, where the land is very steep.

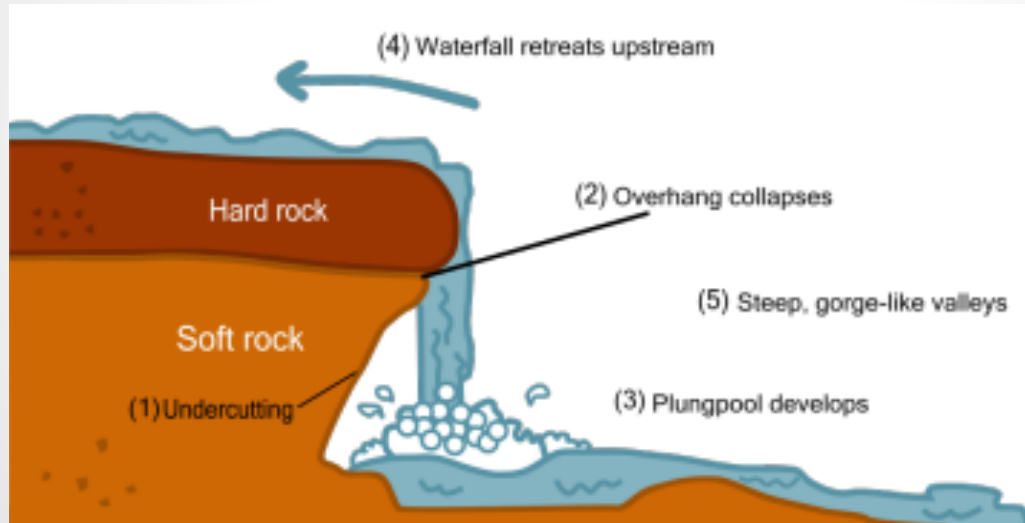


A mountain stream flows very quickly because of the steep slope. This results in a lot of erosion and very little deposition.

rapidly falling water digs down into the stream bed and makes it deeper. It carves a narrow, V-shaped channel.

# Erosion and Waterfalls

Mountain streams may erode rock into waterfalls. A waterfall forms where a stream flows from an area of harder to softer rock. The water erodes the softer rock faster than the harder rock.



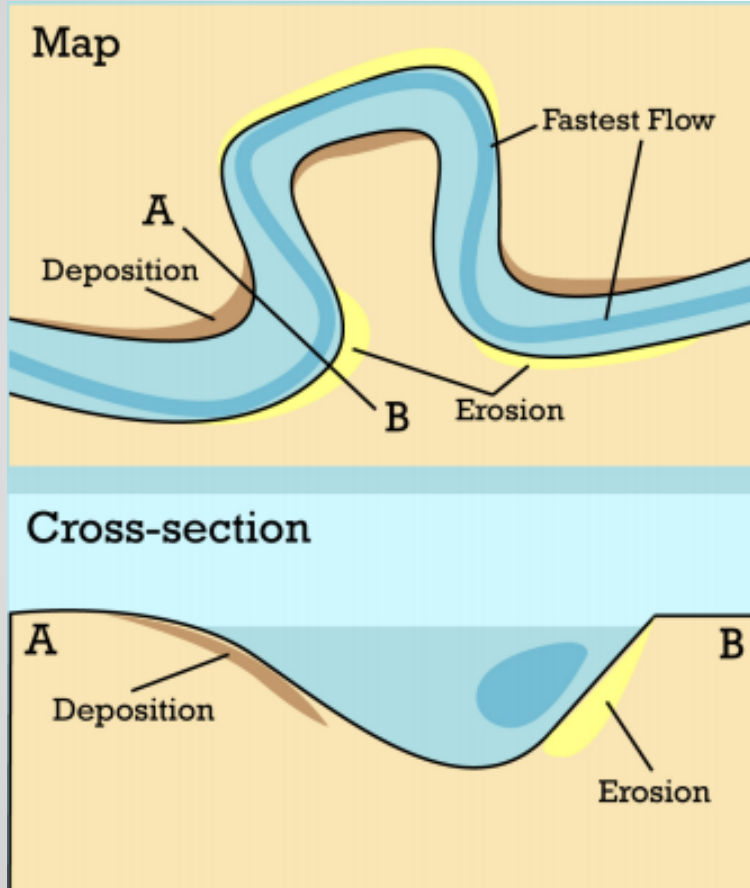
Why does a waterfall keep moving upstream?

# Erosion by Slow-Flowing Rivers

Rivers flowing over gentle slopes erode the sides of their channels more than the bottom. Large curves, called **MEANDERS**, form because of erosion and deposition by the moving water. The curves are called meanders because they slowly “wander” over the land.



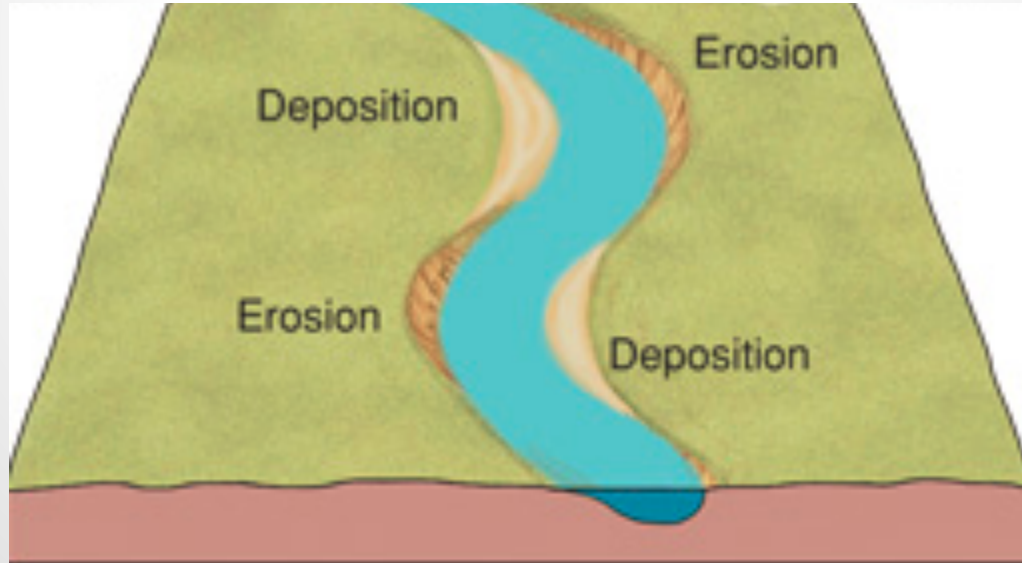
# Continued



Meanders form because water erodes the outside of curves and deposits eroded material on the inside.

# Deposition by Streams and Rivers

When a stream or river slows down, it starts dropping sediments. Larger sediments are dropped in steep areas, but smaller sediments can still be carried. Smaller sediments are dropped as the slope becomes less steep.



# Deltas

Deposition also occurs when a stream or river empties into a larger body of still water. In this case, a delta forms. A delta is shaped like a triangle. It spreads out into the body of water.



# Deposition by Flood Waters

A flood occurs when a river overflows its banks. This might happen because of heavy rain.

