

26.1 Weathering Erosion & Rivers



Summarize main points from each video.

Video Title / topic _____

Video Title / topic _____

Video Title / topic _____

Topic Introduction



Summarize your understanding of each paragraph.

Erosion is a process where natural forces like water, wind, ice, and gravity wear away rocks and soil. It is a geological process, and part of the rock cycle. Erosion occurs at the Earth's surface, and has no effect on the Earth's mantle and core

Most of the energy that makes erosion happen is provided by the Sun. The Sun's energy causes the movement of water and ice in the water cycle and the movement of air to create wind

Erosion can cause problems that affect humans. Soil erosion, for example, can create problems for farmers. Soil erosion can remove soil, leaving a thin layer or rocky soil behind. Erosion can also cause problems for humans by removing rocks or soil that support buildings.

Large tropical rivers like the Paraná, Indus, Brahmaputra, Ganges, Zambezi, Mississippi and the Amazon carry huge amounts of sediment down to the sea. The Nile, perhaps the world's longest river, carries much less sediment than the others.

Read/Summarize Text



1. Read the passage.
2. Underline key expressions in each sentence.
3. Re-write each word (or expression) you underlined.
4. Summarize the passage.

Erosion.

Ice erosion happens when a glacier moves downhill. As the ice of the glacier moves downhill, it pushes and pulls earth materials along with it. Glaciers can move very large rocks. Ice erosion can happen in another way. Cold weather causes water inside tiny cracks in rocks to freeze. As it freezes, the ice gets bigger, and pushes hard against the rock. This can break the rock. Wind erosion occurs when wind moves pieces of earth materials. Wind erosion is one of the weakest kinds of erosion. Small pieces of earth material can be rolled along the ground surface by wind. Very small pieces can be picked up and carried by the wind. Sometimes, wind can carry small pieces of earth materials over large distances. Some sediment from the Sahara Desert is carried across the Atlantic Ocean by wind.

1

2

<https://simple.wikipedia.org/wiki/Erosion>

Re-write words you underlined

3

Using a complete sentence, summarize or rephrase the passage

4

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

Erosion mechanics

Most meanders occur in the region of a river channel with shallow gradients, a well-developed floodplain, and cohesive floodplain material. Deposition of sediment occurs on the inner edge, because the secondary flow of the river sweeps and rolls sand, rocks and other submerged objects across the bed of the river towards the inside radius of the river bend, creating a point bar below the slip-off slope. Meandering morphology is dependent upon similar bank erosion and bar growth rates.

Erosion is greater on the outside of the bend where the soil is not protected by deposits of sand and rocks. The current on the outside bend is more effective in eroding the unprotected soil, and the inside bend receives steadily increasing deposits of sand and rocks, and the meander tends to grow in the direction of the outside bend, forming a small cliff called a cut bank. This can be seen in areas where willows grow on the banks of rivers; on the inside of meanders, willows are often far from the bank, whilst on the outside of the bend, the roots of the willows are often exposed and undercut, eventually leading the trees to fall into the river. This demonstrates the river's movement. Slumping usually occurs on the concave sides of the banks resulting in mass movements such as slides.

Oxbow lakes

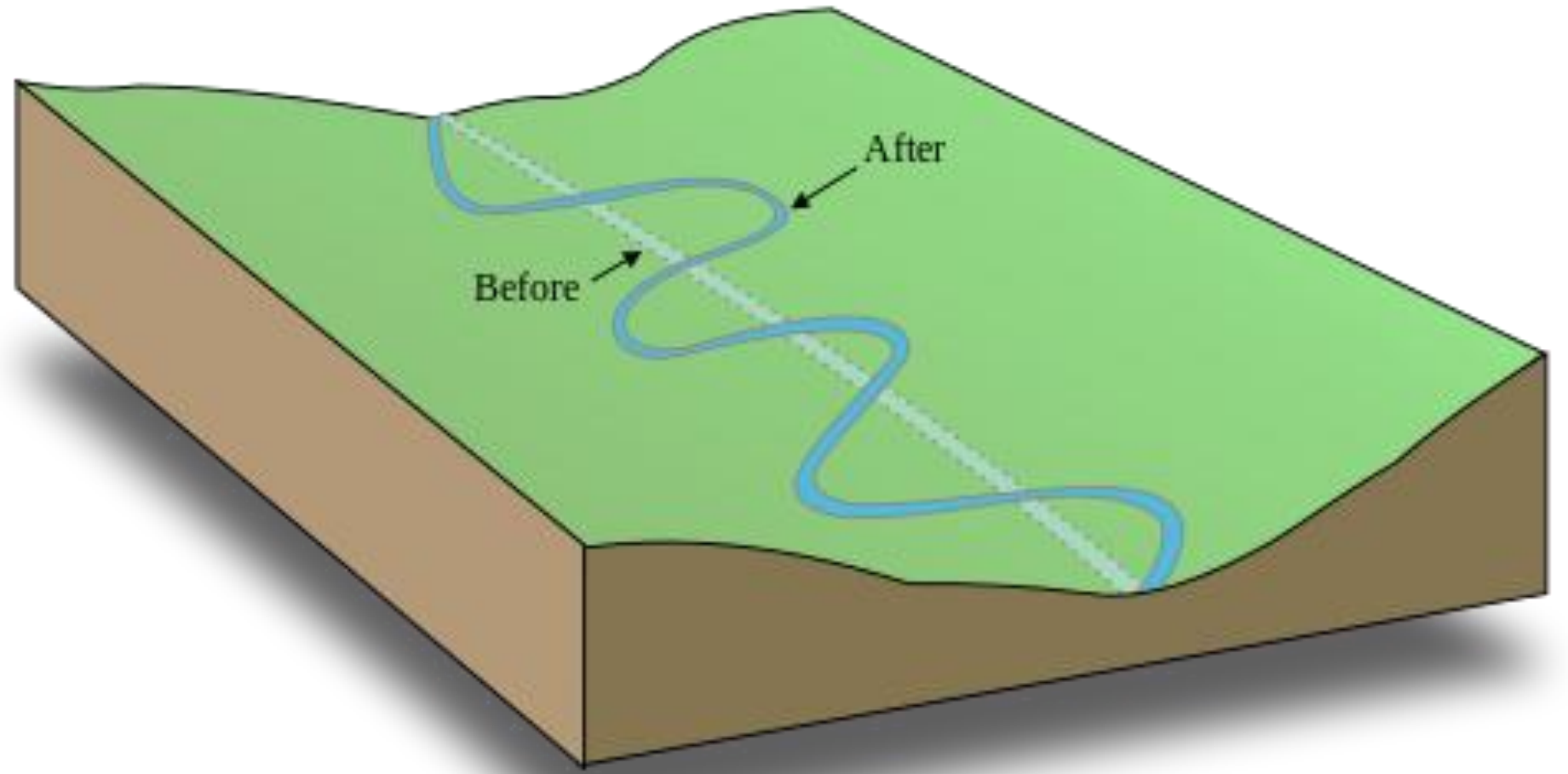
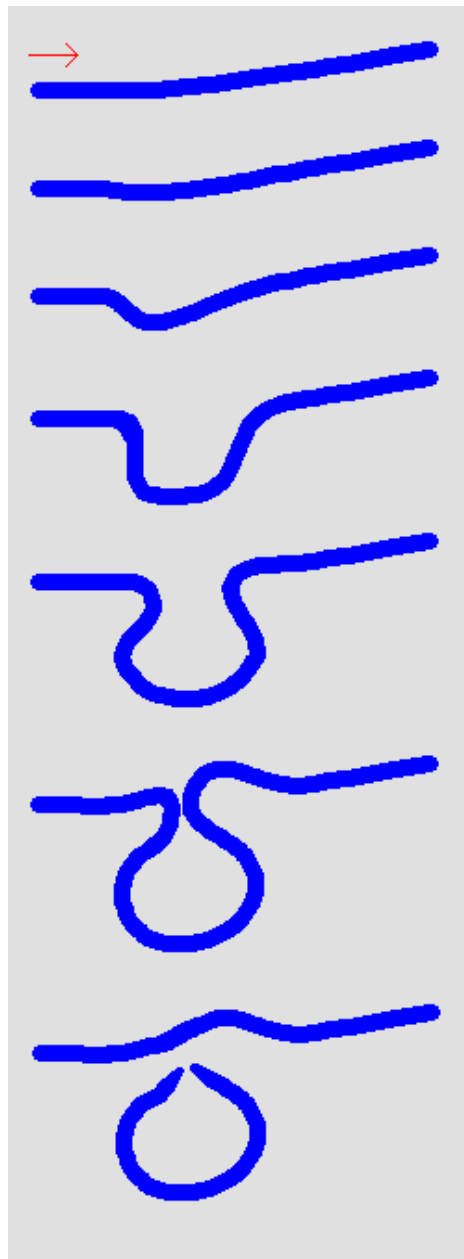
Oxbow lakes are created when growing meanders intersect each other and cut off a meander loop, leaving it without an active cutting stream. This process is usually linked to flooding where the river will tend to the path of least resistance. The oxbow, being of much lower energy than the more direct path, collects more and more deposited sediment each season of flooding until it becomes independent from the river. The largest oxbow lakes will be in areas with wider flood plains where the rivers have more room to meander. Over a period of time, these oxbow lakes tend to dry out or fill in with sediments.

Draw Illustration



Copy and Label the Illustration in the Space Provided

Life history of a meander



A hypothetical stream bed following a tilted valley. The maximum gradient is along the down-valley axis represented by a hypothetical straight channel. Meanders develop, which lengthen the course of the stream, decreasing the gradient.

<https://en.wikipedia.org/wiki/Meander>

Draw (Copy) the Illustration Here

Interpret the images



Write a 35-50 word mini-essay about the images shown below:

Google Images: meandering river



Show-Off Your Smarts!



Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

Q1. How can this information be applied to a young-person's life?

Q2. How does this information apply to (or impact) communities?

Q3. When do scientists need to apply this information? How?

Q4. How would a person from 100 years ago view this information?

Q5. How does this topic connect to other science topics or math?

Write down at least three words introduced or covered by this topic.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Make a Poem

In the space provided, write a rhyming or non-rhyming poem for the following topic: Meandering River.