

When you think of a dam, you might imagine massive concrete walls holding back a body of water. Many dams are constructed today to capture the energy of moving water and convert it into electricity through hydroelectric power. However, dams and levees also play an important part in controlling flooding.

There are several differences between dams and levees. Levees, or dikes, are man-made hills built to keep a river from overflowing its banks. A levee is put in place to contain the river and protect nearby homes and businesses. In times of high flooding, water can breach the levee, flowing over the top or even seeping through the bottom. The 2005 flooding of New Orleans during Hurricane Katrina was due to levees breaking. This disaster led to more than 1,600 deaths, roughly one million displaced people, and billions of dollars in damage.



The Hoover Dam on the Colorado River

While levees offer protection from an overflowing river, a dam is built across a waterway to block and slow the river's flow. Dams can occur naturally due to falling trees, collections of debris, or even animals. For example, you've probably heard of, or maybe even seen, a beaver dam. A dam causes water to pool behind it in a reservoir, or an artificial lake used to store water. The water in the reservoir can be used in times of drought.

A dam traps water after heavy rains and prevents the water from flooding the stream. When the flood threat is low, water is released through a pipe or gate in the dam called a spillway. This reduces the amount of water that reaches the main stream or river at one time. On a large river, a series of dams works to keep reservoir levels stable. Water is released through spillways as the elevation drops. This way, no single reservoir is responsible for containing the heavy rains. The river's banks and reservoirs are controlled.

Humans use dams to capture the energy from moving water in rivers. Often cement dams are used for hydroelectric power because they are strong enough to hold the necessary equipment. Cement dams are often easier to maintain. That is because problems can be fixed before they become severe and damage the structure of the dam.

Dams and levees have been around since humans first began farming the land. The first farming civilizations were found in ancient Mesopotamia, which was located between the Tigris and Euphrates Rivers. In fact, the word *Mesopotamia* means “the land between two rivers.” While river water was used for drinking and irrigation, humans still struggled with getting water to their fields. Also, they had to work to combat the rising river floods, which were unpredictable in timing and size. The floods made the land fertile with rich silt deposits. But the floods also endangered lives and could wipe out a season’s crop, destroying the food supply.

The banks of the Euphrates are higher than the Tigris, and the floods of the Euphrates sometimes would reach the Tigris’s banks. Ancient engineers used the natural flow of these rivers to design an irrigation system that used the Euphrates as the water supply and the Tigris as a drain.

Mesopotamian engineers had to worry about water storage, flood control, and crop irrigation. Irrigation systems were essential for agriculture. Dams and dikes were used to control the direction and flow of the water into a series of canals. Flow was controlled into the canal by placing a dam across the river. The dam kept the water level high enough to fill the canal. Excess water spilled over and back into the main river. The dam also allowed water storage for times of drought. Canals would then direct the flow of water into and out of the fields as needed. Drainage systems would then relieve excess water from the fields so the crops did not drown.

Mesopotamians learned to live with the unpredictable waters of the Tigris and Euphrates by using technology. Even though dams and levees are basic engineering tools that support everyday needs, during war they can also be used as weapons. Damming a river to stop the flow of the water could completely cut off water to enemies downstream. Releasing a reservoir and sending a flood downstream could wipe out invading armies. These tactics aided the Babylonian conquest of the lower city-states of Sumer and helped cement Babylonian rule. Dams and levees proved to be valuable technologies to the Babylonian people, as well as to later human civilizations.



Water has flooded over the levees that border this river’s channel.

After reading the passage, answer the following questions:

- 1.** What is the meaning of the word *Mesopotamia*?
 - A.** the land between two rivers
 - B.** large, fast river
 - C.** land of military power
 - D.** the Tigris River god

- 2.** What is a levee?
 - A.** a wall that guides the flow of water away from a dam
 - B.** a natural rock formation that helps contain water
 - C.** a very large well that is used to contain water gathered by a dam
 - D.** a hill that prevents a river from overflowing its banks

- 3.** How did dams and levees support Mesopotamian civilization?
 - A.** Dams and levees helped create irrigation systems that supported agriculture.
 - B.** Dams encouraged a growth in recreational activities, while levees helped create numerous Mesopotamian industries.
 - C.** Dams and levees held back flood waters to keep Mesopotamia a desert landscape.
 - D.** Dams and levees were only used for military purposes, and helped Mesopotamians defeat enemies.

- 4.** Ancient Mesopotamians are remembered for having an advanced culture. In what ways are their technological advances still important and useful today? Use specific examples from the reading passage in your answer.