

Name: _____ #: _____

Watershed Dividing Up Water on the Colorado River

Estimated Time: 15-30 minutes

Age Range: 5th grade

What you need: paper and a pencil

Background Information:

The Colorado River supplies water to almost 40 million people in the western United States and is important to help humans and other organisms survive. Some people who would need to use the Colorado River are farms and people in agriculture, cities, businesses and industry, and people who like to do things on the river (recreation). Also, the environment needs the river to survive!

In the western U.S. we need to very carefully divide up water among all the people that need to use it. When someone wants to use water, they need to get a **water right**. A water right tells someone how much water they can use and what they can use it for. Water rights are given in units called **acre-feet**, which is the size of a football field covered in 1 foot of water deep.

New Words

Water right – tells someone how much water they can use and what they can use it for

Acre-foot – a unit of measure for water; about the size of a football field covered in 1 foot of water deep

Prior appropriation – a legal system that says the first person to have water rights can keep their rights if they use the water for a beneficial use

Beneficial use – using the water for a good reason and not wasting it

Senior vs. Junior rights – the person who got water rights first in time (senior rights), gets water first. The person who got water rights later (junior right), gets water only after the senior rights get all their water.



Why do you think we need to give water rights instead of just letting people use the water in dry places like the western U.S.?

We give water rights based on a legal system called **Prior Appropriation**. It has two main concepts:



Beneficial Use

You need to use water for one of the uses we talked about. No wasting our water!

Senior vs. Junior Rights

The people who got water rights first (senior rights), get their water before the people with later (junior) rights.

Let's try to divide up some water from the Colorado River using water rights! The Colorado river has an average flow of 15 million acre-feet of water each year. Each and every drop of that water flowing down the Colorado River will be divided to people's water rights.

Below are three different water rights on a stream in the Colorado River Basin. Each has the name of the holder, the year they got the right in, and the amount of water they have the right to use every year. **Circle** the senior water right holder (the oldest right), **square** the most junior water right (the newest right), and **underline** the water right in between the senior and junior rights.

Agriculture

Year: 1900

Amount: 15 acre-feet

City

Year: 1950

Amount: 5 acre-feet

Environment

Year: 1890

Amount: 10 acre-feet

The Environment is the most senior water right holder, so they will get their water first. Then Agriculture has the next right to be filled. They will get their water after the Environment. Lastly, the City is the most junior water rights holder because they got their water rights last. The City will get water after the Environment and Agriculture.

In the charts below, you will divide up the water from the Colorado River to the water rights holders in the order of prior appropriation, which we figured about above. Each chart represents a year with a different amount of water available. Some of the water rights holders may get all of their water, or some may not get much at all!

Wet Year = 36 acre-feet available (hint: divide up 36 into the boxes below, filling the senior right first!)

| Environment | Agriculture | City | Total |
|------------------------------------|------------------------------------|-----------------------------------|-----------|
| Year: 1890 Amount: 10 acre-feet | Year: 1900 Amount: 15 acre-feet | Year: 1950 Amount: 5 acre-feet | |
| acre-feet | acre-feet | acre-feet | acre-feet |

Does every water right holder get all their water? _____

Normal Year = 30 acre-feet available (hint: divide up 30 into the boxes below, filling the senior right first!)

| Environment | Agriculture | City | Total |
|------------------------------------|------------------------------------|-----------------------------------|--------------|
| Year: 1890 Amount: 10 acre-feet | Year: 1900 Amount: 15 acre-feet | Year: 1950 Amount: 5 acre-feet | |
| acre-feet | acre-feet | acre-feet | acre-feet |

Does every water right holder get all their water? _____

Dry Year = 26 acre-feet available (hint: divide up 26 into the boxes below, filling the senior right first!)

| Environment | Agriculture | City | Total |
|------------------------------------|------------------------------------|-----------------------------------|--------------|
| Year: 1890 Amount: 10 acre-feet | Year: 1900 Amount: 15 acre-feet | Year: 1950 Amount: 5 acre-feet | |
| acre-feet | acre-feet | acre-feet | acre-feet |

Does every water right holder get all their water? _____

Oftentimes, there is not enough water to fill every water right on the Colorado River, especially in times of drought. When there is not enough water to go around, we can try to make water use more efficient and people can collaborate (work together and share).

Why did the city only get 1 acre-foot of water in the dry year?

What are some ways that you can think of that might make water use more efficient?

Why is it important to have water rights for dividing up water the Colorado River's water?
