

# Settlers Didn't Have Showers!

## *Water in Arizona, Then and Now*

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<b>Grade Level</b>	2
<b>Duration</b>	3 class periods

### National Standards

#### GEOGRAPHY

##### Element 1: The World in Spatial Terms

1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

##### Element 5: Environment and Society

14. How human actions modify the physical environment

##### Element 6: The Uses of Geography

17. How to apply geography to interpret the past

18. How to apply geography to interpret the present and plan for the future

### AZ Standards

#### MATHEMATICS

##### Measurement and Data

2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

### Arizona Social Science Standards

#### GEOGRAPHY

**The use of geographic representations and tools help individuals understand their world.**

2.G1.1 Use and construct maps, graphs, and other geographic representations of familiar and unfamiliar places in the world; and locate physical and human features.

**Human-environment interactions are essential aspects of human life in all societies.**

2.G2.1 Explain how weather, climate, and other environmental characteristics affect people's lives in a place or region being studied.

2.G2.2 Describe how human activities affect the communities and the environment of places or regions.

2.G2.3 Describe the positive and negative effects of using natural resources.

### Overview

Students should learn about the past and present use of water, because it provides a perspective on why regions were settled and how water is utilized today in homes.

### Purpose

In this lesson, students will learn about human settlements along rivers, the water cycle, and graph water usage in hopes that students will understand the value of our natural resources.

### Materials

- Computer and projection device
- Important Rivers, Streams, and Washes of Arizona map

<http://geoalliance.asu.edu/sites/default/files/maps/Az-rivers.pdf>

- Home Water Use worksheet
- Colored pencils or crayons
- Quiz and Answer Key
- PowerPoint presentation
- Water Cycle (labeled and unlabeled)

### Objectives

The student will be able to:

- Identify sources of water in Arizona.
- Locate the Colorado River on a map.
- Graph how water is used in the home.

### Procedures

#### SESSION ONE and TWO

1. Ask students where water comes from. Allow them time to respond and write answers on board.
2. Project PowerPoint Picture 1- Important Rivers, Streams, and Washes of Arizona. Distribute the Important Rivers, Streams, and Washes of Arizona map and colored pencils or crayons to students. Point out the compass rose at the top of the map and have students name the missing cardinal directions (S,E,W) and write them in on their maps. Write the name "Colorado River" on the board and have students locate it on their maps. If necessary, help them by saying it flows from the northern part of Arizona to the western (left) part. Ask a student to come up and point out where the Colorado River is on the slide. Have the students color where the Colorado flows. If any student guessed "rivers" at the beginning of class, be sure to circle "rivers" on the board or add it to students' answers from the brainstorming session.
3. Project PowerPoint Picture 2- Water Cycle. Distribute the unlabeled version of the Water Cycle. Have the students label their copy of the water cycle as you explain it. Circle precipitation (rain, snow, etc.), run-off, and groundwater (water close enough to the surface to use for wells) on the board or add them to students' answers. Have the students repeat all of the various ways that we get water by reading the circles on the board.
4. Project PowerPoint Picture 3- Colorado River. Ask students if they have been there. What does it look like from the picture? Have them point to the Colorado River that they colored on their map.
5. Project PowerPoint Picture 4- Important Rivers, Streams, and Washes of Arizona. Ask students where they think pioneers settled in Arizona. Explain that settlers made homes near water. They made homes near the Gila and Salt Rivers in Phoenix and the Santa Cruz River in Tucson. Also, the Spaniards raised cattle in the Southeastern highlands of Arizona because of groundwater. Some settled near the Colorado River in Yuma. Let's not forget our northern Arizona settlers who used the water from the Little Colorado and Verde Rivers. Have the students find these additional rivers on the map and color them.
6. Project PowerPoint Picture 5- Water Sources. Ask the students if they see any other sources of water that have not been circled on the board.
7. Ask students what water is used for now. Record these uses on another part of the board. Show PowerPoint Picture 6- Water Now.
8. Ask students about their own use of water at their homes. How do you use water at home? Allow students to discuss water use in their homes. Write on board. Have the students guess what usage results in the most water.

## SESSION THREE

1. Distribute colored pencils or crayons and the Home Water Use worksheet.
2. Project PowerPoint 7- Household Water Use. State that this bar graph shows the way we use the water in our homes. With this type of graph, the longer the colored area, the greater the water use. So, which colored area is the longest? If we look to the bottom, it tells us it is the bathroom. So most families use the largest amount of water in the bathroom. What is the smallest bar on the graph showing? If we look to the bottom, it tells us that the smallest bar is for the garden or the yard. So most families use the smallest amount of their water on the outside area. What do you see about the last two bars? Yes, they are the same. So most families use pretty much the same amount of water in the kitchen and when washing their clothes.
3. Tell students that they are going to make their own diagram showing how most families use water in their homes. Model how to color the bar graph for each usage.  
 Bathroom = 4 squares (red)  
 Kitchen = 2 squares (yellow)  
 Laundry = 2 squares (blue)  
 Gardening = 1 square (green)
4. Demonstrate that when students add all of the squares, it equals the bottom bar graph for Home Water Use, the total.
5. Pass out Quiz. Read directions and questions to the students. Review correct answers when complete.

## Assessment

### Geography

The Quiz can be graded for understanding geography concepts. Mastery on the quiz will be considered 80% or higher.

### Mathematics

Home Water Use worksheet can be graded for accuracy. Three of the 4 bar graphs done correctly will be considered mastery.

## Extensions

Many parts of Arizona are a desert. The largest cities in Arizona are in the desert. Water is scarce in these parts of Arizona and we must all learn to use our water carefully. Can students help use water more carefully? Have students brainstorm ways to lessen their water use in these different parts of the home. Are there ways to use less water at school?

Draw a poster of how families use water. Divide paper into four squares and have students draw and color four pictures showing ways water is used in the home, based on what they learned from the graph.

## Sources

- <http://www.azgovernor.gov/kids/ColoringBook.asp>
- [usgs.gov](http://usgs.gov)
- [nps.gov](http://nps.gov)
- [usda.gov](http://usda.gov)
- Dr. Ron Dorn, Professor of Geography, Arizona State University