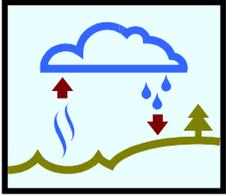


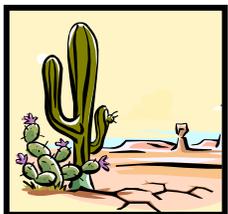


## The Water Cycle



Every living thing, including plants, animals and people, needs water to survive. The water that we drink and use today is the same water that was on the planet during the time of the dinosaurs! That's because water gets continually recycled through the **water cycle**. The first step in this cycle is called **evaporation**. That's when the heat of the sun **evaporates** water, or turns water into invisible **vapor** or steam. The vapor floats into the sky and when enough water evaporates, the vapor **condenses**, or collects together in clouds. Rain, hail, or snow then **precipitates**, or falls, from the clouds onto the earth. Most precipitation falls into the ocean, but some of it falls onto mountains, rivers and streams. This refills or **replenishes** our fresh water supply. When water collects in a certain location, like in a lake, this is called **accumulation**. This is where the water cycle ends and begins again!

## Droughts and Deserts



If precipitation like rain and snow doesn't fall in an area for a long period of time, then water sources don't get replenished. Water levels drop and water shortages can happen. This is called a **drought**. Droughts have occurred throughout history and happen all

over the world, especially in dry areas. California is a dry state, which means it doesn't rain a lot like in other states such as Oregon or Louisiana. Because of this, a large part of California is a **desert**, or very dry **ecosystem** where plants and animals have naturally **adapted** over time, or developed in ways that help them survive with very little water.

## Millions of People



California is the most **populous** state in the nation. That means more people live in California than in any other state. Most of the 37 million residents live in Southern California. This is the driest part of the state, with the Mojave and Colorado Deserts making up a big part of the region. Because it is so dry, and has most of the residents, Southern California has very big water needs and gets most of its water from Northern California.

## Wacky Weather



Right now our planet is getting warmer. That's because too many **greenhouse gases** like carbon dioxide and methane are being put into our air or **atmosphere**. These gases—which come from burning **fossil fuels** like oil and gas, and also come from raising animals for food—trap heat from the sun in the Earth's

atmosphere. If this happens over a long period of time, it makes the planet's average temperature get warmer. This is called **global warming**. It is also called **climate change**, since it changes our normal weather patterns. In places where it usually rains a lot, it could rain less and cause droughts, and in places where it doesn't rain a lot, it could rain more and cause floods. Climate change makes our weather wacky!

### Climate Change and Water



The global water cycle is complicated. A variety of different things can affect it, or change the way it works. Climate change is one of those things. As our normal weather patterns change,

there will be less precipitation in many areas, and therefore, more droughts. California, and other parts of the nation and the world, are already experiencing this. Although California has had droughts throughout history, it is possible that more droughts will happen for longer periods of time. During periods of drought, we might not have enough water to grow our food, let alone wash our cars or water our lawns! Sometimes, governments have to **ration** water. This limits the amount and sometimes even the ways people can use water. Rationing water makes sure we have enough water for the most important uses like drinking and growing food. Because of the problems associated with drought, we must try to prevent global warming and be smart about our water use.

### It's Smart to Save It



No matter where we live, everyone should be in the habit of **conserving** or saving water! This is true whether it's a time of drought or not. Make sure faucets and pipes aren't leaking, and that taps are turned tightly off after each use. Wear clothes more than once before throwing them in the laundry, take shorter showers, and don't let the water run when washing hands, brushing teeth or doing dishes. We can also think about the foods we eat and how much water it takes to grow them. It takes a lot more water to grow the plants to feed a cow to make a hamburger, than it does to just eat the plants directly. For example, one serving of beans takes 60 gallons of water to produce, while one hamburger requires 625 gallons of water!

### The Good News!



Many people are finding ways to create new water **resources** or supplies. Some places are removing salt from seawater to turn it into freshwater. This is called **desalination**. We can also use **recycled water** to irrigate parks and clean our streets. Recycled water is the treated water that leaves our **Water Pollution Control Plant** which is where water goes to get cleaned once we're done using it. Instead of releasing it into the ocean, we can use it as recycled water in a variety of ways. Using water wisely and developing new water resources and **technology**, or inventions, ensures that there will be enough water for all of us in the future!



# Drought



## Student Comprehension Questions

1. Name the five steps of the water cycle:

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2. What is a drought?

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3. How does climate change affect the global water cycle?

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4. What does it mean when there is a water ration?

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5. What are six ways we can conserve water?

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6. What will you do to help conserve water?

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1. Name the five steps of the water cycle:

*evaporates, condenses, precipitates, replenishes, accumulates*

2. What is a drought?

*A drought is when precipitation like rain and snow, doesn't fall in an area for a long period of time, and when water sources don't get replenished. Water levels drop and water shortages can happen.*

3. How does climate change affect the global water cycle?

*As our normal weather patterns change, there will be less precipitation in many areas, and therefore, more droughts.*

4. What does it mean when there is a water ration?

*A water ration is when the government limits the amount and sometimes even the ways people can use water.*

5. What are six ways we can conserve water?

*Make sure faucets and pipes aren't leaking*

*Turn taps tightly off after use*

*Wear clothes more than once before throwing into the laundry*

*Take shorter showers*

*Don't let the water run when washing hands, brushing teeth or doing dishes*

*Eat less beef and more plant-based foods.*

6. What will you do to help conserve water?

*(subjective answer)*