Name _____

Daily Science
Big Idea 3
WEEK 4

Day 1

Weekly Question

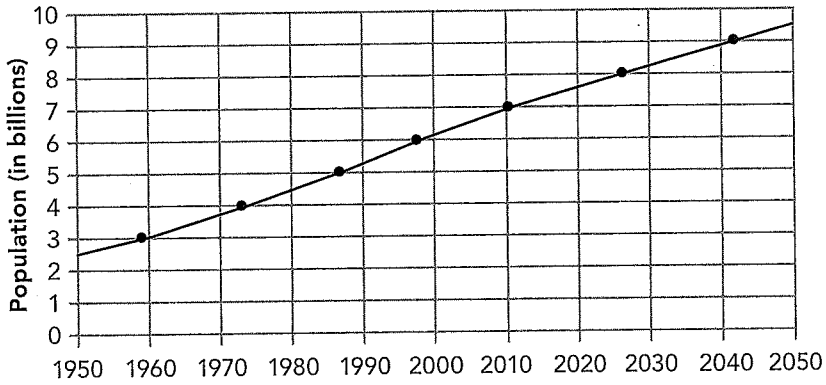
Can we run out of water?

A quick glance at a map of Earth reminds you how much more water there is than land on our planet. You would think, therefore, that we have more water than we could ever use. But Earth has a limited supply of usable water. Remember that only about 3% of Earth's water is fresh water. And of that fresh water, less than 30% is freely available in rivers, lakes, and groundwater.

While the amount of water on Earth doesn't change, the human population is growing. There are now nearly 7 billion people in the world. On average, each of us uses about 12 gallons of water per day for drinking, cleaning, and growing and preparing food. Plants and animals also rely on water. Some scientists think we are using an amount of water that we cannot sustain, which will lead to a global water shortage.

A. This graph shows Earth's population from 1950 to today, and how much it is likely to grow by 2050. Use the graph to answer the questions.

World Population: 1950–2050



1. About how many billion people will there be on the planet by the year 2050? _____
2. About how many more people were on Earth in the year 2000 than in 1960? _____
3. About how many more people will there be in 2050 than there were in 2000? _____

B. If a person uses about 12 gallons of water per day, how many gallons of water does that person use per year, on average? _____

Name _____

Day 2

Weekly Question

Can we run out of water?

Some areas of the world have less water available to them than others. Changes in the water cycle can impact the amount of water that certain regions receive. When a region receives less precipitation than normal for an extended period of time, the area experiences a **drought**. Droughts can negatively affect agriculture, availability of drinking water, and even a community's economy.

In some places, the concern is not drought or a limited supply of water, but lack of clean water. This is because the water supply in some areas is **contaminated**, meaning it has become polluted and is harmful to use. Water can be contaminated by cleaning products, oils, and other waste that is washed down the drain. Chemicals and disease-causing bacteria can also make their way into water. By some estimates, as much as 20% of Earth's population has no access to water clean enough to drink.

Daily Science

WEEK 4

Vocabulary

contaminate
kun-TAM-ih-NAYT
to pollute or make impure

drought
drowt
a long period of unusually low rainfall

A. Cross out the word or phrase in each sentence that makes the statement false. Then rewrite the sentence correctly.

1. A drought is caused by less sunlight than usual.

   _____

2. In some places, water is too clean to drink.

   _____

B. In what ways do you think a drought could negatively impact agriculture, drinking water, and the economy? Write one example for each.

Agriculture: _____

Drinking water: _____

Economy: _____

Name _____

Day 3

Weekly Question

Can we run out of water?

Daily Science Big Idea 3 WEEK 4

Unfortunately, there is no way to create new water on Earth. But we can make better use of the water we have. Some communities recycle their used water through the process of **reclamation**. Water that has been contaminated can be cleaned up for reuse at treatment plants. At these plants, the heaviest waste material is separated from the water. Then the water is filtered to remove smaller particles, and chemicals are added to kill off any remaining microorganisms. Reclaimed water is not as clean as fresh water, so it cannot be used for drinking. But it can be used for things such as watering crops, fighting fires, and cleaning.

People have also found a way to tap into our largest water supply—the ocean. **Desalination** plants remove salt from seawater, turning it into fresh water. This makes the sea a great source of potential fresh water, but there are drawbacks. For one thing, desalination is an expensive process. Also, desalinated water is only easily available to people who live near the coast.

Vocabulary

desalination
dee-SAL-ih-NAY-shun
the removal of salt from seawater

reclamation
REH-kluh-MAY-shun
the recovery of useful substances from waste products

A. Number the events in the correct order to show how reclamation works.

____ Waste materials are separated from the water.

____ Chemicals are added to the water to kill off microorganisms.

____ Waste water is collected at a treatment plant.

____ Recycled water is returned to a community's water system.

____ Small particles are filtered from the water.

B. What are two reasons why desalination alone can't solve our water shortage problem, even though there is plenty of water in the ocean?

1. _____

2. _____

Name _____

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Day 4

Weekly Question

Can we run out of water?

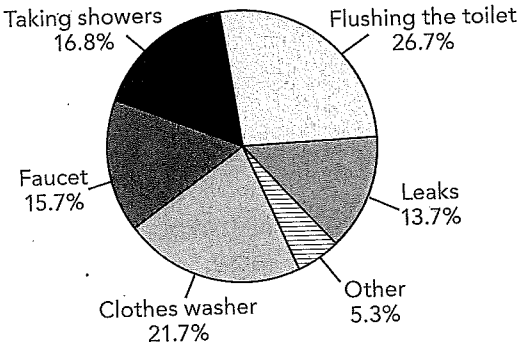
One of the best ways to address the problem of shrinking water supplies is to practice **conservation** of water. This is especially true in agriculture, which is our biggest use of water. Unfortunately, when crops are irrigated, more than 40% of that water can be wasted due to evaporation. But today, more farmers are conserving water by using a method called drip irrigation, which distributes the water slowly so that more of it soaks into the ground instead of evaporating.

Many people are also starting to conserve water in their everyday lives, such as by taking shorter showers or turning off the water while brushing their teeth. Some homeowners are cutting back on watering their lawns. Yes, it is possible that we may one day run out of drinkable water. But if we can conserve water and cut back on pollution, we will have a better chance of surviving with the water we've got.

Vocabulary

conservation
KON-sir-VAY-shun
the careful use of something to preserve it or keep it from running out

This pie chart shows the daily percentage of water that is typically used by various appliances or activities in American homes. Use the chart to answer the questions.



1. In which room of the house do people use the most water? _____

2. According to the chart, "other" activities account for more than 5% of people's home water use. What might these be? Name two other ways you use water besides the ways noted in the chart.

_____

Talk

What are some things you might do to conserve water? Work with a partner to make a list of the ways you can cut back on water usage.

Name _____

Day 5

Weekly Question

Can we run out of water?

A. Write the word from the box that could replace the underlined word or phrase in each sentence.

conservation	**reclamation**	**drought**
desalination	**contaminate**	

1. In order to protect our water supply, people have practiced the preservation of water. _____
2. The process of water recovery allows people to recycle used water. _____
3. People can pollute water by dumping waste materials or chemicals into it. _____
4. The process of salt removal allows people to use seawater for drinking. _____
5. Many farmers' businesses suffer during a rain shortage. _____

B. Write *true* or *false*.

1. Earth has a limited supply of usable water. _____
2. If a region has no rainfall for one week, it is experiencing a drought. _____
3. Reclaimed water can be used for drinking. _____
4. Contaminated water can carry disease. _____
5. The biggest use of water is for agriculture. _____