



WISE USE OF WATER

BENCHMARK and TASK

SC.D. 2.2.1 The student knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life.

- The student assesses how our lives are affected by the water cycle and creates a plan to conserve water.

KEY QUESTIONS

How are our lives affected by the water cycle?

How can we conserve water?

BACKGROUND INFORMATION

Luckily, unlike other **resources**, we are in no danger of running out of water. We have the same amount of water now as we did billions of years ago. This is because of the **water cycle**. We cannot destroy water, but we surely do waste it and pollute it. We use huge amounts of water for agriculture, industry, and in our homes. Believe it or not, the most water is used in toilets! A lot of water is wasted. Faucets also make it easy to waste water. A simple turn and water just pours out and if you don't pay attention, a lot of water is just going down the drain!

MATERIALS

Per class

tape

1 index card labeled *WATER*

markers

Teacher

1 push pin

Per group

1 9 oz. cup with a large mouth and a hole in the bottom

1 10 oz. cup with a narrow mouth

water

paper towels

clock or timer

Per student

1 sheet of paper

1 index card

2 lengths of string each about 5 feet long

TEACHING TIP

Use a push pin to pre-punch a hole in the bottom of each 9-ounce cup.

ENGAGE

1. Have students write this question on the top of a sheet of paper: *How do we use water?*
2. Next, the students should write a letter of the alphabet on each line, line 1 – a; line 2 – b; line 3 – c; and so on until they have written the entire alphabet a-z. Give students 3 minutes to brainstorm uses of water that begin with the corresponding letters, a-agriculture; b-bathing, c-cooking, etc.
3. Emphasize that water is an important element in our everyday lives and that we all need it. Some of the uses listed are interrelated.

4. List the names of some water users on the board (e.g., farmer, chef, rancher, builder, lawn maintenance worker, pool cleaner).

EXPLORE (Part 1)

1. Students should be in a circle with a chair in the middle labeled with an index card that says *Water*.
2. Each student should then write what type of water user (e.g., chef, farmer, rancher) he or she is on an index card and hold it up.
3. One at a time, have students tie their string to the water chair and then walk back about five feet, still holding on to the string. Continue until all students in the group are connected to the water chair. The strings will look like the spokes of a wheel.
4. Discuss how we all need water in some way – no matter who we are or what we do.
5. Next, discuss how each water user in the group may need to connect with another water user (e.g., the chef needs the goods that the farmer provides).
6. Individual students should try to think of someone else in the group that they may rely on or are connected to in some way (e.g., the restaurant owner relies on the farmer for produce). Then they should connect themselves to that person by handing them one end of the second length of string.
7. Strings will now connect the students to each other. Have each of them gently tug on the strings. This will show how all water users are connected.

EXPLAIN (Part 1)

What did the strings in the activity demonstrate?

What can you conclude about the importance of water to our daily lives?

Conclude: We have learned that water is important to all of us. So, therefore, it is vitally important that we conserve water. We need to use it wisely. Did you know that...

- every time you flush the toilet, you use 20 liters of water?
- a shower may take as much as forty large glasses of water per minute?
- if you leave the water running while you brush your teeth you can waste enough water to fill 10 soda cans?
- if you leave the water running while you wash dishes, you could be wasting enough to wash the car?
- leaks in the toilet or in faucets may waste up to 15 gallons per day?

EXPLORE (Part 2)

Students will use plastic cups to simulate a leaky faucet:

1. Each group will need two cups – one 9-ounce plastic cup with a large mouth and a hole punched in the bottom and one 10-ounce plastic cup with a narrow mouth - and some paper towels.
2. Place the 9-ounce cup inside the 10-ounce cup and place the cups on a paper towel.
3. A student from each group should volunteer to keep time for the investigation. When the timer says *Begin*, students should pour enough water in the 9-ounce cup to reach the top of the 10-ounce cup.
4. Drips should begin falling out of the hole in the 9-ounce cup into the 10-ounce cup. Students should count the number of drips wasted by the leaky faucets during the one-minute period.
5. The timer should call time at the end of one minute.

EXPLAIN (Part 2)

What did you learn about leaky faucets? (They waste water. Leaky faucets may waste up to 15 gallons per day.)

If we know a faucet leaks at home, what can we do until it is fixed? (Place a container under the leak and use the water for plants! Have an adult turn the water off outside. Call a plumber!)

Are there other ways to conserve water? (Take shorter showers, turn off the water when you brush your teeth, water your lawn only when necessary and on your designated days, etc.)

EXTEND/APPLY

Students can be leaky faucet detectives by searching for leaky faucets at home and at school.

ASSESSMENT

Each student will create a personal plan to conserve water both at home and at school. (Optional planning sheet is provided.)

How Can I Help?

My plan is...	

We all need to do our part to conserve Florida's water. Using what you learned during the investigation, explain your plan to conserve water.
