

Water, Water Everywhere



Overview:

Students tend to take the amount of water we have on the planet for granted. They think that there is an unlimited amount available for consumption and use. Conservation of our water is a practice that can be started at an early age. This activity will expose students to how much water is used in everyday practices. This activity will also use estimation, addition and division.

Materials:

- Plain 3" x 5" index cards
- hole punch
- markers
- string or yarn
- student worksheets
- pencils



Background:

The Earth is often referred to as the water planet. Between two-thirds and three-fourths of its surface is water. The Earth's water can be seen in flowing rivers, ponds, lakes, oceans, icecaps, and clouds. The amount of water that is available to humans and wildlife depends largely on how its quality is maintained. In areas where drought conditions are present, water conservation practices must be followed. Some ways to easily conserve water is to turn the water off while brushing teeth, take shorter showers and not watering your lawn or washing your car. Human beings have a responsibility to conserve water, use it wisely, and protect its quality.

Activity:

Write one water question on each card or cut out the questions and paste them to the index cards. Punch two holes in the top corners of the card and loop a piece of string or yarn (~ 1 yd) through the holes and tie the string.

Place an index card around each student's neck so that it faces outward for others to see. Each student should walk around and ask

Grade Level

3rd – 5th

Objectives

* To become aware of how much water is used in our everyday lives.

* To understand the importance of responsible water use.

* To develop skills in estimation, addition and division.

N.C. Standard Course of Study

Grade 5
(5.L.2.3, 5.P.2.1)

five other students to give an answer to the question on the card. Students can record each response on the student worksheet.

After they have five answers they should add their answers and divide by five. After they have an average the real answer can be given to them. Conduct a class discussion about the answers to the questions and talk about ways water can be conserved and how to maintain current water quality. Ask the students which answers surprised them and why having clean water is important.

Extension:

- Have the students make a list of how they use water in a typical day and then a list of how to conserve what they are using.
- Have students research water quality and then discuss water quality issues in your community and surrounding areas.
- Invite a water chemist to visit your class and discuss how water is treated in large communities.
- Visit a water treatment plant so students can see how wastewater is treated and maintained.
- Don't have the time to make the cards? Have students divide into groups of three or four and give each group several questions and have the group as a whole work on the estimations and the average numbers.
- Have students come up with a plan on how water can be conserved at the school.
- Have students think about the water cycle and then make a picture describing it.

Vocabulary:

- average
- percent
- temperature
- well
- drought
- gallon
- quarts
- Fahrenheit
- inch
- evaporate
- groundwater
- acre

References:

<http://ga.water.usgs.gov/edu>

National Science Standards:

Content Standards

Science as inquiry. [K-4] [5-8]

Science in personal and social perspectives. [K-4] [5-8]

Ocean Literacy Principles:

Essential Principle #1 *The Earth has one big ocean with many features
(Fundamental Concept-f)*

Essential Principle #6 *The ocean and humans are inextricably interconnected.
(Fundamental Concepts-a,g)*

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Water, Water Everywhere Questions

1. What percent of water on Earth is found in the oceans?
2. What percent of the human body is made of water?
3. How many gallons of water does it take to flush a toilet?
4. At what degree Fahrenheit does water freeze?
5. How many pounds does one gallon of water weigh?
6. What percent of the water on Earth is frozen?
7. How many of gallons of water does it take to brush your teeth?
8. How many gallons of water does the average home use in a year?
9. How many millions of people in the United States receive their water supply from a well?
10. How many quarts of water does the average person drink in a day?
11. How many gallons of water are used to wash dishes by hand?
12. How many gallons of water does a dishwasher use?
13. How many gallons of water are used to wash a load of laundry?
14. About how many gallons of water will run down the drain if you leave a faucet running for one minute?
15. How many inches of snow are equal to one inch of water?
16. What percent of the Earth's fresh water is stored as groundwater?
17. About how many gallons of water evaporate off of an acre of corn in one day?
18. What percent of all the water on Earth is suitable to drink?
19. How many gallons of water will accumulate per acre, when it rains one inch?
20. How many gallons of water are used to take a five-minute shower?
21. How many gallons of water are used to take a bath?

Water, Water Everywhere Answers

1. 97%
2. 65%
3. 3 gallons
4. 32 degrees
5. 8 pounds
6. 2%
7. 1 gallon
8. 107,000 gallons
9. 45 million
10. 2 quarts
11. 5 gallons
12. 9 gallons
13. 50 gallons
14. 5 gallons
15. 10 inches
16. 50%
17. 4,000 gallons
18. 1%
19. 27,000 gallons
20. 20 gallons
21. 50 gallons

Water, Water Everywhere Student Worksheet

Walk around and ask 5 other students to answer your question. Record their answers below:

Answers

1. _____
2. _____
3. _____
4. _____
5. _____

Add all the answers

Total = _____

Divide the total by 5

$$5 \sqrt{\quad}$$

Average answer is:

Walk around and ask 5 other students to answer your question. Record their answers below:

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