

# WATER (QUALITY)

10.26.2018

## Subject

Basic Science

## Prepared By

[Instructor Name]

## Grade Level

2

## Overview

This lesson plan covers teaching content for;

1. Water Quality.
2. Substances that contaminate water.
3. Dangers of drinking bad water.
4. Purifying Water.
5. Packaged Water.

## Teacher Guide

### Day 1/Lesson 1- 15 Mins

### Objectives

Students will be able to:

1. State how water can be used.
2. State the importance of water.
3. List the qualities of good water.
4. Identify and name some substances that make water unfit for drinking.
5. State the dangers of drinking bad water.
6. Explain a simple way of purifying water.

1. Measure 500 ml (2 cups) of distilled water into a large graduated cylinder.
2. Add 30 ml (2 table spoons) of finely crushed leaves into the water and stir gently.
3. Talk about the appearance of the mixture in the cylinder and have them watch as you filter the water.
4. Place a clean piece of flat sieve over a 1 000 ml beaker, labeled beaker A, and spread a piece of cheesecloth (or kitchen cloth) over the sieve .
5. Pour the mixture slowly through the filter (make sure it goes through both layers) into the beaker.
6. Discuss the liquid in the beaker and the solid on the filter.
7. Repeat steps 1 to 6 using beaker B and a piece of cotton fabric placed over the sieve. Make sure you rinse the sieve in between.
8. Repeat steps 1 to 6 using beaker C and a coffee filter placed over the sieve. Make sure you rinse the sieve in between.
9. Have the students compare the results of beaker A, B and C.

## Guided Practice

### Day 2/ Lesson 2- 15 mins

Repeat Day 1 activity (steps 1 to 9) using sand instead of crushed leaves.

1. Ask students if they know how we make clean drinking water.
2. Put a small amount of sand in a glass of water.
3. Stir the sand into the water. Make sure the water looks dirty before asking the students if they can drink it.
4. Explain that this water is polluted and that you want to make it clean and drinkable.
5. Give students time to discuss ways they can clean the water with a partner and share ideas with the whole class.
6. Demonstrate filtration by putting a cloth over the empty glass. Ensure that the cloth dips into the glass so no water spills out.
7. Slowly pour the "polluted" water into the cloth and show the results.
8. The water may be murky, so ask students what else could be done to clean it. Share that our drinking water is filtered and cleaned by different types of filters that separate the

## Materials Required

- Distilled water
- 3 large graduated cylinders (1 000 ml) -
- 15 ml measuring spoons
- 3 large beakers
- Flat sieve
- Cheesecloth (or kitchen cloth)
- Cotton fabric
- Coffee filters
- Shallow bowl or basin

## Additional Resources

- <http://www.waterwise.co.za/export/site/wise/education/activities/conserve/dovdf>
- <https://thewaterproject.org/resources/>
- <https://study.com/academy/lesson/water-plan.html>
- <https://study.com/academy/lesson/water-plan.html>
- <https://www.pinterest.com/alipopper/and-soil-quality-depends-upon-di/>

## Additional Notes

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## Teacher Guide

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### Information/Instruction

1. Introduce the lesson by presenting students with a container of water.
  2. Ask the students where their tap water comes from.
  3. Ask the students • To define pollution and list all suitable answers on the board • What they think pollutes our water and list all suitable answers on the board.
  4. Explain to the students that whenever water is used to wash our bodies, clothes and cars, or to cook our foods or brush our teeth, we make waste water. Likewise, each time an industry uses water to make paper products, iron, steel and oil, waste water is produced.
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### Day 3 /Lesson 3- 15 mins

1. As a group, go over ways that we use water every day and write them down.
  2. Divide the class in half. Explain to the class that the bowl contains ways that we use water, and that as a team, they need to come up with a solution to conserve water.
  3. Start with one team and ask a team member to pull out a piece of paper and read how we use water.
  4. Give that team 30 seconds to come up with a way to conserve water.
  5. If they cannot come up with an answer, give the other team a chance to answer the question. For every right answer each group gets a point.
  6. Keep track of the score on the board. Encourage the students to come up with creative answers. More than one answer could be possible for each use of water.
  7. Create a class list with all of the different water conservation suggestions.
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## Guided Practice

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pollution from the water.

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### Day 4/ Lesson 4- 15 mins

1. Using four large jars, collect samples of water from four different sources. Good sources to use might be tap water, bottled water, rain water, or water from creeks, ponds, rivers, or even the ocean.
  2. Using the masking tape and a marker, label each jar so that you will be able to easily identify the source of the water.
  3. Fit the coffee filters just inside the mouths of the large, wide-mouthed jars. Take one of the water samples, and slowly pour the water through the filter into the other jar. Repeat for each water sample. Don't forget to label the filters and new jars, so they don't get mixed up.
  4. Open each filter and have the students examine it through their magnifying glass. Discuss the filters with your students. Which filter is the most discolored? Which filter caught the most particles? Did any of the samples leave a colored residue on the filter?
  5. Discuss with your students how the water in rivers, streams and ponds can become polluted.
  6. Where do pollutants come from? (A major cause of water pollution is due to the chemicals and dyes that factories release into rivers, Individuals who drop litter in water sources like rivers, streams, or creeks, also contribute to water pollution.)
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	Teacher Guide	Guided Practice
<b>Assessment Activity</b> 1. Have students list every day uses of water at home or other places. (Drinking, showering, etc.)	<b>Assessment Activity</b> 1. Remind the students of how easily water can be polluted. 2. Ensure the students know how to filter dirty water.	
<b>Summary</b>		