

ecoMentors Lesson Plan Template: Helping kids explore the planet! www.ecomentors.ca

Title: Water in Your World

Grade Level(s): 3 & 4

Time/Date:

School:

Teacher:

Directions to school, class:

Vocabulary: Words & Concepts your class may be learning, look these up yourself too!

To conserve - To protect from loss or harm; preserve: save

Fresh water – Water that is not salty

Ground water – Underground water that is held in the soil and in rocks

Materials and Equipment: List these before and while you plan and revise so you're prepared.

Globe showing continents and oceans

2 clear glasses

Water

What is your class accomplishing?: Learning & Activity Goals, Objectives

- **Understand how much water there is on Earth (Salty vs. Fresh and Surface vs. Ground)**
- **Appreciate that water is not equally distributed**
- **Understand why and how to conserve and protect water (quality and quantity)**

Procedure

The Spark: Introductions, Demonstrations, Intro. Questions, Topic Intro (Break the ice!) ~5-10min

Hi everybody! Today we are talking about water! When was the last time you drank today?

Can you live a day without drinking? How long can we go on without drinking? (8-10 days max.)

Can anything live without water?

What percentage of humans is made of water? (~60%) Where is this water located?

What is one of the biggest threats to our water supply? (pollution)

Can you think of any other water-related problems?

(droughts, people without clean drinking water, flooding, erosion, acid rains, oil spills, etcetera)

Brainstorming, asking the right questions, ideas (assess their knowledge!) ~10-20min

If you see a picture of the planet Earth from space, what color does it have? Show the students the Globe.

Where does the blue color of our planet come from?

What percentage of Earth is covered with water? (~70%). Ask a student to come up to the board and draw a pie chart showing the % of water vs. earth.

What percentage of the water on Earth is salty, i.e we can't drink it? (97%) Show that on the Globe.

Can someone draw a pie chart showing the proportion of salty and fresh water on the board? Let the students come up to the board and help them in drawing a pie graph, or use the pie chart on the board with the water & earth. Let the class calculate how much of the earth's surface is fresh water (3% from 70% = 2.1%). Explain that most of this fresh water is in glaciers and ice caps.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play ~10-30mins

Water demo:

Bring a full glass and an empty glass of water. Explain to the class that this full glass represents all the water we have in the world. Pour most of it out (97%). Ask the class: *Why could we not drink this 97% of water that I just poured out of the glass? Salt. So the remaining 3% in the glass is fresh water. Do you think we can use this entire 3% to use as drinking water? No, 99.4 % is in polar ice, glaciers or is too polluted.* Pour the rest of the water out, leave 1 drop of water in the glass. *So this one drop, only 0,018% of the world's water supply, can be used as drinking water.* Ask students if they think there is a lot of water on Earth for all organisms. *Should we care for and protect our water?*

Use the water from the demo to water the plants, do not waste it!

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

Matching Water Usage:

Ask students: 'How much of our drop of useable fresh water is used for Farming? (42%) Production of Electricity? (39%) Homes, Offices, hotels (11%) Factories and Mines (8%)². For this exercise write the categories in one column and the percentages jumbled in an adjacent column on the blackboard. Ask the students to match the activity to the percentage of water used by drawing a connecting line. Erase line if not correct; continue until all correct connections are made.

Ask if a student can draw a pie chart with the correct percentages.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play~10-30mins

The importance of water:

Using the globe, ask if a student can locate any big lakes in Canada. *Can anyone name the Great Lakes?*

Ask another student to identify the major cities bordering the Great Lakes.

*Why are most big cities located on a lake shore? What do we use all this water for? **Transportation, recreation, drinking water, irrigation, hydropower, ...***

Ask students to see if there seems to be any other lakes of such size in other continents (if that takes too long limit it to the other Provinces in Canada).

Does everyone in the world have the same amount of water?

*How much water do you think a person needs every day to live? **12 litres, about 1 big bucket (to drink, cook, in food, etc.)** How much water do you think people in Africa can use every day? Some people do not even have these 12 litres per day to live! How much water do you think a Canadian person uses every day? **Over 400 litres!***

*Do you think that is fair? Do you know what we use this water for? **Drink, shower, dish washing, tooth brushing, watering the lawn, washing cars, flushing toilet, etc.***

Acting it out:

Ask students to take turns in acting out the following activities. One student should act it out in a way which wastes water. The next student should then try to act the same activity out while saving water.

Activities:

- Tooth brushing
- Using the toilet for a pee
- Washing the car
- Taking a shower
- Think of more activities

Can you now think of things that we use water for that are not really necessary? Or things that we use a lot of water for while we could also do with less?

How can we save water? What if there would be a water police; what would he/she look for and what would make her/him happy to see? What would the water police not want to see?

Split students into groups. Ask each group to design a way to reduce the way water is used in the school. Give them 10-15 min. Ask each group to present to the class what their idea is.

Contingency, Plan B, extra game or activities, extra questions (Back up plan) ~5-10mins

Let the students make a drawing of a good way to use water and a bad way to use water. Let them share their pictures with the class.

Review, Conclusion and steps towards continued action ~5-10mins

Why is water so important for us? Should we take our water for granted?

What can we do to protect water? What can you do at home to conserve water?

What is the most important thing that you have learned today?

What did you think was the most surprising thing that you learned today?

References

1 Yahoooligans - http://yahoooligans.yahoo.com/content/ask_earl/category?c=167

2 American Water Works Association www.awwa.org/Advocacy/learn/conserves/resources/ConservationInfo.cfm

3 All the Water in the World, EPA - http://www.epa.gov/region01/students/pdfs/ww_intro.pdf

4 The Otesha Book: From Junk to Funk www.otesha.ca

Great work ecoMentor! After use of Lesson Plan, revise, add ideas and repeat!