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| **Subject/Class:** *Social Studies Gr 5* | **Title:** *Water Water Everywhere* |
| **Objectives/Expectations:** (By the end of class, students will be able to….)  *Main Objective:* understand there is a finite amount of fresh drinkable water on earth available for daily human use   * Describe the amount of water needed for everyday activities * Communicate ideas for conserving water at home and in our community * Petra’s Objective—understand we have a limited amount of water for human use and describe ways to conserve this water | |
| **Introduction** (20 mins)   |  |  | | --- | --- | | **Teacher Activity**   * Before starting lesson provide schedule of lesson --Video, Teacher Demo, Student Demo, Activity * Show video “How much water is there on Earth? Earth Unplugged”--https://www.youtube.com/watch?v=jKOmNGEi0DY * Hook—“You are the brainy buds who are trying to find better ways to manage our water!” * Bring out the 19-litre pail of water, making sure it is in clear view of all students and explain this represents all the water on earth * Key questions—can we drink all the water on earth? Can humans access all the water on earth? Where on earth can water be found? What state can water be found in? | **Student Activity**   * Participate in class discussion on how much and where water can be found on earth | | |
| **Lesson Development** (30 mins)   |  |  | | --- | --- | | **Teacher Activity**   * Ask for a volunteer to help start the demonstration, give student the 500ml measuring cup and explain to class this *‘represents all the fresh water in the world; the water remaining in the bucket is salt water’* * Ask for second volunteer, and help them take 375ml of water out of the glass bowl, explain this water *‘represents freshwater that is frozen in polar ice caps/glaciers’* and what is left in the glass bowl *‘represents the accessible water on earth’* * Ask for third volunteer, and give them 1ml measuring spoon to take water out of glass bowl and explain this *‘represents the water in fresh water lakes like Canada’s Great Lakes’* * Ask for fourth volunteer, and give them the eyedropper to take half drop of water from the 1ml measuring spoon and explain this *‘represents the fresh water in our streams and rivers and the remaining water in the bowl is the groundwater found beneath the earth’s surface, such as the aquifer beneath the Sahara Desert’* * Introduce the second demonstration by explaining *‘Now that we know much water we have, let find out how we use it on a daily basis’* and with student help brain storm ideas on how water is used in their lives and how water is used to produce the things we use everyday * Key questions—Do you feel water is a valuable resource? Can Life survive without water? Do we use water to manufacture goods we buy every day? What do I mean by ‘*invisible water use’*? * Direct Students towards the 2-litre bottle of water on their desk before starting next demonstration * Use the *‘List of Estimated Water Used’* (Appendix A) to give students idea of volume of water used in daily activities and ask students to guess how much water that activity uses? Then reveal the answer and get a corresponding number of students to stand with their 2-litre bottle of water * Do this a number of times until students understand the volume of water they use personally on a daily basis and then brainstorm a list of ways to conserve water at home and in our community which will be written on the board | **Student Activity**   * Volunteer to participate in demonstration * First volunteer take 500ml of water and put into glass bowl * Second volunteer will take 375ml of water out of glass bowl and place back into pail of water * Third volunteer will 1ml of water from the glass bowl * Fourth Volunteer will take half drop of water from the 1ml measuring spoon held by Third Volunteer * After first demonstration students will be encouraged to participate in discussion on how we use water on a daily basis * During Second demonstration students will be encouraged to guestimate on how much water is used in a particular daily activity and stand up when asked * At end of second demonstration help participate in brainstorming ideas to conserve water at home and in our community | | |
| **Closure/Reflection** (20 mins)   |  |  | | --- | --- | | **Teacher Activity**   * Ask students to choose one conservation idea from the list generated and break students up into small groups no bigger than 4 that corresponds with the conservation idea that interests them * Dagmar—will be encouraged to work in the same group as Gedala or independently * Students will then be given 10-15 minutes to generate brief advertisement to convey the groups message of water conservation, provide a number of different options to accomplish this task—Poster, video commercial (1min), PowerPoint/Presentation (1min), Poem/Song (1min) etc. * Naveen—can help in any group by research information on ways to conserve water on his Ipad and could also help build presentation * Shawn—regularly visit his group to help keep him on task * After 10-15min direct students to organize their groups to present their advertisement through a gallery walk * Before beginning gallery walk explain to students to keep in mind one positive thing each group did in their advertisement and one way to improve their advertisement | **Student Activity**   * Each student should take on a specific role in the group, and work as a team to produce an advertisement * Petra—in her specific group she will be given the task of coming up with a ‘catch phrase’ for their group advertisement * Every group as the opportunity to choose any median they prefer to present their advertisement * Any assistive technology like text to voice or voice to text is accessible to any students or groups * After 10-15mins groups have the choice of presenting their advertisement together or pick a representative to present during the gallery walk * After gallery walk, students will write an exit card—for each group write one positive thing about their advertisement and one way to improve, for students own advertisement reflect on one positive and one way to improve | | |
| **Assessment** (Each Student will be assessed on…)   * Through class discussion were students able to generate appropriate ways to conserve water in our daily lives and in our communities * Through observation were students able to work productively in groups to produce an appropriate advertisement about water conservation * Through exit cards were students able to understand the different ways to conserve water in our daily lives and in our communities but also understand which way was the most effective in conserving water | |
| **Extension** (If there is extra time at the end of class or used for next class)   * Write a one paragraph on why people waste water and one change in your daily life that will have the biggest impact on water conservation? * With help from the school custodian, locate the schools water meter. Track the water use of the school for one week or do a month-long school water use study. Launch a water conservation campaign by sharing advertisements at school assembly and set a goal to decrease water use each week for a month. | |
| **Other/Tools/Materials**   * 19 litres of water in a pail * Clear glass bowl * Metric measuring cups and spoons * Eyedropper * 2-litre pop bottle for each student * List of estimated litres of water used (Appendix A) * White Bristol Board * Pencil Crayons/Markers | |
| **Information for Teacher**   * Place 2-litre bottles of water on students desk before starting this lesson (I recommend taping the top on so you have a student pouring out the water onto the floor) | |

Appendix—A

**Estimate Litres of Water Used**

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| **Toilet** | Regular Tank – 13 litres per flush or more  Water Efficient – 6 litres per flush |
| **Shower** | Regular Head – 100 litres per five minutes  Low-Flow head – 55 litres per five minutes |
| **Bath** | “Full” tub – 200 litres  “Quarter” tub – 70 litres |
| **Brushing Teeth** | Tap on one minute – 11 litres  Tap turned off while brushing – 2 litres |
| **Hand/Face Washing** | Tap on one minute – 11 litres  Partially filled basin – 3 litres |
| **Food Preparation** | Tap on five minutes – 55 litres  Basin or pot method – 5 litres |
| **Washing Dishes by Hand** | Tap on 10 minutes – 110 litres  Basin method for wash and rinse – 10 litres |
| **Dishwasher** | Full cycle – 47 litres  Short cycle – 32 litres |
| **Drinking 1 Glass** | Tap on 30 seconds – 5.5 litres  From jug in fridge – ¼ litre |
| **Laundry** | Average 105 litres per full load |
| **Car Washing** | Hose on 15 minutes – 165 litres  Bucket or shut-off nozzle – 20 litres |
| **Lawn Watering** | Sprinkler on one hour – 660 litres  Sprinkler on ½ hour – 330 litres |