Lesson Category: Environment Age: Brownies

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| **Lesson Title:** All About Water |
| **Lesson Overview:** In this lesson, girls will learn about some of the properties of water in addition to learning about water usage. |
| **Petal/Try It/Badge:** Water Everywhere |
| **Lesson Time:** 45-55 minutes |
| **Special Needs:**  two large containers/pitchers watertoothbrush (optional)measuring cupglass jar/cupmatchesplatesmall birthday candle |
| **Curriculum Objectives (EALRs or 40 Developmental Assets; GSLE)**  **Science EALR 2: Inquiry:** Girls will observe and describe the properties of water  **GSLE Outcomes:**  **Discover 3:** By learning about the properties of water and about water usage, girls will develop practical life skills. |
| **Materials needed:** paper, pencils |
| **Lesson Delivery (and estimated time per step):**  1. Before troop, set up the following stations for the girls to explore.  2. Split girls into three small groups and rotate them through the following stations.  3. Girls should spend approximately 10-15 minutes at each station. They will change stations when you signal them to.  5. Quickly, have the girls come up with a few rules they should follow at the stations.    **1. How much water?:** For this experiment, you can either have a volunteer pretend to brush her  teeth, or you can have her actually brush her teeth.  For this experiment you will need:  two pitchers: one filled to the top with water, and the other empty  measuring cup  toothbrush (optional)  1. Ask a volunteer to come up.  2. Have her pretend to brush her teeth like she normally would. The other girls can keep track of the  time by singing “Happy Birthday” through two times.  3. The first time she pretends, tell the girls that she leaves the water running.  4. As she brushes, slowly pour water from one container to the other, only stopping when she’s done.  5. Have the girls help you count how many cups of water were used.  6. Repeat the exercise, only the next time, have her pretend to turn the water “off” after she starts brushing and “on” again only at the end when she needs to.  6. Only pour water when the water is “on”.  7. Have the girls help you count the number of cups that were used that time.  8. How many cups are wasted when you leave the water running?  **2. Making Water:**  1. Ask girls what water is made up of. Can you make water? 2. After hearing their answers, show this experiment:  You will need:  a birthday candle a plate a clear drinking glass a match or lighter  A. Set the birthday candle on the plate and light it (ask an adult to help).  B. Cover the burning candle with the clear glass (it should be large enough to cover the whole candle).  C. When the candle goes out, look closely at the inside of the glass. What do you see?   Explanation: The tiny drops of liquid inside the glass are water! The hydrogen in the candle joined with the oxygen in the air to form water. The candle flame went out when all of the oxygen in the air inside the glass was used up.  D. Since we can make water, why do you think it is important to conserve water?  **3. Saving our Resources:** At this station, set some paper and pencils down for the girls to answer the following questions. Pre-write the questions and display them on the table.  1. What percentage of the human body is water? (66%) 2. How many gallons of water are used during a 5 minute shower? (25-55 gallons) 3. How many gallons of water are used when brushing your teeth each day? (2 gallons) 4. How long can a person survive without drinking water? (1 week) 5. How much water does one person use in a day? (50 gallons) 6. How much of the earth's surface is water? (80%) 7. How much of the earth's surface water is drinkable? (1%) 8. Water freezes at what temperature? (32 degrees F, 0 degrees C)  9. Water boils at what temperature? (212 degrees F, 100 degrees C)  **4. (10 minutes) Discussion:** Take the last few minutes of troop to discuss what the girls learned. Here, you can give answers to the questions in activity three. |
| **Optional Lengthening Activities:**    1. Have the girls think of ways that they can conserve water in their own homes. Be sure the girls include:  taking shorter showers  turning off the water to brush teeth and wash hands  they can even (with adult permission) put a weighted water bottle in the toilet tank to conserve!  Make a troop agreement to save water, and put it on the wall. |