

Tooth Booth

Activity Description

This activity teaches the importance of water conservation and shows how much water can be saved by simply turning off the water while brushing your teeth.

Take Home Message

It is important to conserve water – one way you can do this is by turning off the water when you brush your teeth.

Massachusetts Frameworks

Earth and Space Science
The Water Cycle #10

Supplies

- Two comically large toothbrushes
- Two sets of comically large teeth
- Two coolers with the spouts
- Two plastic measuring containers
- Dry erase board and marker
- Calculator
- Washable markers for staining the teeth
- Stopwatch

Set-Up

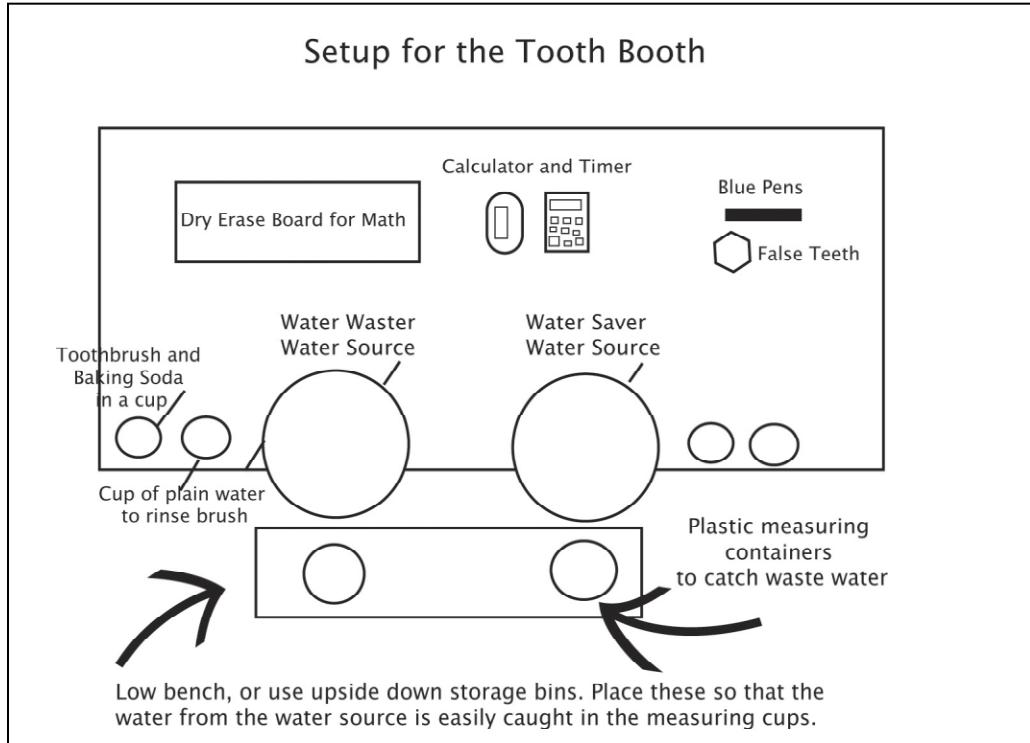
Set up a tarp under the table as well as over the table. This activity gets very messy. Pull out the 2 coolers with spouts. Fill each cooler about 3/4 of the way with water. Remember to pull up on the vent tab when you put the cover on, otherwise no water will run out of the spout. Set up the coolers next to each other in the middle of the table. Allow some space between them just so that the students don't bump into each other.

Next put some baking soda into two clear plastic cups and put each cup, a set of teeth, a toothbrush, and a cup of clean water next to each cooler. The teeth can be reused for an extended period of time. Next pull everything out of the Rubbermaid container. Place the container on the floor under the spouts of the coolers. Place the 2 plastic measuring containers under the coolers in the Rubbermaid bin, one under each cooler. These containers are used by the students to catch the water from "brushing" their teeth. (**Or, to prevent mess and keep an eye on the amounts to make the math easier, you can have both containers on your side of the table and run the water yourself.**)



SET UP FOR THE MARKER BOARD

Water Used	Water Wasters	Water Savers
X 2 (Brush teeth twice a day)		
X 7 (7 days a week)		
X 52 (52 weeks a year)		
X 300,000,000 (people in the US)		
If every person in the country turned off the water when they brushed their teeth than we could save xxxxxxxx gallons		



Activity Procedure/Script

- Greet children; tell them they are going to learn about water conservation. Ask them if they know what conservation means, and why it is important to conserve water.
 - Conservation is preserving a resource, like water, for future generations.
- Ask the students what they do in the morning when they get up.
 - Go to the bathroom, wash face, take shower, brush teeth
- Ask the kids if they keep the water on while brushing their teeth. Discuss with kids about water conservation and what they can do to help conserve water.
 - Now have them break into two teams
 - Explain that one team will be the **water savers** and one team will be the **water wasters**. If you have 5 in a group, you can have the fifth one be the data recorder and do the math on the board.
 - Explain that they've just finished a large delicious piece of blueberry pie, and their teeth got all purple...so they need some serious brushing!
 - SHOW THEM THE TECHNIQUE FOR BRUSHING, RINSING IN A CUP SO THE LARGE RESERVOIRS CAN STAY CLEAN
 - The **water saver** lets out a small burst of water each time their partner need to rinse off the brush (rinse the brush in the small cup)
 - The **water waster** keeps the water going the whole time.
 - Time the brushing for 30 seconds, measure how much water is used each time

- After running the activity, **ask the kids if they were surprised by how much water the team that ran the water constantly wasted.**
 - Now multiply both amounts of water by 2
 - Explain to the kids that you brush your teeth twice a day
 - Now multiply both amounts by 7
 - Explain that you brush your teeth 7 days a week.
 - Stop and see if any of them are shocked yet.
 - You can keep going up to a year if you think they are doubtful or just to make a point.
 - Remind them how much water you can save!
 - *If you need something to compare it too, every time they wasted 2000 mL, that is the equivalent to a 2-L soda bottle filled with water!*
- **Ask how many are going to run the water when they brush their teeth now?**
- **You can ask them these other fun trivia information to help drive home the point.**
 - Remind students about the water cycle and that water is used and reused. The water that they are brushing their teeth with may be water that a dinosaur drank millions of years ago. There is only a finite amount of fresh water that is available on the earth's surface at a given time, and we need to use it wisely.
 - What are other ways then can think to conserve water?
 - Taking shorter showers
 - Washing the car on the lawn
 - Only running the dishwasher when it is full
 - Running the clothes washer when it is full, or changing the load size dial
 - Using your towels more than one time, hang to dry in between showers
- **There are two ways to run this activity, so decide which works for you.** The first is listed above, having the kids run the water. The second option is slightly less hands-on, but that means it is less messy, and makes your job much easier:
 - Split the group into two teams (savers, wasters)
 - Here's the good stuff:
 - Savers will only use the H₂O in a cup that you give them. This cup should have 200 ml of H₂O in it.
 - Wasters get the same, but while they are brushing, they will have the faucet running.
 - Have them mark on the teeth to make 'em dirty.
 - Once dirty, present a toothbrush to each team.
 - Explain the process.
 - "When I say go, you can dip into your cups to get the brushes wet, then start scrubbing. When I say 'switch,' trade off so someone else can clean."
 - Grab a pitcher and say "go."
 - Kids start cleaning, you start filling a pitcher to represent the wasters running the faucet.
 - Let them go for about 1 minute (all this time you should monitor the H₂O level).
 - At 1 minute, stop them.
 - Congratulate them on clean teeth.
 - Time to check H₂O consumption. Dump cups into appropriate pitchers.
 - Savers should come to about 200 ml. Not bad.
 - Present the wasters pitcher (receive oohhhs and ahhhs).
 - Should be full, which is 2000 ml.
 - Tell them they that is 10x the amount, then provide them with a real-world example (I say gallon jugs....if savers use one gallon, wasters are using 10).
 - Reiterate that they turn off the faucet when brushing, send them on their way.

Clean-Up

During the festival

- After each group, dump the water from the “waste” containers back into the coolers. Empty out the small cups of rinse water and refill with clean water
- Wipe off as much blue marker from the teeth and erase the marker board.
- Try to clean up as much excess water as possible after each group, it will just make life easier when cleaning up at the end of the day, be on the lookout for wet flooring and mop if needed.

After the festival

- Dump all the water out and thoroughly clean and dry all the containers and coolers.
- Dry the Rubbermaid container and put everything back into it.
- Dump the water off the tarps, dry as best as you can, fold and put away.
- If the floor is wet, make sure to mop it up to prevent accidents.
- Pack up everything and bring it to the car.

