3 Times a Day

This activity is part of the Water Protection theme

Purpose of this activity:

This activity teaches how water contamination and our water use habits can affect biodiversity. It encourages students to evaluate the impacts of their everyday actions on the natural environment.

Key Messages:

- Protecting aquatic biodiversity, also protects our own water quality
- Aquatic organisms are impacted by chemical and physical changes in streams and lakes
- Understanding that even small changes in how we do things can conserve a lot of water.

Materials:

- Double sink display (with attached water source) with 2 buckets
- Toothbrushes for pretending to brush teeth

What will I be doing?

Set Up- this site will be set up for the volunteers. Toothbrushes are located in Kinark centre.

You will be explaining the benefits of aquatic biodiversity while teaching how to conserve water and prevent pollution. We're going to be looking at something that people do at home every day, brushing our teeth.

Brushing your teeth

Did everybody brush their teeth today? Out of the 340 L of water each Canadian uses every day, more than 1/3 (35%), or 120 L, of that is for washing our faces and brushing our teeth and bathing. That's 2 bathtubs full of water.

Get 4 students to volunteer. Two students will read the amount of water, one for each bucket. The other two will PRETEND to brush their teeth (we re-use these toothbrushes each time).One student will leave the tap running while brushing their teeth, the other student will turn the tap off after wetting the brush and then on again later, but **only long enough to rinse the toothbrush**.

Have each student read the amount of water on each bucket. The difference may seem very small, but multiply that by the number of people in the family. Then, multiply that by 365 days a year. Now it's a lot, it all adds up to water waste.

Answer students' questions about the demonstration or start a discussion by asking them the following questions. Encourage creative answers.

Questions to Ask Students:

Q: Why do we want to save water?

A: All water that is piped to your home has to be treated to make it clean enough to drink even if we're not drinking it, which is hard to do and costs a lot of money. Plus, we have to use chemicals to make this water clean and that's not good for the environment. All water eventually ends up back out in the natural environment.

Q: Are humans the only ones that need water?

A: No, all living organisms require water for survival. Both plants and animals need water to live.

Q: What is biodiversity? How does it relate to water conservation?

A: All the water you use to brush your teeth has been used many, many times before. That's right, it's the same water that has been in clouds and rain drops, in rivers and flushed down your toilet. As we all depend water for survival it is important to maintain the quality. Biodiversity can indirectly assist in maintaining healthy aquatic ecosystems.

Biodiversity can be equally represents in the following ways

- The variety of different habitats within an area
- The number of different species and individuals within a habitat
- The variety of interactions that occurs between different species within a habitat

Q: How does biodiversity contribute to a healthy ecosystem?

A: Every living element or organism living in a habitat plays a role in maintaining a stable environment. Ecosystems and ecological processes are involved in the breakdown and absorption of many pollutants created by humans and our activities. The removal of vegetation can result in siltation of waterways, loss of water quality and degradation of aquatic habitat, among other things.

Insects play the role of major pollinators of plants in many ecosystems, with the natural habitat destruction that has occurred, the interactions between insect pollinators and plants have been impacted. Biodiversity as habitats like wetlands and forests, contribute to a healthy ecosystem by acting as water purifying systems.

Q: How does biodiversity benefit human society?

A: Natural areas provide support systems for commercially valuable environmental benefits and resources. Spawning habitats protect crucial life stages for some species that are profitable and are harvested outside these habitats. For example, when habitat areas are cleared for development or polluted, populations of commercial fish species that rely on these habitats for breeding, also diminish.

By conserving water and preventing pollutants from entering the natural environment you are protecting biodiversity and the natural systems in place to maintain our water quality.

Q: What are we going to do when we brush our teeth?

A: Turn off the tap! Be a water watcher, NOT a water waster!

Background Information

Other ways to save water:

When having a bath, fill the tub only half full. Or put the plug in the tub first, and then turn on the hot water when you are running the water to make it hot.

Shaving: You can save 10-20 L of water each time you shave by filling the sink basin 1/2 full instead of running the water continuously.

Fix leaks! A tap, leaking one drop per second, wastes more than 25 L per day, that's 10 000 L per year. A leaking toilet can waste up to 200 000 L per year. That's enough to fill a big in-ground swimming pool.

Clean Up procedures

Tidy up site. Place toothbrushes in the buckets, and place under the sink.