

# Pioneer Water Race

**Activity Overview:** Taking a trip back in time, students will investigate how pioneers obtained water needed for their family and farm animals. By participating in a water-carrying race, students will experience how pioneers (as well as people in some parts of the world today) transported water and compare this to municipal water delivery systems in our own community today.

**Objectives:**

Students should learn to:

- Describe different methods of water transport and their challenges.
- Compare and contrast life in a pioneer settlement to that in our own community today, with respect to ease of access to water for daily use.

**Materials:**

- Yoke (for demonstration)
- Water troughs (2)
- Hose to fill troughs
- Buckets

**Setup:**

- Have the water troughs placed at opposite ends of the activity space, make sure one trough is half full of water and the other is empty.
- Place the buckets beside the water trough that is half full.
- Have the yoke set up for the demonstration.

**Takedown:** Make sure all the materials are put back into the same pile.

**Safety:** Ensure that students play safely. If path becomes muddy, change path and place pylons in hazardous areas.

**Vocabulary:**

**Watershed** - a land area drained by a stream or river

**Yoke** – A wooden board that rests across the shoulders and behind the neck, with buckets attached at either end, for carrying water

**Groundwater** – Water that flows under the ground's surface between soil particles; a common source of water for drinking and irrigation

**Surface Water** – Water that is visible on the earth's surface such as lakes, rivers and streams

**Well** – A hole or shaft drilled into the earth to bring groundwater to the surface.

**Water main** – Large underground pipes made of concrete or plastic, through which clean, treated water is pumped to homes, schools, businesses etc.

**What will I be doing? (Procedure)**

*Before you start your presentation check with the teacher or chaperone that the entire group is present and ready to start.*

*Remember that **doing** an experiment and **discovering** the answer is more powerful than watching and listening to someone, so try to involve as many children as possible.*

### **Activity – Part 1: How Did Pioneers Get Water?**

**Say:** “Welcome to the Pioneer Water Race! This activity will teach you about how pioneers transported water for their everyday needs. In Peel, tap water is clean and safe to drink because we have municipal water delivery systems in our community.”

**Ask:** “Can you tell me all the different things you do at home that need water?” (Let students provide various answers, and fill in any missing ones: drink, cook, clean, shower/bathe, do laundry, flush toilet, water plants, fill the fish tank or swimming pool, water the lawn and garden, etc.)

**Ask:** “Is it easy or hard for you to get water for these activities?” (Wait for answer) **Say:** “You’re right, it’s easy! All we have to do is turn on the tap. We can have clean water whenever we want, we’re very fortunate!”

**Ask:** “Where in the environment do you think your tap water comes from?”

- If they say, “From the lake!” Ask them, “Which lake?” (Lake Ontario)
- If they say, “From the ocean!” Explain to them: “As part of nature’s water cycle, our tap water may have been in the ocean at one point, but we live too far from the ocean. Besides, can we drink water from the ocean?” (Let them answer; no). “Why not?” (Too salty)

**Say:** “Here in Peel Region we get our water from either Lake Ontario (Mississauga, Brampton & Bolton) or Groundwater (the rest of Caledon). Lake and groundwater get cleaned first so they are safe to drink and use.”

**Ask:** “How do you think the water gets from either of these sources (Lake Ontario or underground) – to your taps?” (Wait for answers)

**Say:** “It is pumped there, through huge pipes! In Peel Region, the clean, treated water is pumped by huge pumps through underground pipes called watermains that run under the streets. The water travels from these bigger pipes through a smaller pipe that leads into your home, where it splits up into even more pipes in your house, to go all the places we just mentioned: including your kitchen tap and dishwasher, bathroom taps, tub, shower, toilet, washing machine and outside tap.”

**Ask:** “Does anyone know where the early settlers and pioneers get their water from?” (Answer: lakes, rivers, streams or wells)

**Ask:** “If kids wanted water in pioneer days, what did they do?”

**Say:** “They had to get it from a rain barrel outside the house that collected water when it rained, or they had to go to the river or an outdoor well and collect it with a container like a bucket. Water would be gathered directly from either a lake, river or stream using heavy buckets or pumped from the well into a bucket. Women or kids had to carry water from a pump or well or spring eight to ten times each day. Over just one year, they would walk around 260 km and carried over 36 tonnes of water.”

**Ask:** “Do you think that was easy to do? Would you want to do that every day? What do you think pioneer kids would say if they could see the way we get water out of taps now every day?”

**Say:** “Today, in some countries, people still have to walk for hours to collect the family’s water from a well or other source and carry the heavy containers back to their homes every day.”

**Ask:** “Do you think people who have to carry their water to their homes by hand use as much water as we do?”  
(Answer: No – they would use a lot less and be more careful with it since it took so much work to get)

Describe how the wooden yoke works. Tell them that the middle portion would rest on a person’s shoulders. Point out how heavy and uncomfortable it is, even with the buckets empty, and how hard it is to balance it as the buckets swing.

**Say:** “Old wells were dug by pick and shovel, and the bucket was lowered into the well to get out the water. Today, our wells are drilled or dug into the ground using heavy machines, and huge electric pumps to draw the water up the well. Today’s system of pumping water to people’s homes, schools and businesses was developed not because people complained that carrying buckets of water was too much work, but instead to make fire fighting more effective.”

### **Activity – Part 2: To the Races!**

**Say:** “Please make a single file line. We will be using a plastic bucket to collect water since the yoke is too heavy. You will be running from one trough (to collect water) to another (to dump your water). Each of you will get to collect water and empty their bucket once.” \*\*You can separate them into two teams to see which team finishes first. They will be filling the same trough though.

After the race, encourage a discussion with the students about the difficulty of the task they had just completed. **Ask:** “Did the early settlers have an easier or harder time than us to get their water for everyday use?”

Tell them how much water each student uses in a typical day (250 Liters). They would have to fill up their bucket many times to use up 250 litres!

**Say:** “In this activity we were only travelling a short distance with our water, but the early settlers would have had to travel much longer distances to gather their water. Many people in other parts of the world today still have to do this, and we need to realise how fortunate we are to have such a good water treatment and delivery system.”

### **Part 3: Wrap-up**

Remind students:

- Throughout history, many different methods of water collection and transportation have been used.
- Today we are very fortunate because our water is treated and delivered right to our homes using huge electric pumps and pipes.
- Whenever we want clean and safe water, all we have to do is turn on the tap!
- Many people in other parts of the world do not have this luxury, and still must walk long distances and carry water to their homes.
- **In Peel, tap water is clean and safe to drink because we have municipal water delivery systems in our community.**

### **Background Information:**

#### **Water Supply and Distribution**

When we talk about delivering water to homes, we are in fact talking about the processes of pumping, storage and distribution. Throughout time, communities have obtained their water from different sources – from

surface water such as rivers and lakes, or from groundwater sources using wells. The closer people's homes were to the water, the easier it was to carry it to their homes for use. We no longer use water directly from the source – all municipal tap water, whether it is from the lake or a well, is treated first to ensure it is safe to use. We no longer have to carry the water from the lake or well to our homes, either. The clean, treated water is pumped in massive quantities through hundreds of kilometres of underground pipes, directly to the taps in our homes.

#### Water Distribution in South Peel (Mississauga, Brampton and Caledon)

For the residents of Mississauga, Brampton and Bolton, water is drawn from Lake Ontario and treated at one of Peel's two drinking water treatment plants. From these water treatment plants, the clean water is pumped through a series of large, underground pipes known as watermains.

