



Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

POINTE-À-CALLIÈRE

TEACHER'S SHEET ✦ ELEMENTARY SCHOOL

S-sew-ers!

The Youville Pumping Station

You will soon visit Pointe-à-Callière, Montréal Archeology and History Complex, with your students. The activity *S-sew-ers! The Youville Pumping Station* will take place in an exceptional archeological and historical context. In contact with the remnants and artifacts left by the various human occupations that have followed one another on site, your students will discover the history and uses of water by Montréal's residents. Each era brings its best solutions to the challenges of wastewater management depending on the problems and available technologies. Young visitors will be part of a brand new experience of The Youville Pumping Station. Both participatory and educational, the exhibition is also an opportunity to broaden their horizons on environmental issues that concern them.

BEFORE THE VISIT

ACTIVITY 1 Uses and management of waters in Montréal: true or false

Invite the students to think of their water consumption by questioning them on their habits. This introduction will allow them to become aware of their own usage of water. Pointe-à-Callière is an archeological site which, through its remnants, testifies to the evolution of access to drinking water.

GOALS

- Think of our own water consumption.
- Become aware of the quantities consumed.

DEVELOPED SKILLS

- Interpret the change in a society and on its territory.
- Establish links of continuity with the present.

REQUIRED MATERIAL

- Sheet **Activity 1 – Uses and management of waters in Montréal.**

15 MINUTES

- Photocopy the sheet **Activity 1 – Uses and management of waters in Montréal**, (one copy for two or three students) and distribute it to the teams. Invite them to exchange and think together on issues relating to water consumption.
- The activity can be done with the entire class. You can project the questionnaire on the whiteboard and proceed to a vote to answer the questions. You can ask the students to elaborate on the reasons for their choices. You will find detailed explanations for each answer in the **answer key** of the activity.



Picture: Pierre Saint-Jacques © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal



Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

ACTIVITY 2 What are we?

During the visit, the students will be in contact with historical and archeological remnants giving evidence of the various uses but also various water sources over the centuries. This activity aims to teach students terms that they will encounter during their visit.

GOALS

- Assimilate vocabulary.
- Distinguish the notion of wastewater and drinking water.
- Understand and differentiate terms (ex: aqueduct/sewer).

DEVELOPED SKILLS

- Learn definitions.
- Exploit information.

REQUIRED MATERIAL

- Fiche [Activity 2 – What are we?](#).

ACTIVITY 3 What am I?

The remnants, artifacts and ecofacts that are discovered in the different layers of the ground are precious witnesses of the way of living of humans who occupied places over different times.

GOALS

- Observe the objects and learn more about them.
- Think of the possible uses of these objects.

DEVELOPED SKILLS

- Identify adaptation elements to the territory and the changes made.
- Establish links of continuity with the present.
- Exploit information.

REQUIRED MATERIAL

- Sheet [Activity 3 – What am I?](#).

15 MINUTES

The activity takes place in two stages.

- Students can work individually or in teams of two. Distribute the sheet [Activity 2 – What are we?](#) and give them 10 minutes to answer the questions. You can help them by giving clues which you can find in the answer key.
- After reading each definition, ask a few students to provide their answers before giving them the correct one. The visit at the Museum will allow you to deepen comprehension of these terms.



Picture: Aronnie Bergeron, © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

15 MINUTES

The activity takes place in two stages.

- Students can work in teams of two or three. Distribute the sheet [Activity 3 – What am I?](#). Let them observe the objects and think about their identification for 10 minutes.
- To correct this exercise, you can proceed to a vote and ask the students to explain their choices. You can give them clues which you can find in the [answer key](#).

AFTER THE VISIT



ACTIVITY 1 **Water-gate**

During their visit at Pointe-à-Callière, your students had the chance to observe objects and installations witnessing water management in Montréal. They saw an old sewer and pumping station that marked the historical progress of the city in wastewater management.

Thanks to these material traces from the past, they were able to understand how Montréalers supplied themselves with water as well as the devices that evolved to provide them with drinking water.

GOALS

- Review the visit at the Museum and remember the remnants and objects that you saw.
- Deepen your knowledge about the city and the residents of Montréal.

DEVELOPED SKILLS

- Interpret the change in a society and on its territory.
- Identify traces of people and events.
- Explore the world of technology.

REQUIRED MATERIAL

- Sheet **Activity 1 – Water-gate**.

15 MINUTES

- Animate a discussion about the visit at the Museum. Ask the students to give feedback. Did they enjoy their visit? What impressed them the most? What have they learned? Remind them about the discoveries they made.
- Distribute the sheet **Activity 1 – Water-gate**. They will answer the questions individually. There can be more than one correct answer (see **answer key** of activity 1).
- Ask them to share their answers in order to have a discussion about the visit.



Illustration: Benoît Méoule © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

ACTIVITY 2 What actions should be done to reduce our water consumption?

For this activity, we ask you to think of our water consumption in our daily lives. Some actions can be taken to reduce wastage of drinking water. This activity allows students to become aware of present and future challenges of water management.

GOALS

- Become aware of the waste of drinking water in our daily lives.
- Encourage students to think of environmental issues.
- Establish a link between the visit and the access to drinking water.
- Question students about future solutions by adopting simple and important actions on a global scale.

DEVELOPED SKILLS

- Encourage students to adopt a reflexive approach in the development of healthy lifestyles.
- Encourage students to maintain a dynamic relation with their environment while keeping a critical distance towards its exploitation.
- Assert one's personality and choices.

REQUIRED MATERIAL

- Sheet [Activity 2 – What actions should be done to reduce our water consumption?](#)

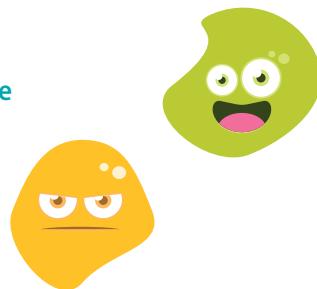
 30 MINUTES

The activity takes place in two stages.

- Students can work in teams of three or four. Distribute the six images available in sheet [Activity 2 – What actions should be done to reduce our water consumption?](#)

These images illustrate everyday situations in which water is used. The objective is to make students understand the importance of saving water for today's and tomorrow's generations. Students will have to observe the images and decide whether the behaviour is right or bad in terms of water saving. They will have to justify their choice.

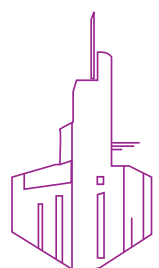
- You can ask the teams to share their observations and answers regarding the different situations. To encourage the exchanges, you may consult the sheet [Answer Key Activity 2](#), which provides you with additional information.



Through a partnership with:



Pointe-à-Callière is thanking you for your visit and your trust. We hope to see you again soon for more educational activities.





Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

POINTE-À-CALLIÈRE

STUDENT'S SHEET ✦ ELEMENTARY SCHOOL

S-sew-ers!

The Youville Pumping Station

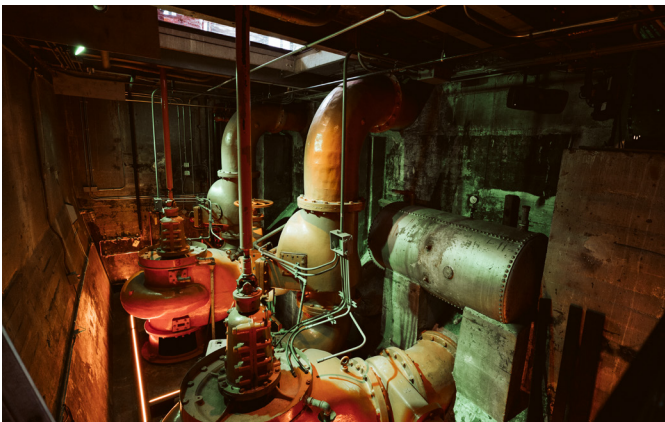
You will soon visit Pointe-à-Callière, Montréal Archeology and History Complex. The activity *S-sew-ers! The Youville Pumping Station* will take place in an exceptional archeological and historical context. In contact with the remnants and artifacts left by the various human occupations that have followed one another on site, you will discover the history and uses of water by Montréal's residents.

BEFORE THE VISIT

ACTIVITY 1 Uses and management of waters in Montréal: true or false

Circle the correct answer.

- | | | | |
|---|---|------|-------|
| 1 | Currently, our water consumption in Québec is 60 litres per resident per day. | TRUE | FALSE |
| 2 | During the 17th century, the daily water consumption in Montréal was less than the equivalent of one toilet flush today (around 20 litres). | TRUE | FALSE |
| 3 | Sewers were created in Montréal during the city foundation in 1642 by Paul de Chomedey de Maisonneuve and Jeanne Mance. | TRUE | FALSE |
| 4 | Drinking water is available in unlimited quantities around the world. | TRUE | FALSE |
| 5 | The Youville Pumping Station is the first in Montréal to use electric power. | TRUE | FALSE |
| 6 | Today, wastewater is directly discharged in the St. Lawrence River. | TRUE | FALSE |



Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal



Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

ACTIVITY 2 What are we?

Complete the sentences with the following words:

ground-water

aqueducts

permeable

drinking waters

wastewater

sewers

miasma

- The pipes designed for the transportation of wastewater are called _____.
- The _____ come from the aqueducts, they can be consumed by humans.
- Drinking water is transported using _____.
- _____ is dirty water transported by sewers, it cannot be consumed by humans.
- The gases that come from detritus are called _____. Before the discovery of bacteria, we thought they were the cause of diseases.
- The _____ is water reserves found in the soil, they notably supply the wells.
- The soils that are penetrated by water are _____.

ACTIVITY 3 What am I?

Find the right use for each object and circle the correct answer.

Picture: René Bouchard
© Collection: Réserves des collections archéologiques de la Ville de Montréal, BJJ-4-2010, BJJ-4-2096



- How was this object used?
 - As a decoration.
 - As a chamber pot.
 - To wash.
 - As a cup.

Pompe à eau, début 20^e siècle
© Musée McCord, M999.31.1



- What was this object used for?
 - To distribute gas.
 - To pour concrete.
 - To pulse water.
 - To serve beer.



- What is this object?
 - An old straw.
 - A stick.
 - A piece of the aqueduct pipe.
 - A sewer.

Picture: Alain Vandal, don de M. André Aubin ©
Collection Pointe-à-Callière, 2008.4



Picture: Arienne Bergeron © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

Picture: René Bouchard © Collection - Réserve des collections archéologiques de la Ville de Montréal, BIF-4-2070, BIF-4-2096

AFTER THE VISIT

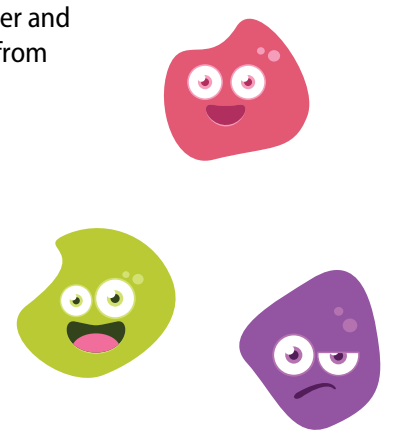
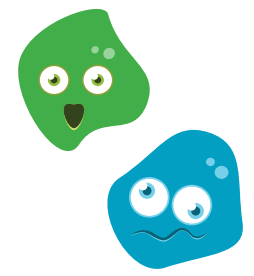
STUDENT'S SHEET



ACTIVITY 1 Water-gate

Check the correct answer(s).

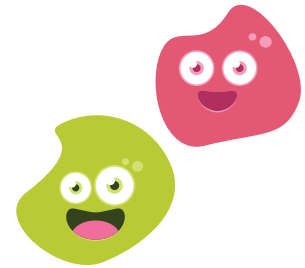
- 1 What are the ancestors of toilets called?
 - latrines
 - basins
 - hoses
 - chamber pots
- 2 Why was the *Petite rivière* covered by a stone arch?
 - to counter odours
 - to create a street
 - to counter miasma
- 3 What was the Youville Pumping Station used for?
 - to filter water so it can be drinkable
 - to stock rainwater
 - to pump and redirect wastewater further into the river and especially further from the port
- 4 With what energy the Youville Pumping Station was generated?
 - electricity
 - steam engine
 - water pressure
- 5 What was the discharge chamber of the Youville Pumping Station used for?
 - to stock wastewater coming from the pumps before directing it towards an aqueduct
 - to receive wastewater coming from the pumps to direct it towards another collecting sewer
- 6 With what process(es) can the wastewater be evacuated?
 - sewers
 - plants
 - wastewater treatment plants



ACTIVITY 2 What actions should be done to reduce our water consumption?

For this activity, you will work in teams. You will find six images showing how water is used today. In Québec, we consume nearly 262 litres of water per person per day. Your goal is to find, among the illustrations, the right behaviours and the habits to change to reduce our water consumption.

Do you think that the images below show **RIGHT BEHAVIOURS** or **HABITS TO CHANGE**? Why?



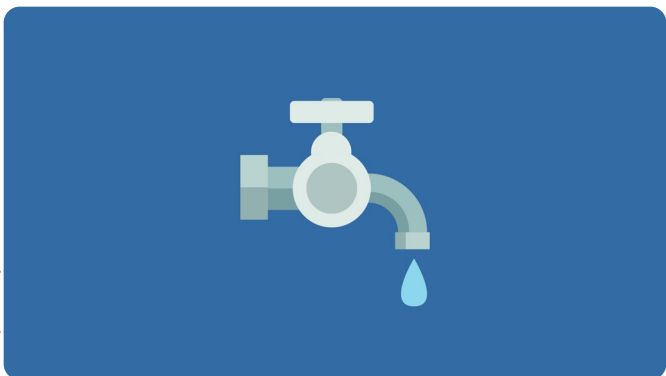
1 Collect rainwater.



© Andrew Rybalko

RIGHT BEHAVIOUR HABIT TO CHANGE

2 A leaking tap.



© Nayanba Jadhav

RIGHT BEHAVIOUR HABIT TO CHANGE

ACTIVITY 2 What actions should be done to reduce our water consumption? (continued)

3 Take a bath.



© Nayanda Indija

<input type="checkbox"/> RIGHT BEHAVIOUR	<input type="checkbox"/> HABIT TO CHANGE

4 Turn off the tap when brushing teeth.



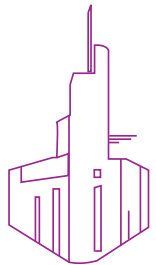
© eiffmann

<input type="checkbox"/> RIGHT BEHAVIOUR	<input type="checkbox"/> HABIT TO CHANGE

Through a partnership with:



Pointe-à-Callière is thanking you for your visit and your trust. We hope to see you again soon for more educational activities.



ACTIVITY 1 Uses and management of waters in Montréal: true or false, p. 5



Picture: René Bouchard © Collection: Réserve des collections archéologiques de la Ville de Montréal, B/JF-4-2070; B/JF-4-2096

Picture: Anne-Béatrice © Pointe-à-Callière, Cité Archéologie et Histoire de Montréal

STUDENT'S SHEET ✦ ELEMENTARY SCHOOL

S-ew-ers!

The Youville Pumping Station

You will soon visit Pointe-à-Callière, Montréal Archeology and History Complex. The activity *S-ew-ers! The Youville Pumping Station* will take place in an exceptional archeological and historical context. In contact with the remnants and artifacts left by the various human occupations that have followed one another on site, you will discover the history and uses of water by Montréal's residents.

BEFORE THE VISIT

ACTIVITY 1 Uses and management of waters in Montréal: true or false

Circle the correct answer.

- | | | | |
|---|---|-------------|--------------|
| 1 | Currently, our water consumption in Québec is 60 litres per resident per day. | TRUE | FALSE |
| 2 | During the 17th century, the daily water consumption in Montréal was less than the equivalent of one toilet flush today (around 20 litres). | TRUE | FALSE |
| 3 | Sewers were created in Montréal during the city foundation in 1642 by Paul de Chomedey de Maisonneuve and Jeanne Mance. | TRUE | FALSE |
| 4 | Drinking water is available in unlimited quantities around the world. | TRUE | FALSE |
| 5 | The Youville Pumping Station is the first in Montréal to use electric power. | TRUE | FALSE |
| 6 | Today, wastewater is directly discharged in the St. Lawrence River. | TRUE | FALSE |

- 1 FALSE. In Québec, we consume approximately 262 litres of water per person per day. Sixty litres of water is the quantity used for a shower of 5 to 10 minutes.
- 2 TRUE. Every Montréaler was using between 10 and 17 litres of water per day.
- 3 FALSE. The first collecting sewer in Montréal was built from 1832 to 1838 to cover the Petite rivière. Today, it is possible to visit a part of this sewer at Pointe-à-Callière.
- 4 FALSE. Water pollution and global warming are reasons for the difficult access to drinking water in many countries.
- 5 TRUE. The Youville Pumping Station, set up in 1915, was equipped with three pumps used to transport wastewater to dump it into the river, outside of the port.
- 6 FALSE. Wastewater goes through a treatment plant that filters, treats and dumps water into the river.

ACTIVITIES 2 & 3 What are we? What am I?, p. 6

ACTIVITY 2 What are we?

Complete the sentences with the following words:

ground-water

aqueducts

permeable

drinking waters

wastewater

sewers

miasma

- The pipes designed for the transportation of wastewater are called sewers.
- The drinking waters come from the aqueducts, they can be consumed by humans.
- Drinking water is transported using aqueducts.
- wastewater is dirty water transported by sewers, it cannot be consumed by humans.
- The gases that come from detritus are called miasma. Before the discovery of bacteria, we thought they were the cause of diseases.
- The groundwater is water reserves found in the soil, they notably supply the wells.
- The soils that are penetrated by water are permeable.

ACTIVITY 3 What am I?

Find the right use for each object and circle the correct answer.

Picture: René Bourhard
© Collection: Réserve des collections archéologiques de la Ville de Montréal, 1917-4-2076; 1917-4-2066



- How was this object used?
 a) As a decoration. **b) As a chamber pot.** c) To wash. d) As a cup.

The chamber pot is the ancestor of toilets. These useful objects were displayed and sometimes decorated like vases.

Pompe à eau éboulé 20^e siècle
© Musée McCord, M999.31.1



- What was this object used for?
 a) To distribute gas. b) To pour concrete. **c) To pulse water.** d) To serve beer.

This water pump is called a hand pump. By a manual action — by lifting and pulling down the arm — the water goes through a pipe and pours through the spout.



Picture: Alain Vandal, don de M. André Aubin © Collection Pointe-à-Callière, 2008.4

- What is this object?
 a) An old straw. b) A stick. **c) A piece of the aqueduct pipe.** d) A sewer.

This piece of aqueduct pipe dates from the 19th century. A metal hoop retains the water pressure and seals the pipe. It was used to transport clean waters.

ACTIVITY 1 Water-gate, p. 7



Picture: René Bouchard © Collection: Réserve des collections archéologiques de la Ville de Montréal, B/J/4-2070; B/J/4-2096

Picture: Anne-Bégin © Pointe-à-Callière, Cité d'archéologie et d'histoire de Montréal

AFTER THE VISIT

STUDENT'S SHEET



ACTIVITY 1 Water-gate

Check the correct answer(s).

1 What are the ancestors of toilets called?

- latrines
- basins
- hoses
- chamber pots

2 Why was the *Petite rivière* covered by a stone arch?

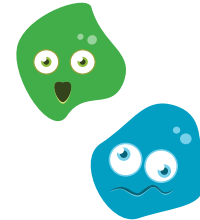
- to counter odours
- to create a street
- to counter miasma

3 What was the Youville Pumping Station used for?

- to filter water so it can be drinkable
- to stock rainwater
- to pump and redirect wastewater further into the river and especially further from the port

4 With what energy the Youville Pumping Station was generated?

- electricity
- steam engine
- water pressure



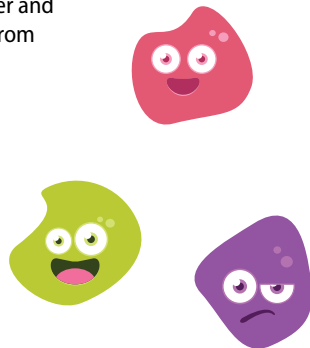
5 What was the discharge chamber of the Youville Pumping Station used for?

- to stock wastewater coming from the pumps before directing it towards an aqueduct
- to receive wastewater coming from the pumps to direct it towards another collecting sewer

6 With what process(es) can the wastewater be evacuated?

- sewers
- plants
- wastewater treatment plants

Sewers collect and transport wastewater to treatment plants which filter, treat and dump it in the river. Permeable soils — like green spaces — are also a solution to absorb rainwater.

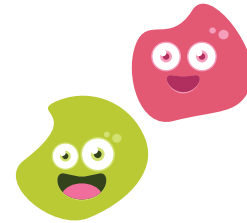


ACTIVITY 2 What actions should be done to reduce our water consumption?, p. 8

ACTIVITY 2 What actions should be done to reduce our water consumption?

For this activity, you will work in teams. You will find six images showing how water is used today. In Québec, we consume nearly 262 litres of water per person per day. Your goal is to find, among the illustrations, the right behaviours and the habits to change to reduce our water consumption.

Do you think that the images below show **RIGHT BEHAVIOURS** or **HABITS TO CHANGE**? Why?



1 Collect rainwater.



RIGHT BEHAVIOUR

HABIT TO CHANGE

Right behaviour:

This image shows a system to recover rainwater. It is a right behaviour since it is possible to use this water for activities that do not require drinking water (ex: watering the plants).

2 A leaking tap.



RIGHT BEHAVIOUR

HABIT TO CHANGE

Habit to change:

A leaking tap is equivalent to the loss of five litres of water per hour.

It is very important to close it to avoid water waste.

ACTIVITY 2 What actions should be done to reduce our water consumption?, p. 9

ACTIVITY 2 What actions should be done to reduce our water consumption? (continued)

3 Take a bath.



© Nayanta Jaisri

RIGHT BEHAVIOUR

HABIT TO CHANGE

Habit to change:

A bath consumes 150 litres of water compared to 75 litres for a 5-minute shower.

4 Turn off the tap when brushing teeth.



© Efframa

RIGHT BEHAVIOUR

HABIT TO CHANGE

Right behaviour:

Some of our daily actions are more consuming in water than others. A good example is leaving the tap open while brushing teeth or washing hands. We can save 13 litres if we close the tap. In the picture, the child controls his water use — we can see that he has a glass of water and that the tap is closed, avoiding unnecessary waste.

Through a partnership with:



Pointe-à-Callière is thanking you for your visit and your trust. We hope to see you again soon for more educational activities.

