

Taps N' Drains

HAMILTON

CHLORINE

RAW SEWAGE PUMP STATION

DIGESTORS

WASTEWATER TREATMENT PLANT

THE VORTEX SEPARATOR

SECONDARY CLARIFICATION

AERATION

PRIMARY CLARIFICATION

Frog

Bald Eagle

LAKE ONTARIO

ENd

Start

HAMILTON HARBOUR

FOOD SCRAPS

Pickereel

COTTON SWABS

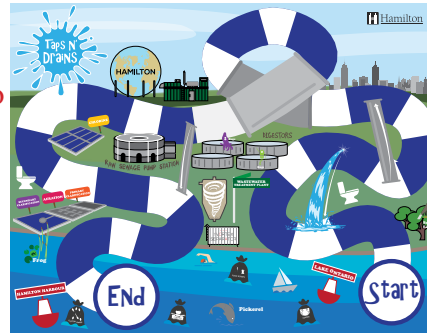
DIAPERS

RULES & HOW TO PLAY

1. SETUP

Students can play 1 vs 1 or in two teams. Before you begin, print out the game board along with the game questions. There are two sets of questions and answers for each age group. Give each team one set of questions and answers - don't show the other team!

Game pieces can be anything you can find at home or in class (a coin, eraser, button, etc). You will also need a single die to play this game. If you don't have one, you can make your own or download an app on your device. Each team's game piece will begin on the "START" tile.



QUESTIONS & ANSWERS

TEAM 1

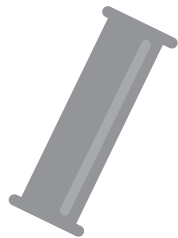
Primary (K-3)

1. Do we need clean drinking water to live? yes OR no (Answer: **YES**)
2. Do toilets help keep us safe and healthy? yes OR no (Answer: **YES**)
3. True or False: Our pee and poo is full of germs. (Answer: **TRUE**)
4. What do we do after going to the bathroom so we don't spread germs? dance, wash hands OR sing (Answer: **WASH HANDS**)
5. Where does everything you flush down the toilet go? into the ocean OR into the sewer (Answer: **SEWER**)
6. True or False: We should only flush the 3P's down the toilet (pee, poo and toilet paper) (Answer: **TRUE**)
7. Where does the water that comes out of your tap come from? Lake Ontario OR the ocean (Answer: **LAKE ONTARIO - SOME COMES FROM UNDERGROUND TOO!**)
8. How much of the human body is made of water? more than half OR less than half (Answer: **MORE THAN HALF**)
9. What were the first water pipes made out of in Hamilton? wood, gold OR rock (Answer: **WOOD**)
10. If you didn't have a toilet, where would you have to go to the bathroom? on the floor inside OR outside (Answer: **OUTSIDE**)
11. Can you find two ways that humans use water on the game board? (Answer: **SWIMMING AND BOATING**)
12. If you drank dirty water, what could happen? you'd get sick OR it would only taste bad (Answer: **YOU COULD GET SICK**)
13. Who's job is it to take care of our water and the environment? (Answer: **EVERYONE**)
14. There are lots of plants that live in and around the water in Hamilton Harbour. Can you find a picture of one on the game board? (Answer: **LILY PADS**)
15. How can we keep our environment clean? don't flush garbage, don't litter OR both (Answer: **BOTH**)

2. BOARD SPACES



Each blue or white square on the board counts as 1 space.



If you land on a pipe, you may travel forward through the pipe.



Be careful! If you land on a leak, you must travel backwards.

RULES & HOW TO PLAY

3. PLAY!

How to play: To start, each team will roll the die and the team with the highest roll will begin the game. Team 1 will roll the die but before moving their game piece they must answer a question correctly. Team 2 will read the first question aloud (with any multiple choice answers, if any). Team 1 will answer within 30 seconds. If answered correctly, Team 1 will move their game piece based on the number they rolled. If answered incorrectly, Team 2 will read the correct answer aloud and Team 1 will remain in their current space. It is then Team 2's turn to roll the die and repeat the process. Each team will only move their game piece based on what number they roll. If the questions run out, each team may ask the other team a water-related question (only if the asking team knows the answer!).

How to win: The first team to move their game piece from the starting circle to the end circle and answer a final question on their next turn wins the game.

Example:

Team 2 rolls the die and answers a question correctly. Based on their roll, they land in the FINISH space. On their next turn they need to answer a question correctly to end the game. If they answer incorrectly they have another chance on their next turn (no need to roll the die again).

Good Luck!



QUESTIONS & ANSWERS

TEAM 1

Primary (K-3)

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3. True or False: Our pee and poo is full of germs. (Answer: **TRUE**)
4. What do we do after going to the bathroom so we don't spread germs? dance, wash hands OR sing (Answer: **WASH HANDS**)
5. Where does everything you flush down the toilet go? into the ocean OR into the sewer (Answer: **SEWER**)
6. True or False: We should only flush the 3P's down the toilet (pee, poo and toilet paper) (Answer: **TRUE**)
7. Where does the water that comes out of your tap come from? Lake Ontario OR the ocean (Answer: **LAKE ONTARIO** - SOME COMES FROM UNDERGROUND TOO!)
8. How much of the human body is made of water? more than half OR less than half (Answer: **MORE THAN HALF**)
9. What were the first water pipes made out of in Hamilton? wood, gold OR rock (Answer: **WOOD**)
10. If you didn't have a toilet, where would you have to the bathroom? on the floor inside OR outside (Answer: **OUTSIDE**)
11. Can you find two ways that humans use water on the game board? (Answer: **swimming and boating**)
12. If you drank dirty water, what could happen? you'd get sick OR it would only taste bad (Answer: **YOU COULD GET SICK**)
13. Who's job is it to take care of our water and the environment? (Answer: **EVERYONE!**)
14. There are lots of plants that live in and around the water in Hamilton Harbour. Can you find a picture of one on the game board? (Answer: **LILY PADS**)
15. How can we keep our environment clean? don't flush garbage, don't litter OR both (Answer: **BOTH**)



QUESTIONS & ANSWERS

TEAM 2

Primary (K-3)

1. There are lots of animals that live around Hamilton Harbour, can you find one on the game board? (Answer: **BALD EAGLE or PICKEREL**)
2. How many toilets are on the game board? (Answer: **3**)
3. True or False: Toilets save lives (Answer: **TRUE**)
4. Can flushing garbage clog sewer pipes? (Answer: **YES!**)
5. Where does everything you flush down the toilet go? into the ocean OR into the sewer (Answer: **SEWER**)
6. Can you find two things that shouldn't be flushed down the toilet on the game board? (Answer: **COTTON SWABS, WIPES, FOOD SCRAPS, DIAPERS**)
7. True or False: Everyone on Earth has a tap and clean water (Answer: **FALSE - SOME PEOPLE WALK FOR HOURS TO GET WATER EVERYDAY!**)
8. How long can you go without drinking water? one hour, a few days or a month (Answer: **JUST A FEW DAYS**)
9. What is one way your tap water is cleaned? with a filter, magic OR it isn't cleaned (Answer: **A FILTER - MADE OF SAND, GRAVEL and CARBON**)
10. True or False: More people on Earth have a cell phone than a toilet (Answer: **TRUE**)
11. We need to drink water everyday to stay healthy, can you think of two ways we lose water from our bodies? (Answer: **pee, crying, sweating, breathing**)
12. True or False: Even though water in the environment looks clean, it could contain things that could make you sick (Answer: **TRUE - we can't see germs!**)
13. Name two places you can find water in Hamilton? (Answer: **TAPS, CREEKS, RIVERS, LAKE, HYDRANTS, etc**)
14. If you didn't have a tap and no bottled water, what would you have to do to get water? (Answer: **WALK TO FIND WATER, COLLECT RAIN, etc.**)
15. Do plants and animals need clean water to live, just like humans? (Answer: **YES**)



QUESTIONS & ANSWERS

TEAM 1

Junior (4-6)

1. Can what we flush have a negative impact on the environment? (Answer: **YES - flushing garbage can lead to sewage overflows in our city and nature**)
2. Why is Lake Ontario so important? it's where our tap water comes from, it provides habitat for many species OR both (Answer: **BOTH**)
3. True or False: Human waste can easily spread harmful bacteria. (Answer: **TRUE**)
4. Look on the board, do you know what is stored in the globe? water, gas OR nothing (Answer: **GAS - the globe stores a gas called methane**)
5. Does Hamilton have a treatment plant that cleans the waste that goes down your drains and toilets? (Answer: **YES - this protects human health and our water**)
6. True or False: We should only flush the 3P's down the toilet (pee, poo and toilet paper) (Answer: **TRUE**)
7. What lake does the water that comes out of your tap come from? (Answer: **LAKE ONTARIO - SOME COMES FROM UNDERGROUND TOO!**)
8. How much of the human body is made of water? 25%. 50% or 70% (Answer: **70%**)
9. What were the first water pipes made out of in Hamilton? wood, gold OR rock (Answer: **WOOD**)
10. How many people in the world don't have a working toilet? 1 million, 500 million or more than 1 billion (Answer: **MORE THAN ONE BILLION**)
11. True or False? There are around 2,000 kilometers of sewer pipes in Hamilton (Answer: **TRUE**)
12. True or False? In the year 1854, 550 people in Hamilton died of cholera from drinking dirty water (Answer: **TRUE**)
13. What chemical does the City of Hamilton use to treat (or clean) both tap water and sewage? Acid, chlorine OR dish soap (Answer: **CHLORINE**)
14. Can you point to one source of pollution on the game board? (Answer: **EITHER GARBAGE BAGS, HUMAN, TOILET, BUILDINGS OR THE BOAT**)
15. On the game board there are a few different ways Hamilton Water treats sewage. What do you think the first place sewage goes at the plant? The vortex separator, digestors OR the pumping station (Answer: **PUMPING STATION**)



QUESTIONS & ANSWERS

TEAM 2

Junior (4-6)

1. True or False? 50% of Earth is covered in water (Answer: **FALSE - it's 70%**)
2. What is another name for the dirty water that goes down your drains and toilets? sewage, wastewater OR both (Answer: **BOTH**)
3. True or False? The Wastewater Treatment Plant in Hamilton treats (or cleans) around 125 billions litres of wastewater every year (Answer: **TRUE**)
4. What percentage of water on Earth is suitable to drink? 20%, 37% OR 1% (Answer: **1% - the rest is either salt water or inaccessible**)
5. Where does the water that goes down your drains and toilets eventually end up? Underground, Hamilton Harbour OR the ocean (Answer: **HAMILTON HARBOUR**)
6. There are many areas of the world that don't have toilets. What problems can this cause? (Answer: **DISEASE/ILLNESS, DIRTY DRINKING WATER, NO PRIVACY**)
7. What could happen if none of the wastewater in Hamilton was treated (or cleaned)? pollution, contaminated drinking water, loss of plant/animal habitat OR all (Answer: **ALL - THERE ARE MANY NEGATIVE IMPACTS!**)
8. True or False? Hamilton treats around 75 billion litres of tap water each year (Answer: **TRUE**)
9. If a sewer gets clogged from people flushing garbage, where does the sewage end up? in your basement, the environment OR both (Answer: **BOTH**)
10. True or False: More people on Earth have a cell phone than a toilet (Answer: **TRUE**)
11. Bald Eagles used to nest around Hamilton Harbour but left due to pollution. What's one way we can try to bring them back? (Answer: **CLEAN WATER!**)
12. True or False: Even though water in the environment looks clean, it could contain things that could make you sick (Answer: **TRUE - we can't see germs!**)
13. Name two places you can find water in Hamilton? (Answer: **TAPS, CREEKS, RIVERS, LAKE, HYDRANTS, etc**)
14. If you didn't have a tap and no bottled water, what would you have to do to get water? (Answer: **WALK TO FIND WATER, COLLECT RAIN, etc.**)
15. Do plants and animals need clean water to live, just like humans? (Answer: **YES**)



QUESTIONS & ANSWERS

TEAM 1

General Questions

1. What is another way to say water? H₂O, Aqua OR both (Answer: **BOTH**)
2. Water is made of hydrogen and _____. (Answer: **OXYGEN**)
3. True or False? 1.5 billion people on Earth don't have clean drinking water. (Answer: **TRUE**)
4. Is water the only substance that can be found naturally in 3 different states (gas, liquid, solid)? (Answer: **YES**)
5. How many times in a year does Hamilton test it's drinking water to make sure it's safe? 1000, 55,000 OR 2,500 times (Answer: **55,000 TIMES**)
6. How much does 1 litre of water weigh? 2.2 pounds, 4.4 pounds OR 100 pounds (Answer: **2.2 POUNDS**)
7. True or False? Water freezes at 0 degrees celcius. (Answer: **TRUE**)
8. True or False? Water boils at 50 degrees celcius (Answer: **FALSE - it's 100**)
9. If you dug up all of the underground water pipes in Hamilton and laid them end to end they would stretch all the way to _____. Florida, the moon OR Toronto (Answer: **FLORIDA**)
10. How many fire hydrants are in Hamilton? around 250, 750 OR more than 10,000 (Answer: **10,000+**)
11. There is a place in Hamilton Harbour that is very polluted and is currently being cleaned up. What is this place called? Smog bottom, Randle Reef OR neither (Answer: **RANDLE REEF**)
12. Which of the following can pollute our water? A farmer using pesticides, a student pouring chemicals down the drain, a man pouring oil down a catch basin OR all (Answer: **ALL**)
13. True or false? Our tap water travels underground through pipes called watermains (Answer: **TRUE**)
14. The filters that clean your tap water at the treatment plant are mostly made of what? bricks, paper OR sand (Answer: **SAND**)



QUESTIONS & ANSWERS

TEAM 2

General Questions

1. What is another word for wastewater? Sewage, runoff OR sludge
(Answer: **SEWAGE**)
2. Water that goes down your drain goes into the sewer. The sewer then leads to the _____. Ocean, river OR treatment plant (Answer: **TREATMENT PLANT**)
3. True or False? Over 1 billion people don't have access to a suitable toilet.
(Answer: **TRUE**)
4. How many litres of wastewater does the Wastewater Treatment Plant clean each year? 1 million litres, 50 million litres OR 125 million litres (Answer: **125 MILLION**)
5. The wastewater that gets treated at the treatment plant is eventually released in _____. Hamilton Harbour OR the landfill. (Answer: **Hamilton Harbour**)
6. The giant globe at the treatment plant contains _____. Water, air OR methane gas. (Answer: **METHANE GAS**)
7. True or False? Flushing garbage down the toilet can lead to sewage overflows into the environment. (Answer: **TRUE**)
8. True or False? Sewage can easily contaminate drinking water (Answer: **TRUE**)
9. Not every house in Hamilton is connected to the sewer system. In some areas, houses instead use a _____ tank. Wastewater tank, toilet tank OR septic tank
(Answer: **SEPTIC**)
10. How many kilometers of sewers does Hamilton have? around 500, 1125 OR more than 1800 (Answer: **1800+**)
11. Hamilton has 2 wastewater treatment plants. One is on Woodward Ave and the other is located in _____. Ancaster, Binbrook OR Dundas (Answer: **DUNDAS**)
12. Which of the following can pollute our water? A farmer using pesticides, a student pouring chemicals down the drain, a man pouring oil down a catch basin OR all (Answer: **ALL**)
13. True or false? The treatment plant processes more than 46,000 tonnes of human waste each year (Answer: **TRUE**)
14. What year was the Wastewater Treatment Plant built? 1936, 1964 or 1998
(Answer: **1964**)