Waste Transfer Virtual Tour

Teacher Guide

Region of Peel
working with you

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Introduction

Introduction

Welcome to Peel's virtual tour of our waste management facilities. This resource has been developed to support you as you lead your students through the Waste Transfer process at the Peel Integrated Waste Management Facility. This guide will provide you with practical suggestions and ideas to support inquiry-based learning, as you explore every page of the virtual tour with your students. The suggested discussion questions and extension activities can be adapted to meet the Ontario curriculum expectations for kindergarten to grade 12. This tour covers topics such as proper waste sorting, landfill impact on our environment, and the importance of our waste management system.

The virtual tour can be used as a stand-alone activity or can kick-start further exploration and learning.

Why a virtual tour?

With waste it's often "out of sight, out of mind". However, can we really think of waste as "out of mind" with the growing impacts landfills and contamination have on our environment? This tour was designed to highlight to students and staff the impact that proper waste sorting has on our environment and how our current waste systems affect the environment around us. This tour will ask students how their actions make a difference and call upon them to make little changes within their life to help keep our environment healthy. It will provide teachers and students exclusive access to Peel's Integrated Waste Management Facility on a level not seen before with in-person tours. It also allows teachers a platform to educate their students on waste management within our region to showcase what happens to their waste products past throwing them in the garbage bin.

Program Overview

Key Themes:

- Waste Transfer Process, Waste Sorting, Careers, Environmental Impacts of Landfills

Learning Goals:

At the end of the virtual tour, students will be able to:

- Identify the main stages of the waste transfer process.
- Identify how landfills affect animals and the environment around it.
- Identify what items should go into the garbage bin vs. in the recycling or organics bins.

Technology requirements:

To access the tour, students will need access to a computer lab, tablets or other internet-enabled devices or have shared access to a smart board/projector screen. The tour can be accessed on a smart phone but works best on a large screen.

The virtual tour can be accessed in different internet browsers but is optimized for Google Chrome.

Introduction

How to Use the Tour

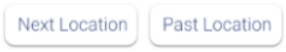
There are two delivery methods for this tour:

Student self-exploration: Student can access and explore the tour on their own devices while using the provided handout as a guide.

Teacher-led: If there is access to a class smart board/projector screen or online learning platform, the teacher can facilitate the virtual tour, and use this guide and accompanying discussion questions to facilitate class-wide discussions.

Below you will find step-by-step guide for exploring the virtual tour as a group, including speaking notes, a summary of interactive points within the tour and suggested discussion questions.

Navigation

The virtual tour is easy to navigate. There are 3 tour stops (not including the introduction, scale house and closing) and each stop can be navigated to using the left-hand panel of images. You can also navigate between stops by selecting the "past location" and "next location" 

buttons at the bottom of the screen. As you move between stops, a text box will pop-up summarizing the importance of that stage in the tour.

Each tour stop has clickable interactive icons to provide more information and photos.

Button	Purpose
	Additional information
	Video clips

You can use the computer mouse or trackpad to click and drag around each stop for a 360-degree panoramic view. You can also zoom in on areas of the tour for a closer look – simply scroll forward and backwards using your mouse or pinch your laptop trackpad. If you're working from a touch screen, you can move by touching the arrows icons, dragging across the screen to move, and pinching out to zoom in.

Introduction—Aerial View

What happens at the Peel integrated Waste Management Facility?

This is an aerial view of the Peel Integrated Waste Management Facility. This Facility is located in Brampton and processes garbage, organics and recycling for the Region of Peel.

Navigation

There are six interactive icons to help students learn more about the Peel Integrated Waste Management Facility. The icons include text and a video.

1 

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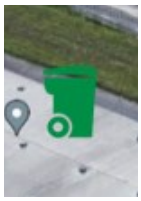
3 

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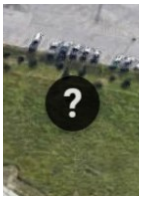
5 

6

1. **Scale House:** Navigate to the interactive icon to see where the Scale House is located.
2. **Material Recovery Facility:** Navigate to the interactive icon to see where the Material Recovery Facility is located.
3. **Primary Composting Facility:** Navigate to the interactive icon to see where the Primary Composting Facility is located.
4. **Waste Transfer Station:** Navigate to the interactive icon to see where the Waste Transfer Station is located.
5. **The Integrated Waste Management Facility:** Select this icon to learn more about how much waste the whole facility receives.
6. **Video:** Select this video to see a 360° view of the facility.

Discussion Questions

What are some common items that can go in the garbage?

Chip bags, snack wrappers, diapers, aluminum foil, chewing gum, coffee cups, for a complete list, visit: Garbage - Region of Peel (peelregion.ca)

One of the most common contaminants in recycling is disposable coffee cups. After all of the resources are put in to make a coffee cup, it still belongs in the garbage after one use. Can you name the major steps from the production to disposal of one coffee cup?

- *Sourcing raw materials*
- *Powering production factories*
- *Transportation to coffee shops across Canada and the world for purchase*
- *Customer purchase and uses it*
- *Goes into the trash and is transported to a landfill*

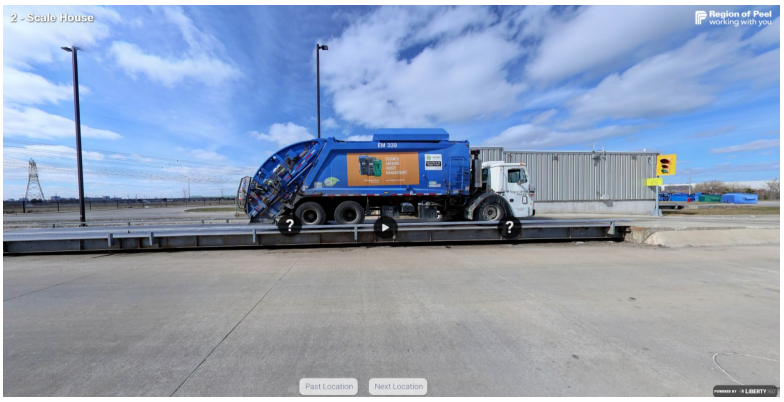
What is one item made of plastic that you could give up forever and one that you could not live without?

For example, plastic water bottles are an item that we can easily live without. Having a reusable water bottle can help limit all the plastic bottles that are used daily.

Scale House

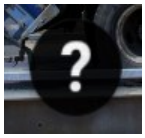
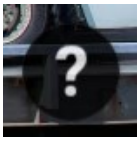
What happens at the Scale House?

When Collection Trucks arrive at the Facility they first go to the scale house to be weighed. Trucks drive onto a scale then can head to their respective area to drop off waste , in this case the Material Recovery Facility.



Navigation

There are three interactive icons to help students learn more about the Scale House. The icons include text and an accompanying video.

1  **2**  **3** 

1. **Collection Truck:** Navigate to the interactive icon to see the collection truck.
2. **Video:** Select this video to see the process of collection trucks driving entering the Scale House.
3. **Scale House:** Select this icon to learn how much waste the collection trucks bring to the Scale House.

Discussion Questions

Why do you think we weigh our waste before we bring it into the Facility?

We want to monitor how much waste is brought to the facility. It will allow for us to see how much of the waste we produce is headed to landfill.

Throwing your garbage on the ground can harm animals, pollute water, and contaminate the air. Do you think it is fair to fine people who litter? How much should it be?

Read about littering policies in the community

People Against Littering | People Against Littering

Bill Godfrey at war against litter in Brampton | Brampton Focus

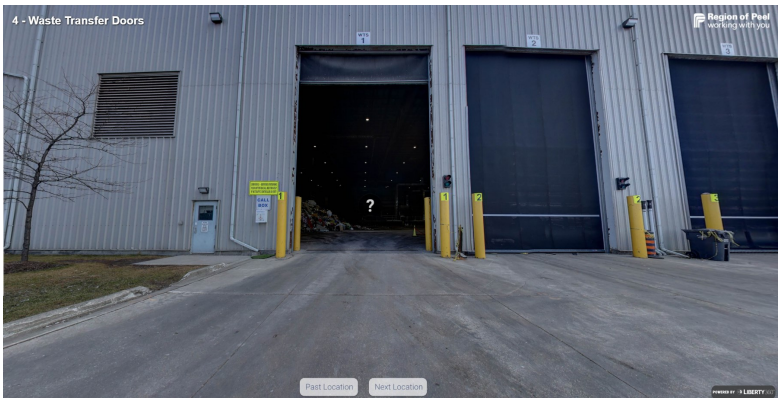
Volunteer Litter Cleanup Program – City of Mississauga

Do you think your school should have a littering policy? What are some things you would include in the policy to ensure your school grounds are litter free? Discuss your thoughts with the class to see what you come up with.

Waste Transfer Doors

What happens at the Waste Transfer Doors?

This is the entrance to the Waste Transfer Station. The Waste Transfer Doors are the first stop for Garbage collection trucks after exiting the scale house. Collection trucks enter here to offload waste in the Facility.



Navigation

There is one interactive icon to help students learn more about the Waste Transfer Doors. The icon includes text.

1

1. **Opened Waste Transfer Door:** Select this icon to learn more about the history of the Waste Transfer Station.

Discussion Questions

What can you as someone who lives in Peel do to prevent Recycling and Organics from being sent to our Waste Transfer Facility?

You can learn what goes into your organics, garbage, and recycling carts. You can also share this with people who may not know!

Contamination happens because people may not know what goes into our organics bins. Thankfully, Peel has a search tool that makes deciding where an item goes easy!

How to sort your waste - Region of Peel (peelregion.ca)

During lunch all kinds of waste get thrown away in your classroom. Can you think of some common lunch items that get thrown away into the garbage or recycling? And what are some alternatives to reduce the waste we make?

Ex: Bottled Water— use a reusable water bottle instead

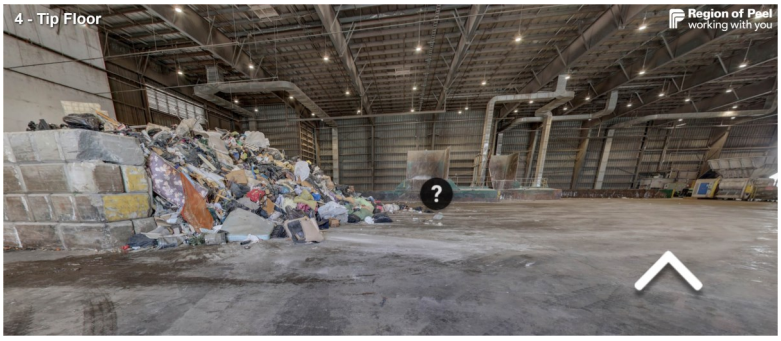
Extension Activities

Want to take a walk outside and learn more how to respect our environment? Try out this activity in which you walk around your school's neighbourhood and look for litter in our environment.

Tip Floor

What happens at the Tip Floor?

Collection trucks enter through the waste transfer doors and offload the garbage they've collected on their neighbourhood routes. The garbage is then moved into a compacter machine to be squished for easier transport in the transport truck headed for landfill.



Navigation

There are three interactive icons to help students learn more about the tip floor. The icons include text and a video.

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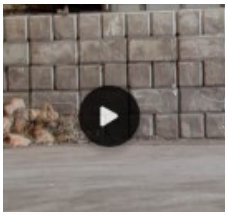


1. **Tip Floor:** Select the icon to learn more about the Waste Transfer Station.
2. **Video:** Select the video icon to see a collection trucking offloading garbage onto the tip floor.
3. **Pile of Waste:** Select this icon to show students that not everything on the tip floor is garbage. Can be used as a discussion question: "What do you see that doesn't belong in the garbage bin and should be in either the recycling or organics bin?"

   Potential Answers: Here are some examples and where they should go:

   a. Cardboard box (Recycling)

   b. Grocery Bag (Recycling)

a

b

Discussion Questions

If items that should be in the recycling or organics are thrown in the garbage, we waste the resources and energy used to make them as their lifecycle ends there. Can you think of some items that are thrown into the wrong bin?

- ***Printer Paper:*** *Can be recycled to create more paper products.*
- ***Chip Bags:*** *Should be placed in the garbage. Since it is shiny and crinkly, we know it should be in the garbage.*

Extension Activities

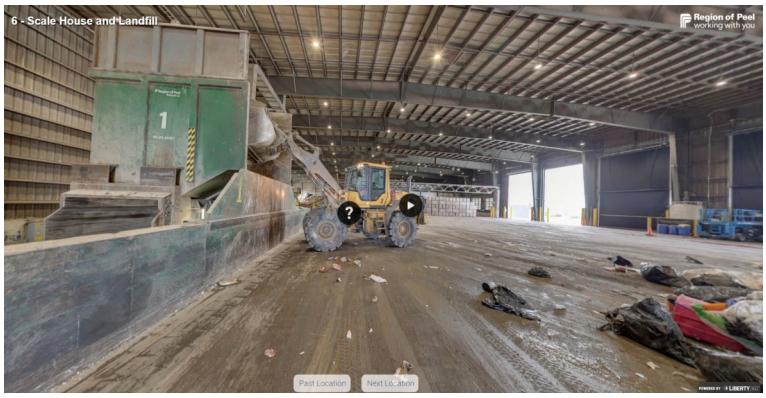
Sorting is a very important skill for everyone to learn so that we can reduce the amount of contamination we send to landfill. We wouldn't want to be sending organics or products that could be recycled to landfill!

To test or show off your sorting skills, try out this fun sorting game.

Scale House and Landfill

What happens at the Scale House and Landfill?

A front-end loader takes the waste on the tip floor and loads transport trucks with the waste. The trucks drive to the scale house to be weighed and then continue to the landfill in Warwick, Ontario.



Navigation

There are two interactive icons to help students learn more about the transport of waste to landfill. The icons include text and a video.

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2 

1. **Front-End Loader:** Select the icon to learn more about the landfill and the amount of waste that gets transported there.
2. **Video:** Select the video icon to see a front-end loader loading a transport truck.

Test your knowledge

Once you complete the Virtual Tour, play our Kahoot, designed to test your learning of the Waste Transfer process.

Link: https://create.kahoot.it/share/waste-virtual-tour-peel-region/fee73aed-4c66-4a38-8fb9-3db284db7153

Discussion Questions

You've seen a lot of people who work in this Facility who play important roles in helping move our waste. What jobs have you seen and what do they do?

- ***Waste Collection Driver:*** *They collect our garbage from our neighborhoods.*
- ***Front-End Loader Operator:*** *They check our sorting job to make sure items that shouldn't go to landfill don't end up there.*

All this waste here is heading to landfill. Do you think you'll see animals at the landfill? And how would this waste affect them?

You might see seagulls, rodents or different kinds of bugs there. If they were to eat something toxic it may affect their health or they could get tangled in something.

Extension Activities

Sometimes the best thing we can do for the environment is to make simple choices in our own life. If we all pledge to do a couple of tasks then all together we can make a greater difference!

Select here to use the Pledge to Be a Green Warrior Worksheet to help plan goals to be more environmentally friendly.

Appendix A: Curriculum Connections

Grade 1

Subject & Unit	Specific Expectations
Science & Technology: Understanding Life Systems	Identify personal action that they themselves can take to help maintain a healthy environment for living things, including humans.
Science and Technology: Understanding Structures and Mechanisms	Assess the impact on people and the environment of objects and structures and the materials used in them Identify the kinds of waste produced in the classroom, and plan and carry out a classroom course of action for minimizing waste, explaining why each action is important.
Social Studies: People and Environments	identify some services and service-related occupations in their community (e.g., occupations such as sanitation worker, store clerk, restaurant server, repair person; services provided by the post office, the band office, the water treatment plant, grocery stores, gas stations), and describe how they meet people's needs, including their own needs

Grade 2

Subject & Unit	Specific Expectations
Science and Technology: Understanding Life Systems	Identify positive and negative impacts that different kinds of human activity have on animals and where they live; form an opinion about one of them, and suggest ways in which the impact can be minimized or enhanced.
Science and Technology: Earth and Space Systems	Assess the impact of human activities on air and water in the environment, taking different points of view into consideration (e.g., the point of view of parents, children, other community members), and plan a course of action to help keep the air and water in the local community clean.
Science and Technology: Understanding Structures and Mechanisms	Assess the ways in which liquids and solids in the home are used, stored, and disposed of in terms of the effect on personal safety and the health of the environment, and suggest responsible actions to replace inappropriate practices.

Grade 3

Subject & Unit	Specific Expectations
Social Studies: People and the Environments	Gather and organize a variety of data and information on the environmental effects of different land and/or resource use and measure taken to reduce the negative impact of that use.

Appendix A: Curriculum Connections

Grade 4

Subject & Unit	Specific Expectations
Science & Technology: Understanding Life Systems	Analyse the positive and negative impacts of human interactions with natural habitats and communities (e.g., human development on natural materials), taking different perspectives into account (e.g., the perspectives of a housing developer, a family in need of housing, an ecologist), and evaluate ways of minimizing the negative impacts.
Social Students: People and Environment	Evaluate evidence and draw conclusions about issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in Canada.

Grade 5

Subject & Unit	Specific Expectations
Science & Technology: Understanding Earth and Space Systems	Analyse the immediate and long-term effects of energy and **resource use** on society and the environment, and evaluate options for conserving energy and resources.
Social Studies: People and Environments	Describe some different ways in which citizens can take action to address social and environmental issues.

Grade 6

Subject & Unit	Specific Expectations
Social Studies: People and Environments	Explain why some environmental issues are of international importance and require the participation of other regions of the world, along with that of Canada, if they are to be effectively addressed (e.g. disposal of electronic waste) Sample question: "Why can the disposal of your old computer be an environmental issue of international importance?"

Grade 7

Subject & Unit	Specific Expectations
Geography: Natural Resources around the World	Describe some responses to social and/or environmental challenges arising from the use of natural resources.

Appendix A: Curriculum Connections

Grade 8

Subject & Unit	Specific Expectations
Science & Technology: Understanding Structures and Mechanisms	Assess the personal, social, and/or environmental impacts of a system, and evaluate improvements to a system and/or alternative ways of meeting the same needs. Asses the social, economic, and environmental impacts of automating systems Identify social factors that influence the evolution of a system (e.g., growing concern over the amount of waste creates a need for recycling centres,
Social Studies: People and Environments	identify some services and service-related occupations in their community (e.g., occupations such as sanitation worker, store clerk, restaurant server, repair person; services provided by the post office, the band office, the water treatment plant, grocery stores, gas stations), and describe how they meet people's needs, including their own needs

Grade 9

Subject & Unit	Specific Expectations
Technological Education: Technology, the Environment, and Society	Describe how various technologies (e.g., resource extraction) affect the environment, and identify important environmental considerations associated with different areas of technology (e.g., how to deal with hazardous wastes; how to increase opportunities for recycling. conservation, use of sustainable methods or materials) Identify technological solutions that have been designed in response to environmental concerns (e.g., non-toxic and hypoallergenic products, recyclable and reusable packaging) Follow proper procedures for safe storage and disposal of materials and waste products (e.g., keep flammable solvents, paints, and varnishes in non-combustible cabinets; recycle used motor oil).

Appendix A: Curriculum Connections

Grade 10

Subject & Unit	Specific Expectations
Technological Education: Technology, The Environment, and Society	Explain the need for environmental stewardship and describe how manufacturing industry can act in an environmentally responsible way (e.g., by harvesting raw materials in a sustainable manner, using energy from renewable sources, making products that can be recycled, ensuring ethical treatment of people affected by manufacturing activities) Research and report on ways in which the transportation industry affects the environment and on efforts being made to remedy or reduce harmful effects (e.g., automotive parts recycling), including ways of disposing of waste products (e.g., used oil, used batteries, used paint/thinners) Describe the pros and cons of using environmentally friendly products (e.g., biodegradable cleaners) and procedures (e.g., recycling of materials) when

Grade 11

Subject & Unit	Specific Expectations
Technological Education: Technology, the Environment, and Society	Describe environmentally friend disposal procedures for waste food products and food packaging (e.g., composting, recycling) Create a plan to implement an environmentally friendly disposal procedure for waste food products and/or food packaging (e.g., a plan to set up a composting or recycling program in the school cafeteria, a plan to encourage the use of biodegradable containers for take-out food)

Grade 12

Subject & Unit	Specific Expectations
Technological Education: Industry Practices, the Environment, and Society	Analyse the environmental costs and benefits, local and global, of recent innovations in communications technology (e.g., costs and benefits related to resource usage, energy demand, waste disposal, toxic substances, radiation, air and water pollution) Describe ways of minimizing or avoiding harmful environmental effects caused by communications technologies and media activities (e.g., upgrade products rather than dispose of them; turn off equipment that is not being sued; treat dead batteries as toxic waste; recycle used paper and printer cartridges)

Appendix A: Curriculum Connections

Grade 12

Subject & Unit	Specific Expectations
Technological Education: Technology, The Environment, and Society	Identify potentially harmful consequences of manufacturing activities for the environment (e.g., waste disposal, greenhouse gas emissions, water and energy consumption, the depletion of non-renewable resources), and formulate alternatives to reduce the severity of these consequences Explain how the three Rs (reduce, reuse, recycle) can minimize the effect the manufacturing industry has on the environment Follow environmentally responsible practices during the design and manufacture of a product (e.g., minimize waste, consider suing renewable or recyclable materials, design and manufacture products that last or can be repaired as opposed to throwaway products, use processes that have minimal impact on workers and the local environment) Demonstrate an understanding of the importance of using sustainable and environmentally friendly manufacturing practices Follow environmentally responsible practices during the design and manufacture of a product (e.g., minimize waste, consider using renewable or recyclable materials, design and manufacture products that last or can be repaired as opposed to throwaway products, use processes that have minimal impact on workers and the local environment Demonstrate an understanding and application of the three Rs in a manufacture facility (e.g., reduction of waste through efficient selection and conversion of materials, reuse of materials when possible, effective collection and recycling of materials and/or fluids) Demonstrate the use of proper techniques for the disposal of obsolete and/or waste products

Student Handout

Waste Transfer Station Tour

Fill in the table below as you complete the Waste Transfer Station Virtual tour.

	Why do we have this stage in the Waste Transfer process?	**What did you find interesting about this tour stop?**
1. Introduction—Aerial View		
2. Scale House		
3. Waste Transfer Doors		
4. Tip Floor		
5. Scale House and Landfill		

Student Handout Answer Key

Waste Transfer Station Tour

Fill in the table below as you complete the Waste Transfer Station Virtual tour.

	Why do we have this stage in the Waste Transfer process?	**What did you find interesting about this tour stop?**
1. Introduction—Aerial View	• This stage is where garbage, organics and recycling is processed for the Region of Peel	
2. Scale House	• This stage portrays the location trucks go to weigh waste • Weighing waste is important for metrics calculating how much waste is brought to the facility and landfill diversion	
3. Waste Transfer Doors	• This stage is the entrance to the Waste Transfer Station, the first stop after exiting the scale house • This is where collection trucks enter to offload waste in the Facility	
4. Tip Floor	• This stage is where trucks offload organic waste onto the “Front-end Loader” • This stage is important because it ensures that there is no contamination between objects • The organics are later mixed with yard waste to balance the pile’s moisture levels	
5. Scale House and Landfill	• The waste is later transported from the tip floor, to transport trucks, and then the scale house • This stage is important because waste is weighed and continues its route to the landfill in Warwick, Ontario	