

# REUSABLE BAGS

## SECONDARY



Learning for a  
Sustainable Future

# LSF

## ACTION TOOLKIT



# TABLE OF CONTENTS

<b>OVERVIEW</b>	<b>2</b>
<b>LEARNING OBJECTIVES</b>	<b>3</b>
<b>INTRODUCTION</b>	<b>4</b>
<b>PART A: SDG CONNECTIONS</b>	<b>6</b>
<b>PART B: PREPARATORY ACTIVITIES</b>	<b>8</b>
Activity B1: Life Cycle of A Plastic Bag	9
Activity B2: Discover Biodegradation	11
Activity B3: Reuse Audit	13
Activity B4: Think Green	19
<b>PART C: BAG-MAKING DAY</b>	<b>20</b>
Activity C1: Reuse Trivia	21
Activity C2: The Bag Issue	24
Activity C3: Make-a-Bag, Laptop Sleeve, Lunch Bag, or Phone Case	26
Activity C4: How Did We Do?	30
Activity C5: Reflection	32
<b>PART D: FOLLOW-UP ACTIVITIES</b>	<b>33</b>
Activity D1: Reflection Journals	33
Activity D2: Plastic Bag Log	33
<b>PART E: OTHER OPPORTUNITIES FOR PROMOTING REUSE</b>	<b>34</b>
Activity E1: Clothing Swap	34
Activity E2: Reuse, Reuse, Reuse!!	37
Activity E3: Campaign to Promote Reuse!	39
<b>APPENDIX A: BACKGROUND INFORMATION</b>	<b>41</b>
<b>APPENDIX B: ASSESSMENT OPPORTUNITIES</b>	<b>44</b>

# OVERVIEW

**BACKGROUND INFORMATION:** Please refer to [Appendix A](#) for background information on the following topics:

- Reuse And The Waste Hierarchy
- How Plastic Bags Are Made
- The Issue Of Plastic Bags
- Recycling Plastic Bags
- Why Make A Reusable Bag?
- What Else Can You Do?

**AGE GROUP:** Grades 9 to 11

**PROJECT TIME:** Activities can take place at any time during the year. Teachers can choose from a number of different preparatory and post-project activities to support the half-day schedule of Make-A-Bag Day Activities:

- Preparation Activities
  - o Choose 1-3 learning activities to help students understand the importance and value of reusing (each activity takes approximately 1, 60-minute period).
- Make-A-Bag Day
  - o Allocate half a day to complete the Make-A-Bag Day activities.
- Follow-Up
  - o Choose one or more follow-up activities so students have a chance to reflect on their experience and extend their learning with further actions (allocate 1-2 60-minute periods or more depending on the extension activities chosen).

## CURRICULUM CONNECTIONS:

This Action Toolkit can be linked to Science, Mathematics, Language Arts, Social Studies, and Art.

For information about curriculum links specific to your province/territory/region and grade, visit the [Reusable Bags](#) review on R4R.

## LEARNING OBJECTIVES:

For students to...

- Become acquainted with the concept of reusing.
- Learn about the importance of prioritizing reducing and reusing over recycling.
- Understand the impact that our waste has on the natural environment, economy and the human community.
- Learn about the impacts of plastic bags on all humans, other animals and plants.
- Take action by constructing their own reusable bag in order to reduce the number of plastic bags used by Canadians.
- Learn to think creatively about how to reuse common household items.
- Become active citizens in their community.
- Translate classroom learning into community action through a reusable bag campaign in which students will take home and share the learning with their families and community.

**SUSTAINABLE DEVELOPMENT GOALS:** *Building a Vermicomposter connects to the following [UN SDGs](#)*



*\* Please help to reduce the amount of paper we all use by only printing off double-sided and necessary pages. Model sustainable behaviour for your students; remember, your actions speak louder than words! [If you wish to access the student worksheets from this action toolkit, you can access them here.](#) \**



# INTRODUCTION

What if...Shopping bags weren't just made for shopping? Those jeans weren't just made for you.

The process of **reusing** aims to extend the useful life of products by finding new ways to use otherwise obsolete or superfluous items. Canadians do an excellent job with our recycling programs, diverting great amounts of solid waste from landfills. Recycling still requires large amounts of fuel to truck things to the depot and large amounts of electricity to turn those objects into usable material. Reusing items in creative ways before they are recycled allows us to reduce the amount we waste and recycle as a whole. There are plenty of innovative ways we can reuse and reduce common household products, and learning how to do so is what this project is all about. Specifically, by the end of this project, we aim to flatten your fluffy pile of plastic shopping bags and make your class into reusing and reducing superheroes – saving your money and helping our community.

## Why is this project important?

This project helps students to understand the importance of both reducing and reusing.

- While 160,000 plastic bags are consumed every second, less than 1% of plastic bags are recycled, and 1-3% of plastic bags end up as litter.
- In a landfill, a plastic bag will take approximately 1000 years to biodegrade, while the average plastic bag is used for 12 minutes. Reusing the plastic bags we already have and reducing the number of plastic bags we use in the future will help conserve existing landfill space. This helps with the garbage crisis as landfills are brimming, and new sites are expensive and not easily found.
- Close to 15 billion plastic bags are used annually in Canada, while up to 16 million plastic straws are used daily! However, the federal government has pledged to have [zero plastic waste by 2030](#) and ban the import and manufacturing of single-use plastics by December 2022.
- Producing plastic bags requires a lot of oil and adds to Canada's carbon footprint. [To produce 100 million plastic bags requires 1.6 million litres of oil](#). Of course, we have a limited supply of petroleum on Earth.

- [WWF reported](#) that every year, approximately 100,000 marine animals, including whales and sea turtles, die from ingesting plastic bags. Many of us are familiar with the 4Rs--“rethink, reduce, reuse, and recycle.” What many people are less familiar with is that the 4Rs are said in the order in which they have the most benefit to Earth and all of us. For example, **rethinking** the way we design things can have huge benefits. For example, compact fluorescent light bulbs use [75% less energy](#) than traditional incandescent light bulbs.
- **Reducing** is more advantageous to Earth and all of us than **recycling**. For example, when you recycle an aluminum can, you use approximately five percent of the resources that would have been used if you had purchased a new can. This is much better than using a new can! However, you do use additional resources when you have someone come to your house or school to pick up the can to bring it to the recycling plant. Every time you do not use an aluminum can at all, you effectively use zero percent of the resources you would have consumed if you had used a new can!
- The use of one reusable bag for a whole year is estimated to [save up to 500 single-use plastic bags](#).
- When one tonne of plastic bags is reused, it saves an equivalent of [16.3 barrels of oil](#)



# PART A: SDG CONNECTIONS

## Activity SDG: CONNECTING LEARNING TO THE SDGS

The United Nations 17 Sustainable Development Goals (SDGs), which were adopted by all United Nations Member States in 2015, provide a holistic understanding of the world's most pressing challenges, linking the social, environmental, and economic dimensions of sustainable development. They act as an urgent call to action for all countries and provide a shared framework using indicators and targets through which we can measure action and progress.

For this reason, it is key for students to understand the 17 SDGs and how their actions and climate initiatives can connect to these Goals. This activity will give students an opportunity to apply the knowledge they gained throughout this action toolkit and think critically about the SDGs.

1. As a class or in small groups, have the students explore the SDGs through the [UN's SDG website](#) and the [Global Goals webpage](#). Students type out or write on a piece of GOOS paper which SDGs they think could be connected to reusable bags and why. Alternatively, if your class has an SDG poster or if you would like to create one, students can write down their vermicomposting connections on sticky notes and map them across the poster.
2. Using an active learning strategy, such as a [Talking Circle](#) or [Two Stray, One Stay](#), have the students engage with one another and explore the answers that they wrote down during the second step of this activity. You can find more active learning strategies that might come in handy in [Appendix B: Assessment Opportunities](#) or LSF's [Active Learning Strategy Bank](#)!

### SDG Connections: Examples

As you go through this action toolkit, your students may find many connections with the SDGs. Some possible Reusable Bag connections that your students could make:



In order for a city or community to be sustainable, we must learn to live without any disposable products. This action toolkit has your students getting closely involved with creating a product that can replace plastic bags and can be used for a long time.



Having the students reuse a pair of old jeans to create a bag teaches them about how, before going out to purchase new products, we should look around us for what we already have and how we can use them in a creative and responsible way.



By creating a reusable bag through recycled materials the students will be able to use these bags rather than plastic bags that negatively affect our climate.



Plastic bags tend to end up in our waterways and cause a lot of harm to the life below the water. By creating reusable bags out of old clothes, less plastic will end up in our lakes and oceans.



By creating reusable bags, the students will not need to use as much disposable plastic that will end up in our landfills and harming animals and plants.

*While these examples act as a starting point, give your students time to ask questions and discover the SDG connections for themselves.*

*If your students are not yet familiar with the UN Sustainable Development Goals, as a Minds On activity, allow some time for them to get acquainted by watching the video [The World's Largest Lesson](#).*



## PART B: PREPARATORY ACTIVITIES

Time	Description	Materials
60 minutes	Students arrange the pieces of the “Product Life Cycle Puzzle” and consider the benefits of extending a product’s life cycle	<input type="checkbox"/> One copy of “Product Life Cycle Puzzle” per group on Good on one Side (GOOS) paper (see page INSERT PAGE) <input type="checkbox"/> One envelope per group

**Step 1:** Have students start collecting necessary materials for the activities the class will do, e.g.,

- clean, used paper with one blank-side to be reused as journals
- used fabrics
- used a sturdy cloth to be made into cloth bags (denim works well!)

**Step 2:** Recruit adult volunteers to participate in the Make-A-Bag Activity Day.

**Step 3:** Start your class off with a selection of the following preparatory activities, Activities B1 – B4.

## ACTIVITY B1: LIFE CYCLE OF A PLASTIC BAG

### Instructions:

1. Form groups of two to three students in the class. Provide each group with an envelope containing the six cut-up pieces of the [‘Product Life Cycle’ puzzle](#). Ask students to put puzzle pieces in the order of ‘life stages’ the product goes through, i.e. the product life cycle of a computer.

(Note: Some of the students will see that the pieces create a ‘loop/cycle’ rather than a sequence. If some students do not come to this recognition, prompt students with such questions as “At the end disposal stage, what are the different consequences of the options presented, i.e. garbage, recycling, reuse and repair/refurbish?” or, more bluntly, “Once we have repaired computers, what stage of the life cycle can they re-enter?”)

2. Ask one group to present the cycle using the document camera and the set of printed puzzle pieces.
3. In a class discussion, discuss the benefits of extending the life of a product:
  - a) What are the environmental benefits of extending the life of a product?  
*(Fewer raw materials are used.)*
  - b) What are the benefits for people in their daily lives of extending the life of a product?  
*(Can use items longer themselves or give them to someone else to use. People also have to spend less time shopping for new or replacement items.)*
  - c) What are the financial benefits of extending the life of a product?  
*(Spend less money making and transporting items.)*

### Closing reflection questions:

- *Do you care about extending the lives of manufactured products? Why or why not?*
- *Which products do you think are the most important to reuse? (For example, which potentially reusable products either produce the most waste because of the ways we currently use them, or which potentially reusable products could save the most resources if they were reusable?)*
- *What items do you currently reuse? What are the benefits of your reuse practices? What are the drawbacks?*





## Student Information Sheet



The puzzle activity was adapted from [Discover the Technology Loop](#) Product Life Cycle Puzzle

### DESIGN



Designers and engineers make choices that affect how computers are made, how they are used, and how they look.

### RESOURCES



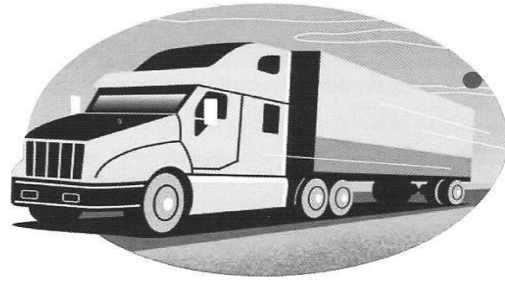
Resources are the materials from which computers are built and can be both natural and human-made.

### MANUFACTURING



Manufacturing is the process of taking raw materials and energy and turning them into computers.

### DISTRIBUTION



Distribution is the process of getting products from the factory to users.

### USE



We use computers on a regular basis for both work and play.

### END OF USE



#### RECYCLING



#### DISPOSAL

There are several choices for managing aging or unwanted computers: extending their life through reuse and refurbishment, and recycling for use in new products. Unfortunately, they are often still disposed of in landfill sites.



#### REUSE



#### REFURBISHMENT

## ACTIVITY B2: DISCOVER BIODEGRADATION

Time	Description	Materials
1 month to a full school year	Early on in the school year, students bury three types of bags in compost and take turns monitoring their varying decomposition rates, as well as tending to the decomposition bins	<input type="checkbox"/> plastic bag, <input type="checkbox"/> paper bags. <input type="checkbox"/> 'bioplastic' bag <input type="checkbox"/> gardening gloves, <input type="checkbox"/> trowel or big spoon

### Instructions:

- Ask students to guess how long certain products take to biodegrade (check students' understanding of this term and offer an explanation as necessary). Choose a sample of the following items and reveal the answer after students make their guesses.
  - Banana peel, 2 – 10 days
  - Cotton rags, 1 – 5 months
  - Sugarcane Pulp Products, 30 - 60 days
  - Paper, 2 – 5 months
  - Rope, 3 – 14 months
  - Orange peels, 6 months
  - Wool socks, 1 – 5 years
  - Cigarette filters, 1 – 12 years
  - Tetrapaks (plastic composite milk cartons), 5 years
  - Leather shoes, 25 – 40 years
  - Nylon fabric, 30 – 40 years
  - Plastic six-pack holder rings, 450 years
  - Diapers and sanitary napkins 500 – 800 years
  - Tin cans 50 - 100 years
  - Aluminum cans 80 - 100 years
  - Plastic Bottles, 1000+
  - Styrofoam cup, non-biodegradable
- Explain to students that this activity will allow them to discover differences in the decomposition processes of plastic bags, paper bags, and biodegradable bags. Ask students what differences they might expect to find.

3. Have students design and conduct an experiment to compare the decomposition of each type of bag. Considerations:
  - Controlling variables: (e.g. size of bag sample, depth buried temperature, etc.)
  - Types of observations (appearance, size, etc.)
4. In pairs, ask students to compare and discuss their experiment design. Discuss as a class.
5. Monitor the composter weekly until the eve of the class Make-A-Bag Day Action Day.
6. At the end of the monitoring period, invite students to discuss the differences they noticed in the decomposition process of each of the three bags.

## Reflection questions:

- 1) For items that take longer to biodegrade than others, what are the greater effects on the environment, society and the economy? (Waste takes up space on the planet for a longer period of time; land used for landfills reduces the amount of land available for wildlife habitat, plant growth, and human economic, social activities, and agricultural activities; Leachate can contaminate soil and water resources for a longer period of time which can harm all plants and animals - including humans.)
- 2) Knowing that some products take longer to biodegrade than others - at a higher cost to the environment, society and our pocketbooks - why do people still continue to use products that would reduce the amount of waste left to biodegrade? (e.g.: financial cost, better options not always readily available, etc.)
- 3) Considering their answers to the previous two questions, would students personally consider switching to using products that biodegrade more easily or that produce less waste? Why or why not?



## ACTIVITY B3: REUSE AUDIT

Time	Description	Materials
Day 1: 30 minutes	Students investigate reuse practices at school by conducting a survey of waste and recycled items. Students then apply these survey skills to investigate an area of their choice. Finally, students come up with a top 10 list of reusable items and choose one item from this list about which to ask, "Why should we bother to reuse this item?" Students list reasons for reusing the selected item.	<input type="checkbox"/> School Reuse Audit Worksheet
Day 2: 60 minutes		
Day 3: 60 minutes		

### Day 1:

1. Have a short discussion about reuse as it fits in with the 3 R's to ensure students' understanding of the concept, i.e. reuse is near the top of the solid waste hierarchy. Please refer to [Appendix A](#) for background information.
2. Explain to students that the goal of the activity they are going to do is to find out what items are being thrown out and how they can either a) be reused or b) be replaced with an item that is reusable.
3. Suggest that it would be best to start investigating in places where they and other students spend most of their time. Ask students where they spend most of their time.  
[Assuming that students respond with the answers "school" and "home", the following steps ask students to audit their school and home settings. If students respond with other places, e.g. hockey rink or church, then the reuse audits can be conducted in these places instead.]
4. Distribute the [School Reuse Audit!](#) instruction/worksheet. Read and explain the task described on the worksheet, i.e. explain to students that they are going to investigate what items people at school are throwing away in school garbage bins and recycling bins (and on the ground?) that could have been reused.
5. Prepare to conduct the audit by asking students to suggest places in the school where they should look and when school traffic in these areas is high. Record these on the board in a chart-like form and have pairs of students volunteer to audit these places (depending on class size and the number of places your class will audit, students may also investigate in groups). Sample board note:



Place to audit	Popular Times	Student Auditors
Library	1-2 pm	Mohamed & Twinky
Beside basketball court	Lunch recess	Lydia & Mike
Side doors to the school	After school	Kylie & Lee & Ricardo

- After students have volunteered to audit a site, have them record this on their individual [Reuse Audit worksheets](#). Suggest that students audit these places at times just after high traffic times.
- Give students a few minutes to discuss what 3-4 items they think they will find the most of, and have them list these items so that they can focus on estimating the amount of these items when they conduct their search. Explain that when they conduct their audits, they should also list other items they find.
- Give students time to conduct their audit.

*(Note: Teachers might ask students to select a representative to speak to the school staff responsible for overseeing garbage and recycling collection to ensure that student audits occur before bins are collected.)*

## Day 2:

- Invite students to give brief reports on their findings of the school audit to the whole class, e.g. state place audited and 2-3 of the most popular items found and/or ask a pair of students to develop a way for everyone to share their data effectively and efficiently. Were students correct in predicting the items they would find? Record items on the board.
- Ask students to work in groups of 3-4. Refer to the last two columns of the [Reuse Audit worksheets](#), i.e. "Could it have been reused?", and "Could it have been replaced by something reusable?" Students brainstorm as many reusable alternatives as possible for each of the items listed on the board.
- After about 10 minutes of group brainstorming, students should review their list of suggestions and come up with a "Top 10 List" of reuse alternatives. (This would be a good exercise for students to learn about and practice the art and science of consensus building, a valuable skill for responsible citizenship.
- Each group presents its Top 10 List of Possible Reuse Alternatives for the school.

5. Ask students if they think that they would find similar waste items in garbage and recycling bins at home or other popular places where students spend their time. Ask students whether similar reuse alternatives might be possible.
6. Tell students that to check their answer to the question above, for homework, they will conduct a similar audit of waste being thrown into their home garbage and recycling bins. Give students in-class time to prepare Reuse Audit Sheets of their own or photocopy and distribute the hand-out provided. As with their school reuse audit, students should attempt to predict a few popularly thrown-out items they will find and list these before they leave class to conduct their audits. Teachers should ensure that the places, times and some of the items listed by students are safe and appropriate.

**Day 3:**

1. In small groups, ask students to discuss and compare their audit record sheets for their homes. Ask groups to come up with a list of the 5 most popular items they found in a) their garbage cans and b) their recycling bins. Ask one group to come up with an effective and efficient way to share the data.
2. Back in their groups, ask students to brainstorm reusable alternatives for the items listed on the board that were not listed in the school audit (there will likely be a number of repeated items from the previous audit). Students come up with a Top 10 List of reusable alternatives for their homes.
3. As a class, compare the Top 10 Lists of reusable alternatives for the school and the home. Together, pick one top-listed alternative and discuss how adopting this practice would:
  - a) save money
  - b) benefit other animals and the natural environment
  - c) benefit the human community (in ways that are less related to the natural environment)
  - d) challenge students to check that their responses consider plants, humans and other animals nearby and far away.

***Follow-up Activities:*****Students choose to:**

- prepare a presentation to the school's administration on ways to improve the school's reuse practices
- prepare a presentation to their household on ways to improve their home's reuse practices
- write a letter in preparation for the above presentation
- write a letter to a local newspaper about the class's audit findings and suggest ways individuals can improve their reuse practices at home

## Teacher Reference:

	How does reusing this item...		
Reused Item	...benefit the natural environment?	...benefit society?	...help the economy?
Paper (reuse blank, unprinted side)	<ul style="list-style-type: none"> <li>- saves forests</li> <li>- reduces water used in pulping process</li> <li>- reduces transportation and processing resources used to recycle paper</li> <li>- reduces landfill waste</li> <li>- reduces pollution produced by pulp processing (eg. dioxins in bleaching of paper)</li> </ul>	<ul style="list-style-type: none"> <li>- opportunity for creative, personalized reuse of paper</li> <li>-avoiding water and air pollution saves money and suffering related to human illnesses</li> <li>-preserving forests maintains natural spaces for human recreation and maintains species diversity</li> </ul>	<ul style="list-style-type: none"> <li>- saves purchasing costs</li> <li>- reduces disposal and recycling costs</li> </ul>
Glass drink bottles (reused or replaced with safe reusable drink container, e.g. stainless steel bottle or thermos)	<ul style="list-style-type: none"> <li>- saves electricity used to manufacture glass</li> <li>- reduces pollution produced in manufacturing glass</li> </ul>	<ul style="list-style-type: none"> <li>- safe water storage container; alternative to bisphenol-A plastic containers</li> <li>- promotes increased water consumption</li> <li>-valuing and using tap water makes it more likely that the tap water quality will be maintained in the longer term. This is good for everyone, especially those who cannot afford to buy bottled water.</li> </ul>	<ul style="list-style-type: none"> <li>- saves purchasing costs</li> <li>- diminishes disposal and recycling costs</li> <li>-purchasing bottled drinks promotes the private/corporate ownership of water instead of promoting the shared ownership of water (by the 'public'/government)</li> </ul>
Plastic bags (replaced with reusable cloth bags)	<ul style="list-style-type: none"> <li>- saves oil, water and chemical resources used to manufacture plastic (mining/procuring these resources have social, environmental and economic consequences)</li> <li>- reduces pollution produced in manufacturing processes</li> <li>- reduces threat of plastic leachate (in landfills) contaminating water tables</li> <li>- reduces landfill waste</li> <li>-reduces water and electricity that would be needed to recycle plastic</li> </ul>	<ul style="list-style-type: none"> <li>- reduces air-borne plastic bags from littering common spaces. This makes public spaces look nicer.</li> <li>- reduces the threat of drain sewer clogging. This reduces the risk of flooding streets (traffic jams) and homes (damage to homes and possessions)</li> <li>- reduces suffocation hazards for children</li> <li>- opportunity for individuals to produce creative, personalized, reusable bags (fun, relaxing!)</li> </ul>	<ul style="list-style-type: none"> <li>- reduces landfill costs</li> <li>- reduces bagging costs for some businesses</li> <li>-good marketing opportunity for some businesses as the logo on the bags is 'reused' and seen more frequently</li> <li>-creates new business opportunities in manufacture and sale of reusable bags</li> </ul> <p>(potentially threatens plastics industry)</p>



# 💡 Student Information Sheet 💡

## School Reuse/Waste (?) Audit

Have you ever noticed that you throw away the same things every day? Plastic forks, disposable cups, plastic bags, and boxes. Maybe some of it should be destined for the garbage or recycling bin, but perhaps some of it shouldn't. Take a closer look: Do your garbage and recycling bins have items that could be reused or replaced with something reusable?

Pick a place in your school to investigate. Check out what items are filling the garbage cans and recycling bins in your school. List the items in the following table and complete the chart.

Place I will investigate:			Time of day I will investigate:		
	Where did you find it?				
Item	Garbage bin	Recycling bin	Approximate number	Could the item itself have been reused? How?	Could the item be replaced by something else that is reusable? What?
Example Plastic bag	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			

## ACTIVITY B4: THINK GREEN

Time	Description	Materials
60 minutes	Students will use paper found in school recycling bins and at home to write answers to journal questions that will help them reflect in as the project continues	<input type="checkbox"/> Recycled paper

### Action

1. Students will collect paper that has been used on only one side from home and recycling bins around the school. You will likely find the jackpot by the school printers!
2. Students will watch the following video on plastic bags and use this recycled paper to write answers to the following questions.

#### [The Plastic Bag: A Mockumentary](#)

- Reflect on how you feel about plastic bags after you have watched the video
- Write the pros and cons about possibly banning plastic bags
- What can you do in your school or home to eliminate the use of plastic bags?
- How will you convince others to do this?
- Interview 5 people outside of the class about their view on plastic bags. Analyze this information and present it to the class.

### Other possible journal topics:

1. By using recycled paper, how are your actions affecting humans, plants and animals—Nearby? Far away? Now? In the future? ([Activity B2](#)) What are some reasons why people choose not to adopt reusable practices? What is your opinion about each reason? ([Activity B1](#))
2. What reusable practices do you think will have the greatest impacts? Explain.

Other journal topics are provided throughout the kit. Journal topics and questions are great to ask students how they feel about what they are learning; specifically, do they care?

## PART C: BAG-MAKING DAY

Time	Description	Materials
30 - 40 minutes	in small teams, students will take turns trying to answer trivia questions to learn about and share what they already know about the 3 R's and the issue of plastic bags	<input type="checkbox"/> Questions (see below) <input type="checkbox"/> Sample items to support questions <input type="checkbox"/> Students' green journals <input type="checkbox"/> 1 pencil per group

### To-do list for teachers (before bag-making day)

1. Ensure each student has durable fabric from used, unwanted clothing (e.g. an old pair of jeans) to complete the project. In case some students do not have access to old clothing, consider asking colleagues to bring in old jeans or consider purchasing some old clothes from a thrift store.
2. Divide students into teams (ideally three students per team). If volunteers have been recruited, contact them to make sure they know when to arrive, etc.

## ACTIVITY C1: REUSE TRIVIA

### *Instructions:*

1. Ask students trivia questions listed below. Rotate asking questions from the four question categories, i.e. Reuse, Reduce, Recycle, Waste.
2. For questions on reusing:
  - a. If the question has a corresponding item to be shown as an example, hold up the object. Give groups 30 seconds to think of as many ways they can use/reuse the item mentioned/shown.
  - b. One student should be the scribe for the group and should record the group's ideas in their Green Journal on recycled paper.
  - c. At the end of 30 seconds, groups must submit their answers. Any group caught writing after the 30 seconds is done, the last 2 answers on their list will be disregarded. Encourage students to be creative but practical with their ideas.
  - d. One student from each group must come to the front of the class and read their answers to the class. Award each reasonable answer one point. After all teams have shared their ideas, read the list of "Popular Answers." Ask students to vote for the 'best' reuse answer. Discuss with students how to decide which answer is the best (for example, choose the answer that is most likely to be adopted by people in their everyday lives). The team that thought of the "best" answer gets an extra 2 points.



Reuse Trivia		
<p>1. List ways to reuse a piece of paper (one side used).</p> <ul style="list-style-type: none"> <li>• Class notes on the reverse side</li> <li>• Scrap paper for messages at home</li> <li>• Paper airplane/Origami</li> <li>• To build a vermicomposter</li> <li>• Filler for pet cages (bird or hamster)</li> <li>• Printing in computer printer</li> </ul>	<p>3. List ways to reuse a shoebox (especially if it is decorated and personalized).</p> <ul style="list-style-type: none"> <li>• As a storage box for school supplies or collector's items</li> <li>• As a memory box (birthday cards, pictures, etc.)</li> <li>• As a gift box for birthdays and other occasions</li> <li>• As a footstool under your desk</li> </ul>	<p>5. List ways to reuse an old pair of jeans.</p> <ul style="list-style-type: none"> <li>• Cut them into shorts</li> <li>• Pass them on to a sibling</li> <li>• Sell them in a garage sale</li> <li>• Donate them to a local charity</li> <li>• Use the fabric to make a reusable bag!</li> </ul>
<p>2. List ways to reuse a washed sandwich bag.</p> <ul style="list-style-type: none"> <li>• Wash and reuse for more sandwiches</li> <li>• Store loose items (i.e. paperclips, screws, nails, etc.)</li> <li>• Store cut fruits and vegetables</li> <li>• Use to marinate food</li> <li>• Transport goldfish</li> <li>• Hold toiletries for travelling</li> </ul>	<p>4. List ways to reuse a plastic shopping bag.</p> <ul style="list-style-type: none"> <li>• Line garbage bins</li> <li>• Line compost bins</li> <li>• Pet waste disposal</li> <li>• Lunch bag</li> <li>• Reuse for more groceries</li> <li>• Protection from rain if you forget your umbrella</li> <li>• To cover food dishes in the fridge instead of using plastic wrap</li> </ul>	<p>6. List reasons why some people think reusing is a good idea.</p> <ul style="list-style-type: none"> <li>• Reduces the rate and amount we purchase new products</li> <li>• Decreases stress on the environment to produce new products</li> <li>• Reduces the amount of waste produced</li> <li>• Helps us share with others</li> <li>• Saves money</li> </ul>
Reduce Trivia		
<p>1. List ways to reduce water consumption in your home.</p> <ul style="list-style-type: none"> <li>• turn off the tap when you brush your teeth</li> <li>• take shorter showers (bring an oven timer into the bathroom)</li> <li>• use low-flow shower heads</li> <li>• adjust your toilet to the setting that uses the least amount of water</li> <li>• use eco-certified car wash services</li> <li>• choose drought resistant plants for the garden</li> <li>• get a rain barrel</li> </ul>	<p>2. List ways to reduce electricity consumption in your home:</p> <ul style="list-style-type: none"> <li>• turn off lights when not in use</li> <li>• turn off appliances when not in use</li> <li>• keep air conditioning on low; close windows &amp; doors when on</li> <li>• wear warmer clothes rather than keeping the heater on too high</li> <li>• put chargers, printers, computers, televisions, etc. on power bars so they can be completely turned off when not in use</li> </ul>	

Recycle Trivia	
1. What percentage of plastic bags are recycled each year in Canada? a) <b>9%</b> b) 26% c) 36% d) 66%	3. Recycling one aluminum can is the equivalent of saving enough electricity to run a TV for how many hours? a) 1 b) 2 c) <b>3</b> d) 4
2. What do you think recycled newsprint is used for? (Old newsprint paper is recycled into new newsprint paper and into packaging products)	4. What percent of solid waste in Canada is disposed of in landfills (instead of recycling)? <b>80%</b>
Energy and Waste Trivia	
1. What is a non-renewable resource? Give one example. • Coal • Oil • Natural gas	4. How many years does it take for a plastic bag to biodegrade? a) the same time it takes for my apple to biodegrade b) 4 months c) 4 years d) 400 years e) <b>1000+ years</b>
2. How many plastic bags do Canadians throw in the garbage each year? a) 55 million b) 500 million c) <b>10 billion</b> d) 100 billion	5. How much waste does the average person in North America create each year?  (Closest guess to 1000 kg wins.)
3. Why do some people care about how much waste we create? (See introduction on page for suggested responses).	6. How long does it take for a glass bottle to break down in a landfill?  (The closest guess to 1 million years wins)

## ACTIVITY C2: THE BAG ISSUE

Time	Description	Materials
45 - 60 minutes	Students examine various images with plastic bags, and then be led through discussions on the issue of plastic bags	<input type="checkbox"/> Printed images on recycled paper, if possible, print in colour and laminate to reuse.

We suggest doing this activity outside. For information about the ‘how and why’ of teaching outdoors (even when you don’t need to), please visit our [R4R](#) page [Learning Locally - Community as Classroom](#)

### **Instructions:**

1. Explain to students that images will be passed around—all with plastic bags in them. Briefly show the images to the class.
2. List the following questions on the board for students to answer orally in groups, and then distribute 1-2 images to each small group.
  - a) What does the image show?
  - b) How are plastic bags being used in this image?
  - c) How are animals and other wildlife being affected?
  - d) How are people being affected?
  - e) How are the natural places where humans and other animals live being affected?
  - f) How is money related to what is happening in the photo?
  - g) What questions do you have about this image?
  - h) What would you say to someone who said, “It doesn’t matter whether we stop using plastic bags or not”?
3. Have groups pair up and share their responses to the questions with each other.
4. After the group presentations, lead students in a discussion on the use of plastic bags locally. Local issues to discuss with students:
  - Are plastic bags recyclable in our community?
  - Have you seen plastic bag recycling bins in your grocery store? (Refer to image)
  - Have you heard of any local or global initiatives to reduce the number of plastic bags we use?





## ACTIVITY C3: MAKE-A-BAG, LAPTOP SLEEVE, LUNCH BAG, OR PHONE CASE

Time	Description	Materials
90 - 120 minutes	Students will use old clothes or other fabric (e.g. curtains) to create a reusable bag, laptop sleeve or more. Fabric should be durable enough to potentially bear the weight of a bag of groceries	<ul style="list-style-type: none"> <li><input type="checkbox"/> old jeans or clothes with durable, thick fabric (adult jeans are easier to work with)</li> <li><input type="checkbox"/> Good scissors (one per pair of students)</li> <li><input type="checkbox"/> Markers</li> <li><input type="checkbox"/> Good quality fabric glue</li> <li><input type="checkbox"/> Rulers/measuring tape (one per student)</li> <li><input type="checkbox"/> optional: items for decorating bags (fabric paint, buttons, beads, etc.)</li> </ul>

This activity does not have to be just for a reusable “bag” such as a grocery bag; encourage creativity and flexibility with this activity so the students can have fun! Students have lots to carry around all day. Students can come up with their own “bag” that they would like to make. For example, a laptop/tablet sleeve, lunch bag, phone carrier, etc.

Ask for student volunteer reader(s) to read the instructions below out loud as you proceed through the steps. Most of the items students choose to make will follow similar guidelines to the bag. (Please also see the alternative method described at the end of these directions.) The only thing that will change will be the size of the bag.

**STEP 1:** Lay out your fabric in front of you and determine the best way to cut out your bag. You will need to plan for two pieces, one for the front and the other for the backside of the bag. If possible, each piece should be rectangular in shape, ideally 15” (38cm) by 14” (35 cm) (this includes 1” margins for gluing). Use your ruler or tape measure to help you determine the size of your bag. If using old pants, you may need to cut open the length of the leg to get pieces that are wide enough.

**STEP 2:** Outline your plan onto your fabric using a marker.

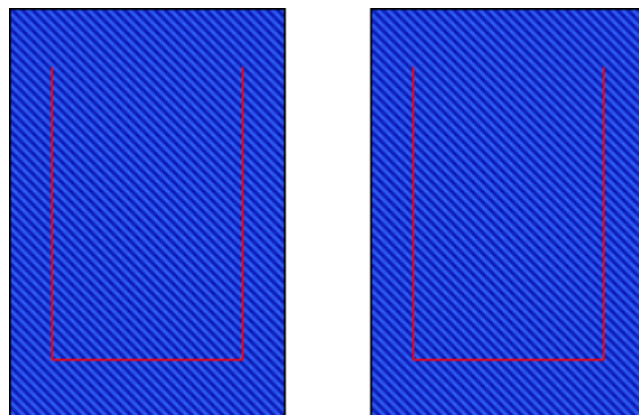


**STEP 3:** Cut out the outline you drew in step 2. Lay out the two pieces you will be using for your bag and put excess material off to the side to clear space on the table.

**STEP 4:** Decide which side of each piece of fabric you want to be the inside and outside of your bag. Also, decide which edge will be the opening/mouth of your bag.

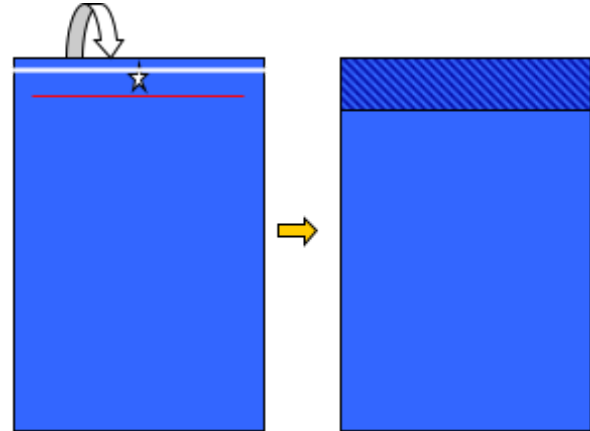
**STEP 5:** Draw a star on the inside edge of the opening so you don't forget which one it is. Then, still, on the **inside** of your bag, draw a line to show a distance of 1" from the outer edge of the fabric along the opening of the bag.

**STEP 6:** Similar to step 5, draw lines 1" away from the edge on the other edges of the bag, but this time draw them on the **outside** of the bag.



**STEP 7:** Using the fabric glue, carefully follow along the inside edge of the bag opening only.

**STEP 8:** Carefully fold the opening edge in toward the 1" markers you've made along that side (you are 'hemming' the edge so it will look nice and not fray). Gently press down so the edge sticks to the rest of the fabric. Repeat steps 6 & 7 for the other piece of fabric.



**STEP 9:** Lay one piece of fabric in front of you with the outside facing up and the opening away from you.

**STEP 10:** Apply fabric glue along your marker lines (**THREE SIDES ONLY; NOT THE OPENING**), and carefully place the other piece of fabric on top with the outside of the second piece facing the outside of the first. Gently press down so the pieces stick together. Write your initials on the bottom right corner of your bag and put it aside to dry.

The Handles( IF NEEDED):

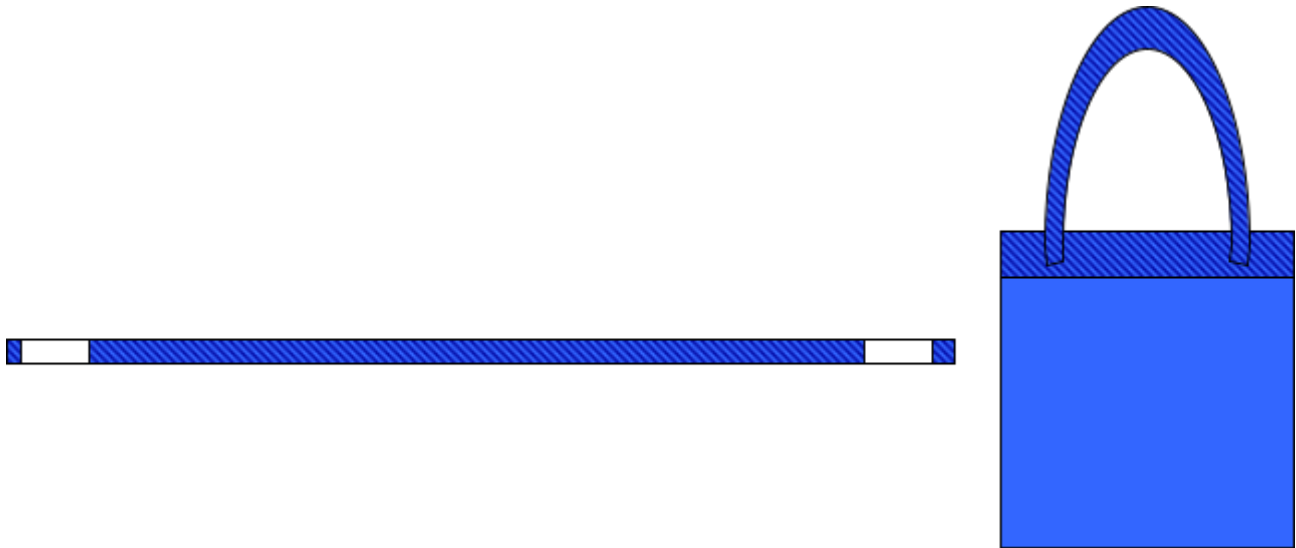
**STEP 11:** Bring back the scrap fabric from your first cut and using a marker, outline 2 rectangular strips of fabric, 4" wide and 22" long (this is ideal, smaller is okay).

**STEP 12:** Cut out the strips that will be used for the handles and remove any remaining scraps of fabric to make space on the table.



**STEP 13:** Line the inside of one edge along the length of the strip with fabric glue and fold the strip in half, gluing the sides together. Repeat with the other strip.





**STEP 14:** Finally, glue the bottom and top edges of the strip to the inside of the opening of one side of the bag. Repeat on the other side with the other strip.

**NOTE:** Advise students that after 24 hours, once the glue has dried, they should turn their bags inside out (from the current arrangement) so that their outsides are actually on the outside!

**24 HOURS LATER:**

Turn the bag right-side-out and decorate the bag. If available, use fabric paint, buttons, beads, etc. Tell students that they can iron their bags so they lay flatter at the seams, and if they have sewing machines, they can reinforce the seams at home. If students finish quickly and time permits, allow them to make another bag.

Alternative Design:

Students could make one long continuous strip for the handle that they glue around the entire bag for extra strength. To do this, the students would need to glue the strip to one side of the bag (all the way around) before gluing the sides together.

## ACTIVITY C4: How Did We Do?

Time	Description	Materials
90 - 120 minutes	Students will calculate how many bags they have made as a class and reflect on the impact they've made on the environment.	<input type="checkbox"/> Scrap paper for calculations

Instructions:

1. Have each group count the number of bags they've made.
2. Ask students if they intend to use their bags instead of plastic bags for groceries or other use scenarios. Have students guess how many plastic bags they could avoid using this year if they chose to use their fabric bag. Calculate the approximate number of plastic bags diverted from circulation based on the projected use of their reusable bags, e.g. 1 reusable bag = 100 plastic bags or 100 paper bags.
3. Use the number calculated in 2) and the information in the following chart to calculate the resources students' reusable bags have saved.

	Paper Bags	Plastic Bags
Waste diverted by weight	100 paper bags = 6.4 kg	100 plastic bags = 0.71 kg
Total energy saved for the product life cycle*	100 = 70,000 kJ	100 = 172,000 kJ
Total pollutants saved for the life cycle*	100 = 54 g	100 = 291 g

**\*For some students:**



Pollutants eliminated from raw materials not used and eliminated disposal	100 = 13 g (Mass units = grams)	100 = 145 g
Energy saved from materials manufacture, product manufacture and product use	100 = 48,000 kJ (Energy units = kilojoules)	100 = 95,500 kJ
Pollutants saved from materials manufacture, product manufacture and product use	100 = 41.5 g	100 = 146 g
Energy saved from raw materials not used and eliminated disposal	100 = 20,000 kJ	100 = 76,000 kJ

## ACTIVITY C5: REFLECTION

Time	Description	Materials
20 minutes	Students create a concept map about their reusable bag.	<input type="checkbox"/> Chart paper <input type="checkbox"/> Crayons, pencil crayons, etc.

1. Model the activity of a concept map if students are unfamiliar. For example, in the centre of the chart paper, draw a circle and write the word “recycle” in the middle. Ask students to come up with everything they know about the word recycle.
  - a) Students will work in groups of three and create a concept map. The teacher will give the following words or phrases out to different groups: Reusable bags, Ban plastic bags, How do plastic bags hurt animals? How can students promote reusable bags?
  - b) Students write the word or phrase in the middle of the chart paper and then brainstorm to find solutions or information on the topic.
  - c) Have the students post their maps around the room and invite everyone to look at everyone else's. Students should be given the option to choose not to post their maps.
  - d) Discuss.

## PART D: FOLLOW-UP ACTIVITIES

*We strongly recommend that students who create the bags have an opportunity to do the activities in Part C.*

### ACTIVITY D1: REFLECTION JOURNALS

Instructions: Allow students to select one or two of the following topics to write about in their journal. After writing, encourage students to share their written reflections with others (optional).

1. What facts from the trivia game did you find most surprising? Why? ([Activity C1](#))
2. What reasons do you think people will find most convincing for switching from plastic bags to reusable bags: environmental, economic or social reasons? Why?
3. Do you think many people will switch from plastic to reusable bags? Why or why not?

Do you think that you will start to use reusable bags more often? Why or why not? (For important information about allowing students the opportunity to clarify their own values, visit [Teacher's Toolbox](#) and look for the '[Considering Alternative Perspectives](#)'.)

### ACTIVITY D2: PLASTIC BAG LOG

**Instructions:**

Ask students to keep a log for two weeks of all of the opportunities they have to:

- a) receive a new plastic bag (e.g. when purchasing something) and
- b) reuse a bag.

For each opportunity, ask students to comment on whether or not they accepted the new bag/reused the bag and why they made that choice.

# PART E: OTHER OPPORTUNITIES FOR PROMOTING REUSE

## ACTIVITY E1: CLOTHING SWAP

Time	Description	Materials
45 - 120 minutes	Students will coordinate and host a swap event encouraging reuse in the community. Students may be responsible for hosting different sections of the swap.	<input type="checkbox"/> Tables (1 for every 2 swap sections) <input type="checkbox"/> Items to swap (to be brought in by all participants)

Plan a Swap Event!

(Activity inspired by Yumpu's ["101 Things To Do With All Your Old Stuff Guide - Metro Vancouver"](#))

### Pick one or more target groups

- As a class, students should decide what the focus of their swap will be: i.e. target group of participants? And items to swap?
- E.g. clothing swap for students, clothing swap for parents, sports equipment swap for parents and children, music swap for students, toys for kids, video games for kids, book swap for kids and adults
- Decide if the swap will be held in the school for students or held for community members too

### Pick a date and time

- Make sure the date and time allows the maximum number of target participants to attend
- Make sure the date doesn't conflict with a holiday or special event. If willing and possible, plan the swap on a weekend and work harder to promote the sale beyond the school and in the community.

**Promotion**

- Advertise in the school and community through announcements, posters, and newsletters to parents.
- In your ad, include the date, time, address, and focus of your swap
- Signage:
  - main information to include: date, time and address
  - place signs in areas where your target group gathers
  - to reach people in vehicles signs should be large and easy to read
  - use bright colours and large, clear print
  - use recycled or used items for signs
- Students should personally invite other classes, school staff, friends, family and neighbours to see if they are interested in participating in the swap. Students should be prepared to explain what a swap is, and how it will work
- Invite people you know by email

**Make it social and welcoming**

- Consider having a BBQ afterward
- Have another class arrange a lemonade stand, or sell (fairly traded, organic) coffee and doughnuts to encourage people to stay longer and socialize
- Display reuse items the class has made, including the reusable bags
  - o Try raffling off reusable bags students have made so participants can take home items in cloth bags
  - o If the class doesn't think they will have enough reusable bags to give away have boxes available for participants to tote their swapped items

**Decide other details**

- Decide if you will charge participants a small amount to participate (this may help offset the costs of offering refreshments), e.g. Loonie or Toonie entrance fee
- Have tables clearly marked with the type of items offered, e.g. signs on recycled paper taped to tables saying "Children's Clothing", "Adult Novels", "Nintendo Video Games"
- Ensure that all of the elements of the swap are consistent with your goal (eg. if you are trying to reduce the waste by sharing used items, will you offer disposable coffee cups at your snack booth?)
- Decide what to do with items that aren't taken:
  - Donate it to a charity?
  - Invite participants to take it back home?



**It's swap day!**

- Expect early birds, so clear all paths and set up tables with signs about a half hour before the advertised start time
- Display goods in an organized and attractive way on tables, boxes, or even the lawn. Group similar items together.
- Offer reusable bags to hold purchases! You might even want to sell the ones you make as a class!
- Provide old boxes for shoppers to take their purchases home – avoid bringing or encouraging the use of plastic bags to hold shopping.
- If the class is charging an entrance fee, have one person to handle the cash at one entrance
- Have a great day — relax and remember your sense of humour.

**Clean up time**

- After the swap is over, remove all your signs from around the school, and community
- Donate leftover items to charity!
- Consider donating some or all proceeds from any entrance fees to a charitable organization of your choice or use the money to help fund an environmental initiative at your school (i.e. buying compost bins for the cafeteria and/or classrooms so students have a better way to dispose of organic waste!)

## ACTIVITY E2: REUSE, REUSE, REUSE!!

Time	Description	Materials
Two - three 60-minute periods	Students collect items to bring to class that would have otherwise been destined for the trash or recycling bin. Students will then design or modify the item so that it has a new or renewed utility. Items may be personalized for themselves or others as gifts.	<input type="checkbox"/> Various old boxes, plastic jugs, etc. <input type="checkbox"/> Old magazines and newspapers <input type="checkbox"/> Glue <input type="checkbox"/> Markers, crayons, etc. for decoration <input type="checkbox"/> Samples of already finished reused items

### Instructions:

#### Day 1:

1. Explain to students that some of the most effective reuse practices are fun and creative—and they can make people happy because we can personalize our reuse items. This reuse activity will give students a chance to make something for themselves or a friend.
2. Describe and/or display some of the following items made from reused items:
  - a) Trivets/hot mats/coasters: made from decorated tiles or pieces of wood (found on your next nature walk)
  - b) Bird baths: cut-out, decorated plastic jugs
  - c) Nesting materials: mesh bag from vegetable produce stuffed with nesting materials, e.g. dried grass, string, hair, old stuffing from pillows, etc. to hang from a tree
  - d) Personalized boxes for various items: cardboard or metal tins decorated to suit recipients. Possible uses:
    - i. Small metal tins or plastic boxes (like the ones that mints and candy come in) lined with reused fabric or stuffing to hold and protect MP3 players, coins, etc
    - ii. "Homes" for stuffed animal friends like "Beanie Babies"
    - iii. First aid kits
    - iv. Gift boxes
    - v. Desktop organizers like upright file holders made from cereal boxes

- e) Knitted items made from plastic bags (students should know how to knit before they choose this activity). (Having the “yarn” made from strips of plastic will have to be prepared beforehand.)
- 3. Explain to students that these are just examples and that they may create their own personalized reuse items according to the materials they find or needs they want to fill. Note to students that they should decide on a need they want to fill; items made should have a clear purpose.
- 4. Give students time to think about what they want to make. Students should draw and label a diagram of the item they plan to make in their journals. Teachers should approve the item and see if some students have similar items and might be able to collaborate.
- 5. Students collect items they need for their projects from home and other places.

**Day 2:**

- 6. Give students time to make their items. Students may collaborate to make a single item.

**Follow-up:**

- 7. After students have completed their reuse items, ask them to complete a lifecycle analysis of their new product in their journal by answering the following questions (write on board):
  - a) What materials did you start with?
  - b) What materials did you need to put together your new reuse item?
  - c) What resources will you require to transport your item?
  - d) What will happen to your item at the end of its new life?
- 8. How has your reuse item extended the life of items? How has your item:
  - i. saved energy?
  - ii. saved resources?
  - iii. eliminated pollutants?

## ACTIVITY E3: CAMPAIGN TO PROMOTE REUSE!

Time	Description	Materials
Three to five 60-minute periods.	Students select an audience to target with a tailored message promoting reusing	<input type="checkbox"/> a variety of materials depending on what promotional avenue students decide to take.

*For assistance with helping students plan an action project, please visit [Teacher's Toolbox](#) and look for [Acting on Learning](#).*

### Instructions:

1. In groups, ask students to:
  - a) discuss which reuse alternatives they themselves are most likely to adopt and why; and
  - b) for each reuse alternative, ask students to describe why they and/or other people may be reluctant to choose that particular 'reuse' alternative (what are the barriers?)
2. Ask students to suggest ways they might be able to convince other people to adopt reuse alternatives. For example:
  - create a presentation for the school's administration of the "Top 10 Ways The School Can Improve Its Reuse Practices"
  - write a letter to a local newspaper or real estate magazine asking readers to adopt reusable practices
  - create a radio or TV commercial to convince local community members to adopt reusable practices [storyboarding worksheet available for TV commercial]
3. Have students select one strategy to promote one reuse alternative and implement the strategy to convince a target audience to adopt this reuse alternative.

4. Regardless of the form chosen for the promotion of reusable practices campaign, all campaigns should feature the following (rubric items) (see Campaign Planning Questions):
  - description of how much waste is being produced with current consumption and disposal habits, e.g. # of plastic bags found in the lunchroom
  - description of how this waste item is affecting the community, the environment, and the money it is costing, e.g. making areas dirty or unsafe, costing money to buy disposable items, costing money to recycle and dispose of in landfills
  - description of the alternative reuse practice, e.g. switch to reusable item
  - description of how the reuse practice will help save money, and benefit the community and the environment, e.g. don't have to spend as much time and money shopping, reused items can be decorated and personalized, less garbage
  - features that will make the campaign appealing to one specific target audience, e.g. school principal, parents, homeowners, other students



# APPENDIX A: BACKGROUND INFORMATION

## Reuse and the Waste Reduction Hierarchy

Source Reduction & Reuse is at the top of the solid waste reduction hierarchy. Under source reduction, recycling/composting means extending the useful life of products by finding new ways to use otherwise obsolete or superfluous items and organic materials. Energy recovery is the act of converting non-recyclable waste materials into usable energy such as heat, electricity or fuel. The bottom section of the hierarchy is Treatment and Disposal, where treating can mean reducing the volume or toxicity of waste; when disposing of waste, the item will more often than not end up in a landfill.



As presented in this action project, there are many ways to creatively reuse and find another purpose for many common household items. The internet is a great source for more ideas on how to reuse materials. Below are a few sites we found useful:

- [Cool Upcycling Projects](#)
- [A comprehensive A to Z list of easy upcycling ideas to inspire.](#)
- [Reusing Everyday Materials](#)
- [Useful and Easy Upcycling Ideas](#)

When you have no use for an item anymore, another means for reuse is to give it to someone who can make use of it; one person's trash is another person's treasure. finding a way to reuse and donate unwanted items positively contributes to our communities in a number of ways. A couple of the many benefits that donating unwanted items reduces preventable goods from going into the landfills and helps those in need

In terms of environmental benefits, reuse allows more people to enjoy the same products without demanding the energy and natural resources to manufacture new ones. This also prevents various forms of land, water and air pollution, including greenhouse gases, often associated with the manufacturing process.

Reuse is also beneficial to the community as it allows financially poor people to access materials they want or need. Items such as furniture, toys, books, clothing, appliances, and cars can often be transferred to others through yard sales (personal or community-wide), thrift stores, charitable donations, used equipment stores, and food drives. This project presents the post-activity option of hosting a schoolyard 'swap,' giving students, teachers, and parents an opportunity to swap valuables while picking up their children from school.

## How Plastic Bags are Made

Plastic bags start as Polyethylene (derived from refined oil or natural gas), which are transformed into chains of hydrogen and carbon molecules known as polymers or polymer resin through superheating or pressurizing the oil or gas. After being heated, shaped, and cooled, the plastic is ready to be flattened, sealed, punched, or printed on.

## The Issue of Plastic Bags

[Approximately 300 million tons of plastic are produced each year globally, with 50% being single-use plastic.](#) Despite having highly developed waste systems, wealthy countries tend to account for the most plastic waste per capita. [The top plastic-consuming country is the United States, consuming 130kg of plastic per person annually;](#) meanwhile, Canada does not fall too far behind with an [annual average of 125 kg per person.](#)

Most plastics contain polyethylene terephthalate, a common recyclable substance that is highly versatile. However, worldwide, only about 10-13% of single-use plastics are recycled, and the rest end up in landfills or can break down into small particles and find their way into our food and water supply!

[These small fragments, called microplastics, are often eaten by wildlife and accumulate in their stomachs and poison them.](#) The microplastics can accumulate in animals and be passed up through the food chain, and eventually enter what we eat. Sadly, between 4.8 million and 12.7 million metric tons of plastic make their way into the oceans every year, [most of the pollution coming from developing countries in Asia that lack proper waste management systems.](#) but we mustn't forget that much of the plastic made in Asia is made for the West. Canada has been known to send our unsorted waste to Asian countries to dispose of it.

In addition to ocean pollution, plastics have a direct impact on climate change. [The production of plastics requires the use of oil, gas, and coal and accounts for 4-8% of the global annual oil consumption.](#) Projections from the World Energy Council indicated that if the production of plastics continues at the expected rate, [greenhouse gas emissions will increase to 49 million metric tons by 2030.](#)

Many townships, cities, provinces, and nations are responding to this issue and are taking steps to reduce, if not eliminate, single-use plastics, including plastic bags, used by citizens. In 2007, Leaf Rapids, a town in northern Manitoba, [became the first community in Canada to officially ban single-use plastic bags.](#) Other regions in Canada have followed a similar path, including Nova Scotia [banning single-use plastic bags across all businesses in 2020,](#) Newfoundland following suit, Saint John, and many more regions continued to pass similar laws. [Canada will also take action to reduce plastic consumption, with the goal of zero plastic waste by 2030.](#) and a ban on the import and manufacturing of all single-use plastics by December 2022! As Canada moves forward, so does the world. In talks with the UN Environment Assembly in 2019, 170 countries pledged to significantly reduce their use of plastic by 2030.<sup>3</sup>

## Why Make a Reusable Bag?

By making a reusable bag, you are not only reducing the number of plastic bags needed to carry your goods but also finding a creative way to reuse material from old, unwanted clothes. While many grocery stores sell their own durable, reusable bags made out of recycled materials, making your own bag is a cost-effective, hands-on way to contribute to reduced use of plastic bags in your community.

## What Else Can You Do?

In the case of lining your trash or bagging pet waste, try using biodegradable bags that can be found at your local grocery store.

## APPENDIX B: ASSESSMENT OPPORTUNITIES

Throughout this action toolkit, there are many assessment opportunities available. We recommend going beyond the rubric and journal entry to include options for students to showcase their abilities in ways that benefit their strengths. Below, we have included some assessment ideas that can be used before, during and after the learning! To find out more active learning strategies, check out the [Active Learning Strategy Bank](#), a part of our [Climate Learning resource](#).

### 1) Graffiti wall

- The students are school artists and are invited to explain to the school community what they think they know prior to and what they have learned in the lesson. Offer a space for students to add words or draw up on the wall.
- A graffiti wall is a tool where you can share ideas and opinions about topics discussed in class.

### 2) Choice board

- Choice boards are graphic organizers that offer a chance for students to differentiate their learning by having the students choose what assessment they would like to complete. A choice board is composed of different squares, with each square being a different option of activity. Students choose one or more of these activities to complete. They can progress from one activity to another in whichever way it works for them.
- For more information on choice boards, [check out this website](#)
- Example of a choice board:

Create a Bumper Sticker	Oral Story about how the "fish/plant/animal" feel being in nature	Make an Announcement
Draw a Picture	<b>FREE CHOICE</b>	Create a dance or yoga session
Make Music (any materials)	Sing a Song	Use Recycled Materials to Make a Model

**3) Exit Tickets**

- At the end of class, have the students explain how their thinking has changed (with a personal example) as a result of the inquiry during the lesson. This can be done through writing or drawing!
- Checking out this document detailing the [I used to think... Now I think model](#) for exit tickets.

**4) Change the School!**

- This is a fun challenge that can be done often at the end of the inquiry to have the students make a change in their own school! Students come together in partners or small groups and come up with a plan that will make the school “greener” by using ideas from this action toolkit. Have the students present their ideas to the principal/superintendent/custodians or any other stakeholders.

**5) 3-2-1 Strategy**

- Have students summarize their learning by identifying 3 things they have learned, 2 things they would like to learn more about and 1 question they still have.
- [Check out this website for more information on the 3-2-1 strategy.](#)

**6) 30 Second - 1 Minute Sound Bite**

- The students work in partners or small groups to summarize a topic to their peers in 30 seconds
- [Check out this video detailing this activity!](#)

**7) Tableau**

- This drama activity is a great way to have the students engage in their inquiry in a different and unique way! Students create a still picture without talking with their bodies, which communicates the meaning of a concept that they learned in class. Teachers can effectively use Tableau to see newly gained knowledge from the inquiry.
- [For more information on Tableau, check out this website!](#)