

KEY LESSONS:

1. What is food waste?
2. Why is food waste a problem?
3. How can food waste be *good* for the earth?
4. Now what? Becoming a food waste activist in your local and “glocal” community!

WASTE WARRIORS

SORT IT OUT!

DESCRIPTION	Students sort, measure, and analyze their classroom waste generated over one day. Determine what their daily waste consists of, how much is produced and discuss the effects of different types of waste on the environment.
CURRICULUM CONNECTIONS	<i>Language</i> <i>Science</i> <i>Arts</i>
GRADES	Elementary – may be adapted for Secondary
SUPPLIES	<input type="checkbox"/> Medium-sized bins + 1 (or the FoodCycler bucket if large enough) or chart papers <input type="checkbox"/> Markers, pencils, sticky notes, etc. <input type="checkbox"/> Tape <input type="checkbox"/> Scissors
INSTRUCTIONS	<ol style="list-style-type: none"> 1. Begin by discussing which environmental problems are associated with each type of waste. Ask students to reflect on what happens to waste after it leaves our homes and why is food waste such a huge problem? (Methane gas, leachate, CO2 from transportation & regular pickup, etc.) 2. Split the classroom into small groups and give each group a medium-sized bin. Draw a line down the center of each bin: write <i>Problems</i> on one side, and <i>Opportunities</i> on the other. Or do the activity collectively as a class. 3. Students write, decorate and paste what they’ve discussed on the <i>Problems</i> side of the bin. 4. At the end of the day, look through the classroom waste receptacles. Looking at the different materials, have the students brainstorm on

how they can mitigate food waste and add their ideas of *Opportunities* to the designated half of each bin.

5. **Optional:** Use some of the ideas from the Opportunities section and apply it to future projects.

Alternatively, draw two bins on chart paper and label the first bin *Opportunities* and the second bin *Problems*. Ask students to write, decorate and paste what they've discussed on the Problems sides of the bin. At the end of the day, look through the classroom waste receptacles. Looking at the different materials, have the students brainstorm on how they can mitigate food waste and add their ideas to the *Opportunities* bin.

LUNCHBOX AUDIT (1): WASTE REDUCTION

DESCRIPTION	Determine how much food waste is generated by your class each day. Extrapolate to determine how much food waste your school generates every year. Discuss where food waste comes from and why it's bad for the environment.
CURRICULUM CONNECTIONS	<i>Math</i> <i>Science</i> <i>Language</i>
GRADES	Any
SUPPLIES	<input type="checkbox"/> FoodCycler <input type="checkbox"/> Weigh scales
INSTRUCTIONS	<ol style="list-style-type: none"> 1. First thing in the morning, weigh the FoodCycler bucket (empty) and note the weight of the empty bucket. 2. During lunchtime and breaks, have the students collect their food scraps in the FoodCycler bucket. 3. At the end of the day, weigh the bucket again and document the new weight (minus the weight of the empty bucket). How much food waste has one class generated over one day? How much per student? How much if you multiplied by the number of school days and number of students? 4. Discuss: What is food waste and where does it come from? Why is food waste a problem? What are some of the reasons that we waste food? 5. Run a cycle with your FoodCycler: Weigh the bucket (minus the weight of the empty bucket) and encourage students to do the math - how much was the class food waste reduced? 6. Collect and bin your foodilizer (the by-product generated by the FoodCycler) for later.

7. **Discuss:** What are the implications for the environment? For the school and staff? The community?

LUNCHBOX AUDIT (PART 2): AVOIDABLE & UNAVOIDABLE

DESCRIPTION	Determine the difference between avoidable and unavoidable food waste. Avoidable waste: Unavoidable waste:
CURRICULUM CONNECTIONS	<i>Language</i> <i>Science</i> <i>Math</i>
GRADES	Any
SUPPLIES	<input type="checkbox"/> Weigh scale <input type="checkbox"/> 2 buckets <input type="checkbox"/> FoodCycler
INSTRUCTIONS	<ol style="list-style-type: none"> 1. Ask students to collect their food scraps in two receptacles: in one, have the students add food that they consider edible (crusts, leftovers, etc.). In the other, have them add items that they consider not edible (banana peels, etc.). 2. At the end of the meal/day, weigh the buckets and document their weights. Add the contents of both buckets to the FoodCycler and run a cycle. Compare the remaining weight with that of the two buckets previous. 3. Collect and store your "foodilizer" (the by-product generated by the FoodCycler) for later. 4. Discuss: What's the difference between avoidable and unavoidable food waste? What are some ways that people can manage their avoidable waste? What are some ways that unavoidable food waste can be managed (compost, vermicompost, FoodCycler!)

ZERO WASTE CHALLENGE

DESCRIPTION	Determine how much total waste is generated per student and what would be required to be zero waste.
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CURRICULUM
CONNECTIONS

Language
Science
Math

GRADES

Any

SUPPLIES

- FoodCycler
- Reusable container for each student
- Weigh scale

INSTRUCTIONS

1. Challenge the students to go zero waste for an entire day! This means not throwing out any waste, including food. Have students bring their own reusable container and collect all waste generated throughout the day.
2. At the end of the day, have students “show and tell” their waste bags. Have them calculate 1 point for plastic waste, 2 points for food waste and 1 point for every other type of waste, such as paper waste. The person with the fewest points wins! (Students can keep their food-related points low if they add their food scraps to the FoodCycler).
*The prize could be a zero-waste lunch kit!
3. **Discuss** with the students their experience living a zero-waste lifestyle. Was it hard or was it easy? Why or why not? What would they need to do or change in their lives to live zero-waste?

COMPOST 101

GET YOUR HANDS DIRTY!

DESCRIPTION

Learn what compost is, how it works, and how it differs from food waste. Discuss different types of composting and food waste recycling and how it can benefit the environment.

CURRICULUM
CONNECTIONS

Science
Language
Arts

GRADES

Any

SUPPLIES

- FoodCycler
- Water-tight bins or buckets
- Garden soil or finished compost (from store)
- Shovels (if outdoors)

INSTRUCTIONS

for schools without outdoor space for a compost pile

1. **Discuss:** What is compost? How does it work? What are the benefits of compost for the soil and the environment?
2. Add 1-part foodilizer (the by-product generated by the FoodCycler and collected during another activity) to a minimum of 10 parts soil (20 parts soil if foodilizer contains meat or dairy products) in the bucket. Ensure that the two are thoroughly mixed and a solid layer of soil is present to cover the contents of the bucket. You can add more foodilizer over time.
3. Once you've finished adding foodilizer to the bucket, wait 4 weeks, and use the finished FoodCycler compost in your school garden or potted plants! (See *Green Thumb* exercise)

for schools with outdoor space for a compost pile

1. **Discuss:** What is compost? How does it work? What are the benefits of compost for the soil and the environment?
2. Designate an area on school property to be the compost pile.
3. Combine paper scraps (taken from the *Sort It Out Challenge* if possible), leaf litter, foodilizer (1:10 ratio if vegetarian, 1:20 if not) and a few shovelfuls of earth on the designated area and mix in thoroughly.
4. Every day, add more foodilizer and paper scraps/leaf litter as needed (always using recommended ratio). Your class should have finished compost within 4 weeks! Use the finished FoodCycler compost in your school garden or potted plants! (See *Green Thumb* exercises)

Disclaimer: Check with administrations prior to beginning this exercise to ensure that the composting process (if allowed) is following school board policies.

SOIL HEALTH, MY HEALTH

DESCRIPTION

Discuss the connection between soil health and human health. Understand how pesticides, herbicides, antibiotics, and other compounds in food can affect people and the environment.

CURRICULUM CONNECTIONS

Science
Language
Arts

GRADES

Any

SUPPLIES

- FoodCycler
- Plant pots
- Garden soil or finished compost (from store)
- Vegetable seeds or herb seeds

INSTRUCTIONS

1. Collect food scraps throughout the day or week, sorting them into "healthy & whole" foods (fruit and veggie scraps, simple grains,

eggshells, etc.), or “unhealthy & processed” (anything not “organic” and/or that was produced in a factory).

2. Process the two different types of food waste in the FoodCycler separately and label the finished foodilizer.
3. Prepare several small pots with soil. Add the “healthy & whole” foodilizer to half of the pots, and the “unhealthy & processed” foodilizer to the other half (mixing in thoroughly at a ratio of 1:10).
4. Plant one seed in every pot. Which group of plants does better over time, with the same amount of care (same watering, sun exposure, etc.)? Document your findings!
5. **Discuss** what pesticides, herbicides, preservatives and genetically modified organisms (GMO’s) are, where they come from, and why they are detrimental to the environment. Discuss how chemicals are used to make and grow a lot of our food and why. How can these chemicals be harmful for human and for soil health? Why is soil health important for human health?

GREEN THUMBS

WASTE TO TASTE!

DESCRIPTION	Learn about growing food, plant care, and the value of homegrown vegetables for human health.
CURRICULUM CONNECTIONS	<i>Science</i>
GRADES	Any
SUPPLIES	<input type="checkbox"/> FoodCycler <input type="checkbox"/> Plant pot for each student <input type="checkbox"/> Garden soil or finished compost (from store) <input type="checkbox"/> Variety of vegetable seeds
INSTRUCTIONS for schools without outdoor space for a garden	<ol style="list-style-type: none"> 1. Ensure that each student has their own plant pot. Students can also reuse their old food containers as a plant pot or make their own using old newspapers or other paper products. They can paint and decorate their pot to make it their own. 2. Using either finished compost (see <i>Compost 101 Challenges</i>) or garden soil amended with foodilizer (mixed in thoroughly at a ratio of 1:10), have students plant a variety of vegetable seeds such as tomatoes, lettuce, spinach, and green onions. Ensure the plants are sufficiently watered and receive enough sun.

3. Once the plants have grown, conduct a tasting party or make a salad for the whole class!
4. **Discuss:** Do students notice any difference between the quality of the homegrown, naturally fertilized food compared to store-bought produce that has been shipped long distances? What are the benefits of eating locally grown food (environmentally, for health, local community, etc.)?

for schools with an existing garden

1. Amend garden soil with foodilizer (mixed in thoroughly at a ratio of 1:10).
2. Plant a variety of vegetable seeds such as lettuce, spinach, tomato, green onions and sweet peppers. Ensure the plants are sufficiently watered and protected.
3. Once the plants have grown, conduct a tasting party or make a salad for the whole class!
4. **Discuss:** Do the students notice any difference between the quality of the homegrown, naturally fertilized food compared to store-bought produce that has been shipped long distances? What are the benefits of eating locally grown food (environmentally, health-wise, local community, etc.)?

ROOM TO BLOOM

DESCRIPTION

Using food waste and flowers as a metaphor, students prepare a designated sit spot to consider how events in their lives could be shifted from a negative to a positive if they simply change their perspective – similar to how food “waste” can help nourish a beautiful flower!

CURRICULUM CONNECTIONS

Science
Language
Arts

GRADES

Elementary

SUPPLIES

- FoodCycler
- Plant pots
- Garden soil or finished compost (from store)
- Flower seeds

INSTRUCTIONS

for schools without outdoor space for a sit spot

1. Have every student prepare a pot of soil. Students can decorate their pot to reflect their personality. Dedicate a spot in the classroom as their “garden”. This is where they will come to be with their plants in the future.
2. Offer students a selection of flower seeds – this flower is a representation of them, so have them consider what attributes best represent their personalities, their way of being in the world

(sunflowers are sunny, bright; chrysanthemums are dramatic but hardy, etc.). They need to care for the flower, ensure it is watered, fertilized and given enough exposure to the sun. Plant extra flowers to give to students in case their flowers did not blossom.

3. Prior to planting a seed, have students prepare a load of foodilizer: as a group, they need to ensure that every food item that goes into the FoodCycler bucket is healthy, whole, low in sodium, and high in nutrients – or else their flowers might not blossom!
4. Every week, students will sit together in their “garden” and **discuss**: What growth have they experienced that week? Any “cloudy days”? What is something they felt helped them “bloom” that week?
5. As their flowers grow, use this “garden” as a space to consider: what was something that happened that week that was considered a negative, and what could they do to make it a negative?
6. Talk about how “waste” is a perspective, and that, by adjusting our habits and our thoughts, we can turn something wasteful (or negative) into something wonderful! This is an ongoing activity which can help children be mindful of their habits and their way of being in the world.

for schools with outdoor space for a sit spot (access to planting)

1. Select an outdoor area as a sit spot – one where students can cultivate one flower each, either in the earth, an existing garden bed or a potted plant system.
2. Offer students a selection of flower seeds (suggest choosing flowers that are non-invasive, native and/or pollinator friendly). The flower is a representation of them, so have them consider what attributes best represent their personalities, their way of being in the world (sunflowers are sunny, bright; chrysanthemums are dramatic but hardy, etc.). They need to care for the flower, ensure it is watered, fertilized and given enough exposure to the sun. Plant extra flowers to give to students in case their flowers did not blossom.
3. Prior to planting a seed, have students prepare a load of foodilizer: as a group, they need to ensure that every food item that goes into the FoodCycler bucket is healthy, whole, low in sodium, and high in nutrients – or else their flowers might not blossom! Have the students incorporate the foodilizer into their chosen plot.
4. Every week, students will sit together in their “garden” and **discuss**: What growth have they experienced that week? Any “cloudy days”? What is something they felt helped them “bloom” that week?
5. As their flowers grow, use this garden area as a space to consider: what was something that happened that week that was considered a negative, and what could they do to make it a positive?
6. Talk about how “waste” is a perspective, and that by adjusting our habits and our thoughts, we can turn something wasteful (or negative) into something wonderful! This is an ongoing activity which can help children be mindful of their habits and their way of being in the world.

FILL TRIP VS FIELD TRIP

DESCRIPTION & AIMS	Understand different types of waste management available in urban, rural and Northern areas in Canada.
CURRICULUM CONNECTIONS	<i>Civics & Citizenship</i> <i>Social Sciences & Humanities</i> <i>Geography</i>
GRADES	Any
SUPPLIES	n/a
INSTRUCTIONS	<p><u>Part 1: Research & Understanding different types of waste management facilities in Canada</u></p> <ol style="list-style-type: none"> 1. Ask students to research and compare different types of waste management facilities (such as landfills, materials recovery facility (MRFs), compost facilities, recycling facilities, community programs, etc.) available within their region. What are the pros and cons of each? Encourage students to take into consideration the social, economic and environmental factors. 2. Ask students to research and compare different types of waste management facilities (such as landfills, materials recovery facility (MRFs), compost facilities, recycling facilities, community programs, etc.) available outside of their local area. Compare the availability of waste management facilities in urban areas, Northern areas, and rural areas. How are they different? What are the pros and cons of each? Encourage students to take into consideration the social, economic and environmental factors. 3. Discuss how one of the most pressing problems in modern landfills is food waste, and why. <p><u>Part 2: Experiential learning</u></p> <ol style="list-style-type: none"> 1. To complement this activity, organize a two-part field trip. The first part will be to visit the nearest landfill. Have students pay close attention to what they see, smell and sense. What are some first impressions? 2. The second part of the trip will take place at a community garden (preferably one with a compost system), a compost facility if available locally or some other integrated food waste recycling stream. Have the students gift their class-made foodilizer to a local garden or compost stream! 3. Discuss: What differences do the students notice? How is “waste” treated differently here than at the landfill?



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Alternatively, contact local waste facilities (such as landfills, MRFs, compost facilities etc.) and community gardens to see if virtual field trips are possible.