

GRADE 3 LEARNING EXPERIENCE

Compost Creators

Summary

This lesson goes beyond the classroom and into the schoolyard as students will build a fully-functional compost pile. This hands-on lesson teaches students about the properties of soil and how composting is important to the environment.

Objective

To teach students about soil composition and how living things depend on and are affected by soil quality and composition.

NOTE: *It takes a minimum of six months to transform food waste into compost. To see the best results from your compost pile, the ideal time of year to start is early in the fall.*

Pre-Activity

DEFINITIONS

DIRECTIONS

COMPOSTING VS. RECYCLING

Break students into small groups. Half of the groups will discuss composting and the other half will discuss what they know about recycling.

COMPOSTING GROUPS:

Have students write down what they know about composting.

- What kinds of materials can be composted?
- What are some different ways to make compost?
- Why do we compost?

Basic definition: *Composting is a natural process through which organic material (e.g. food waste, yard waste) is turned into a soil-like product called compost. Compost can be used as a fertilizer for plants. Composting is nature's way of recycling!*

(cont'd)

MATERIALS

Whiteboard
and markers

DURATION

15 mins

MAIN LEARNING OUTCOME

GRADE:

3

SUBJECT:

Science



Outcome 1

Students will investigate the properties of soil and its effect on living things.

Indicators

- Observe and describe how living things affect and are affected by soil
- Describe and respond to ways in which soil is important to living things and the environment

CROSS-CURRICULAR LINKS

English Language Arts



Outcome 1

Listening and Speaking

Students will communicate effectively and clearly and respond personally and critically.

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DEFINITIONS (cont'd)

DIRECTIONS

RECYCLING GROUPS:

Have students write down what they know about recycling.

- What kinds of materials can be recycled?
- What are some different ways to recycle?
- Why do we recycle?

Basic definition: Recycling is when we transform waste (such as plastic or glass) into new and useful products. Machines can melt plastic and glass into a liquid that can be reformed into new plastic or glass items.

Have groups of students share what they know about recycling and composting with each other. Discuss how composting and recycling are similar.

MATERIALS

Whiteboard
and markers

Activity

BUILD YOUR OWN COMPOST PILE

DIRECTIONS

Before starting your compost pile, get permission from school administration. You can fill out the **Plan of Operation form (Appendix 1)** and submit it to the principal.

PART 1

Once your students have an understanding of compost, it is time to build your own compost pile! Explain that after you build the pile, the class will check it weekly to monitor the breakdown of various items.

OPTIONAL: Have each student monitor a particular piece of food waste each week to note the progression of the decomposition.

PART 2: CREATE YOUR COMPOST PILE

1. CHOOSE A COMPOSTER

While a container is optional, it can help keep the compost pile tidy and manageable. A composter will prevent organic material from blowing around and keep it from getting too wet from rain, which can cause it to smell. You can purchase a ready-made container, or find instructions online to make your own. The Divert NS website is a great place to start:

Backyard Composting (Information and PDF Booklet)

divertns.ca/recycling/what-goes-where/composting/backyard-composting

2. PICK A LOCATION

Choose a spot in the schoolyard with a fair amount of shade, such as under a tree or at the edge of a wooded area. This will prevent the compost from drying out in the sun. The composter should be easy to access in all seasons.

MATERIALS

Appendix 1
Plan of Operation
form

DURATION

5 min

DURATION

60 min

MATERIALS

See items next
to each step

BUILD YOUR OWN COMPOST PILE (cont'd)

DIRECTIONS

3. BUILD THE PILE

A successful compost pile is made from alternating layers of browns (e.g. leaves and paper) and greens (e.g. kitchen waste and grass clippings). Start with browns and then switch between layers, ending with brown on top. Breaking large materials, such as twigs, into pieces will help them decompose faster.

4. ADD MATERIAL TO THE PILE

Greens, like food waste, add nitrogen and moisture to the pile while browns, like leaves or paper, help air circulate and also add carbon. Keeping greens sandwiched between browns helps everything break down faster. Keep browns close to the pile so they can be added on top of any greens.

5. MAINTAIN THE PILE

The pile should always be damp but not too wet, like a squeezed sponge. If the pile is too damp, add browns to help absorb the moisture; if it is too dry, add more greens. Every two to three weeks turn the compost using a pitchfork or shovel to help air circulate. Oxygen is the key to perfect compost.

Note: Never put meat, fish, bones, fat, dairy, or pet waste in your backyard compost pile. These items take a long time to decompose and can attract rodents and create odours.

MATERIALS

Supply of dry leaves and/or paper, and green organic material

Rake, shovel or pitchfork

Post-Activity

COMPOST OBSERVATION

DIRECTIONS

MONITORING THE COMPOST

Take your students outside to monitor the compost each week during class.

OPTION: Have the students work individually or in groups to fill in the **Observation Sheet (Appendix 2)**

OPTION: Take photos of the pile each week to record progress.

Every second or third week, turn the compost pile to mix the inner and outer layers. More frequent turning will speed up decomposition.

NOTE: A steady decrease in the temperature at the center of the pile will signal the end of the composting process. When the compost is finished, it will have a dark color and a crumbly soil-like texture.

MATERIALS

Appendix 2
Compost Pile
Observation
Sheet

Thermometer

DURATION

15–20 min





WASTE REDUCTION EDUCATORS

Divert NS provides funding to municipalities to deliver waste reduction education to schools across the province.

Your local waste reduction educator(s) provides the following services, and more, free of charge!

- classroom presentations
- green team set up
- advice on bins and signage
- tours of local waste facilities
- school waste audits

To find out more, visit divertns.ca

BUILD YOUR OWN COMPOST PILE (cont'd)

DIRECTIONS

USING THE COMPOST

Use finished compost as a mulch or top dressing around plants shrubs and trees. The compost will provide soil nutrients, retain moisture, and inhibit weed growth.

Look for uses for compost around the school grounds.

OPTIONAL: Prepare a report that will describe the composting project. Present the report to the school principal.

OPTIONAL: Consider publicizing the project in the school and community newspaper.

MATERIALS

½ inch screen or sifter

If available: garden tools, such as shovel, tarp or wheelbarrow, bucket

DURATION

15 min

Assessment

FORMATIVE Throughout the group discussion and compost pile construction and monitoring, observe and evaluate student behaviour/level of effort and engagement.

SUMMATIVE (OPTIONAL) Collect and evaluate the Compost Pile Observation Sheet.



ENVIRONMENTAL EVENTS

There are many great opportunities throughout the year to highlight the 3Rs in the classroom. Check out these annual events:

Waste Reduction Week October (3rd week)

Earth Day April 22

Compost Awareness Week May (1st full week)

Environment Week June (1st full week)

ABOUT DIVERT NS

Divert NS is a not-for-profit organization championing recycling in Nova Scotia. For over 20 years we've helped build a culture of recycling through environmental stewardship, education, and innovation. Divert NS operates the **Beverage Container Deposit-Refund Program** and the **Used Tire Management Program**. In addition, we work in collaboration with government,

industry, and academia to divert waste-resources from landfill. Divert NS, in partnership with municipalities, delivers education and awareness programs to schools, businesses, and community groups. Divert NS also works to develop stewardship agreements and funds innovative research and development initiatives.

Toll-free 1.877.313.7732 • info@divertns.ca • divertNS.ca



Compost Pile Plan of Operation

Teacher's Name: _____

School: _____

Grade: _____ Class/Subject: _____

PROJECT OVERVIEW AND PURPOSE:

Compost pile location: _____

COMPOST PILE PLAN OF OPERATION:

Who will maintain the pile? _____

How often will it be checked on? _____

What is the plan for when the class is finished with the pile? _____

MATERIALS AND COSTS:

What materials are needed to construct and maintain the compost pile?

Are any materials being requested from the school administration?
If so, what is the total cost?



APPENDIX 2
COMPOST CREATORS

Compost Pile Observation Sheet

For students to complete weekly

Date:	Student Name(s):
Outside Temperature:	
Compost Pile Temperature:	Was there a change in the overall look of the compost pile? If so, please describe.
Was there a change in the color of the compost since last week? If yes, please describe.	
Which materials have started to break down? Which have not?	
Other observations	