Lesson Plan: Compost, Grades 4 Science and Technology

Activity

What's in your compost?

Introduction

Our **organic waste** (anything that use to grow or was once alive that we no longer need or want) is full of energy and nutrients and should be diverted away from the garbage. By composting this material, we can create a complex ecosystem with the right environment to create a dark, crumbly, soil-like material that helps enrich our soils. Healthy soil means healthy plants, and healthy plants means healthy people and animals. In this lesson, students will explore compost to gain an understanding of complex food chains/food webs.

Curriculum Connections

Science and Technology, 2022 (revised)

Grade 4

- Strand A: STEM Skills and Connections
- Strand B: Habitats and Communities

Learning Objectives

1. Make connections between soil, plants and animals and the food we eat
2. Explain organic material, organic waste, and waste diversion programs
3. Describe the relationship of organisms in a food chain, and classify organisms as producers, consumers, or decomposers
4. Compare and contrast a food chain versus a food web
5. Examine the soil food web
6. Identify personal actions that they can take to minimize organic waste and enhance soil conditions

Resources Provided

- Module: Compost
- Worksheet: What's in your compost?
- Soil Food Web

Activity

1. We are part of a complex food chain/food web. A food chain/food web shows the movement of energy through an ecosystem. Explain that a **food chain** follows a clear, single linear path, whereas a **food web** illustrates a more complex relationship with many food chains within an ecosystem and their interconnections.

The Regional Municipality of Durham - Waste Management Services
If this document is required in an accessible format, please contact schoolprograms@durham.ca

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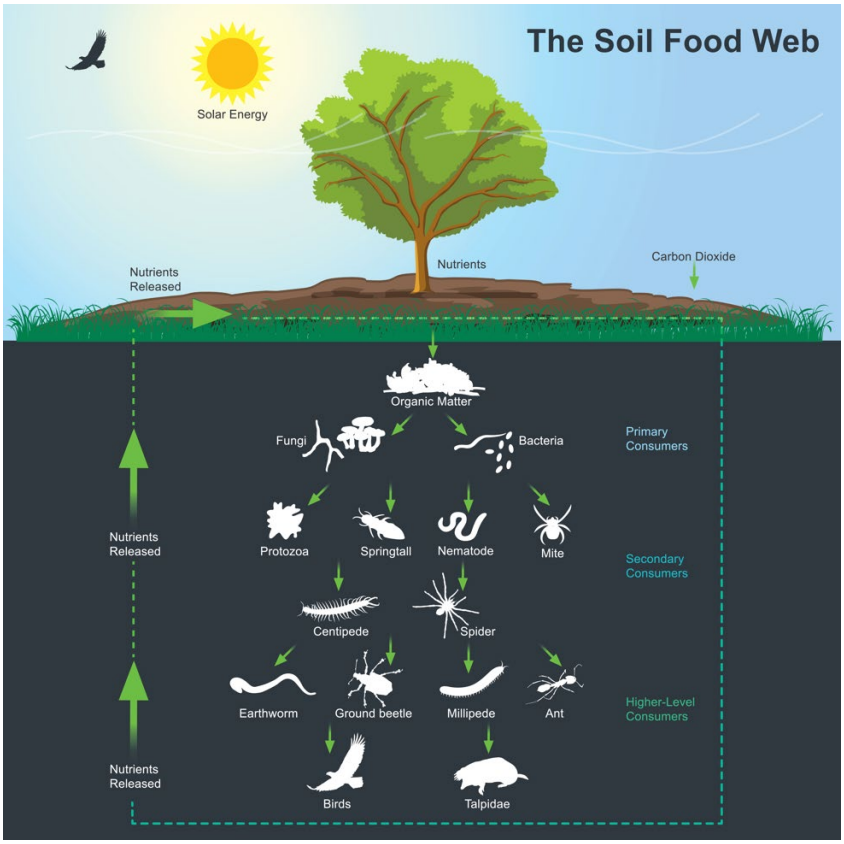
2. Explain that all the items in their lunch bags that use to grow, or were once alive, are made of **organic material**. Have students complete a list of all the food items included in their lunch today. How many of these items can be traced back to soil?
3. **Organic waste** is anything that use to grow, or use to be alive, that we no longer need or want. How is this waste managed in the Region of Durham?
4. Ask students why it might be important to have a **waste diversion program** (a program that diverts waste away from the garbage) for organic waste? How can we decrease the amount of organic waste that we create? Examples include making sure to eat what we buy, only taking as much food as we can eat, using up leftovers, storing food correctly to keep it from going bad, and making sure to use up peels and scrapes whenever possible.
5. Composting can also be done at home or at school. As a class, watch the video Backyard Composting for Beginners.
6. The compost pile is a community that is full of life! The compost process works with the help of bugs, insects, and **microorganisms** (a microscopic organism such as bacteria and fungi) combined with air and moisture. This is a great opportunity to explore the soil food web with the class to learn more about the compost ecosystem.



7. Have students complete the provided worksheet: What's in your compost?

Summary

Composting is a great way to divert organic waste away from the garbage. Using finished compost on lawns and in gardens returns important nutrients back to the soil and improves overall soil conditions. Compost can be used to grow new plants and food - this is a great circular approach to managing our organic waste!

Expanded Curriculum Connections

Grade 4, Science and Technology, 2022 (revised)

A: STEM Skills and Connections

A1. STEM Investigation and Communication Skills

- A1.1 use a scientific research process and associated skills to conduct investigations
- A1.5 communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes

A3. Application, Connections, and Contributions

- A3.1 describe practical applications of science and technology concepts in various occupations, including skilled trades, and how these applications address real-world problems
- A3.2 investigate how science and technology can be used with other subject areas to address real-world problems

B: Habitats and Communities

B2. Exploring and Understanding Concepts

- B2.1 describe habitats as areas that provide organisms, including plants and animals, with the necessities of life, and identify ways in which a local habitat provides these necessities
- B2.2 describe a community as a group of interacting species sharing a common habitat, and identify factors that affect the ability of a community of plants and animals to survive in a local habitat
- B2.3 describe the relationship of organisms in a food chain, and classify organisms as producers, consumers, or decomposers
- B2.4 demonstrate an understanding of a food web as the interconnection of multiple food chains in a natural community
- B2.5 describe how animals are categorized according to their diet, and categorize various animals as carnivores, herbivores, or omnivores