Growing Up Organic operates on traditional and unceded territory of the Algonquins: now known to many as Ottawa, and now home to many from across Turtle Island and beyond.

Grade 3-4

Seed Saving

Mindfulness minute: If it speaks to you, take two minutes with your students before this workshop to slow down and root down with this mindfulness minute.

LESSON FOCUS AND GOALS

In this lesson, we explore some of the techniques used by First Nations and early settlers to save seeds and dry herbs. We also discuss how different plants interact with the living and nonliving components of their habitat to ensure their survival through seed dispersal.

LEARNING OBJECTIVES

Grade 3

Social Studies: Heritage and Citizenship

SPECIFIC EXPECTATIONS

A3.3 - Identify some of the main factors that helped shape the development of settlements in Canada during this period (e.g., the establishment of trading posts based on trade routes and the knowledge of First Nations peoples; navigable lakes and rivers for trade and transportation; climate; proximity to natural resources; the origins of settlers), and describe how the physical features of the land and the availability of goods and services can facilitate settlement and enhance community life
A3.6 - Describe some key aspects of life in selected First Nations, Métis, and settler communities in Canada during this period, including the roles of men, women, and children
A3.7 - Describe how some different communities in Canada related to each other during this period, with a focus on whether the relationships were characterized by conflict or cooperation (e.g., cooperation between First Nations and settler communities with respect to the sharing of medicines and technologies; intermarriage between First Nations women and European men; cooperative efforts to establish farms and villages; conflict as settlers impinged on First Nations lands; conflicts between different religious or ethnic groups)

Arts: Creating and Presenting

OVERALL EXPECTATIONS

D1 -Apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;

Mathematics: Number Sense

B1- Demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life

Science and Technology: Understanding Life Systems

SPECIFIC EXPECTATIONS

2.2 - Observe and compare the parts of a variety of plants

2.6 - Use appropriate science and technology vocabulary, including stem, leaf, root, pistil, stamen, flower, adaptation, and germination, in oral and written communication;

2.7 - Use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes

3.2 - Identify the major parts of plants, including root, stem, flower, stamen, pistil, leaf, seed, and fruit, and describe how each contributes to the plant's survival within the plant's environment;

3.3 - Describe the changes that different plants undergo in their life cycles (e.g., some plants grow from bulbs to flowers, and when the flowers die off the bulb produces little bulbs that will bloom the next year; some plants grow from germination of a seed to the production of a fruit containing seeds that are then scattered by humans, animals, or the wind so that new plants can grow)

3.4 - Describe how most plants get energy to live directly from the sun and how plants help other living things to get energy from the sun

3.5 - Describe ways in which humans from various cultures, including Aboriginal people, use plants for food, shelter, medicine, and clothing

3.6 - Describe ways in which plants and animals depend on each other (e.g., plants provide food for energy; animals help disperse pollen and seeds, and provide manure that fertilizes the soil in which plants grow; plants need the carbon dioxide that animals breathe out, and animals need the oxygen that plants release into the air)

Grade 4

Social Studies: Heritage and Identity

SPECIFIC EXPECTATIONS:

A1.4- Compare a few early societies, including at least one First Nation and one Inuit society, in terms of their relationship with the environment (e.g., with reference to seasonal rhythms, use of land and resources, differences between urban and rural communities, religious and spiritual practices/ beliefs with respect to the environment), and describe some key similarities and differences in environmental practices between these societies and present-day Canada

A2.1- Formulate questions to guide investigations into ways of life and relationships with the environment in a few early societies, including at least one First Nation and one Inuit society, with an emphasis on aspects of the interrelationship between the environment and life in those societies (e.g., connections between the local environment and settlement, art, medicine, religion, spirituality, types of work; the impact on the environment of agriculture or the development of towns, cities, settlements, communities, and/or villages)

A3.4- Describe significant physical features and natural processes and events in a few early societies, including at least one First Nation and one Inuit society (e.g., physical features: rivers, flood plains, mountains, volcanoes, barren lands, tundra, ocean shore, fertile soil; natural processes: seasonal changes in climate, animal migration, erosion; natural events: earthquakes, floods, volcanic eruptions) and how they affected these societies, with a focus on the societies' sustainability and food production

A3.5- Describe the importance of the environment for a few early societies, including at least one First Nation and one Inuit society, with a particular focus on how the local environment affected the ways in which people met their physical needs

Science and Technology: Understanding Life Systems

SPECIFIC EXPECTATIONS:

1.1- Analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts

3.3- Identify factors that affect the ability of plants and animals to survive in a specific habitat;

3.7- Describe structural adaptations that allow plants and animals to survive in specific habitats

MATERIALS NEEDED

Plants gone to seed in the garden (ideal: lettuce, beans, basil, pumpkins/squash)
Herbs ready to be harvested
Paper bags
Bowl of clean cold water
Colouring pencils
Envelopes

STRUCTURE / ACTIVITY

This workshop works best by dividing the class into three small groups and rotating through the stations described below; however, the activities can be organized otherwise to address the whole group at once, depending on facilitation capacity.

Station 1: Seed collecting

Begin by exploring how First Nations and early settlers grew their food and some of the differences compared to how we garden today.

Lettuce was grown throughout Europe by the 1600s, and was one of the first garden vegetables introduced to Canada by Christopher Columbus and the early European settlers [adapt to the variety of vegetable from which you are saving seeds]. But since you couldn't just go to the store and buy seeds in those days, how do you think the settlers kept planting lettuce year after year? - by saving seeds! Even before the settlers arrived, First Nations saved seeds from their vegetables to re-plant year after year for thousands of years.

Each plant produces its own seeds to reproduce, near the end of its life cycle. Go around the garden and identify different vegetables with obvious seeds. Where are the seeds located? In which part of the plant are seeds found? Why?

Discussing seed dispersal

Ask the students if they know how seeds disperse. Take a walk around the garden again and think about how different plants in the garden may have different strategies for dispersing their seeds (Good examples include any tomatoes or fruit that have been munched on by critters!)

Example: Lettuce

~~Lettuce knows tha~~t the end of its life cycle approaches when the days start to get really hot; when that happens, lettuce bolts, meaning it shoots up into the air and produces little yellow flowers. Like miniature dandelions, the lettuce seeds form in little packets of fluff (show lettuce seeds). Why do you think the seeds have this fluff around them? (seed dispersal through the wind). What other ways do seeds have to ensure that they get dispersed? (If there are any squash or beans or tomatoes that have been eaten by animals in the garden, they can be used for demonstration).

Collecting seeds

Just like we inherit characteristics from our parents, plants inherit characteristics from their parents. What traits have you inherited from your parents? (for example curly hair or brown eyes). First Nations and early settlers would choose their best vegetables and save the seeds to plant in the following years.

What are some of the characteristics of lettuce that we like the most? (for example taste, size, color). Show students how to choose plants from which to collect seeds, and how to collect the seeds (depending on the plant variety). Demonstrate how to extract the seeds. If the seed feels a little damp, leave them to dry on a plate before labeling and storing.

Station 2: Seed Packet Creation

In the second part of this workshop, students create seed packages to store their collected seeds. Seed packets made by students can be used to raise awareness within the school community around the garden. Sell them as a fundraiser, or donate them as gifts for school garden partners and volunteers. Today, most farmers and gardeners buy their seeds from companies. Imagine you were going to sell the seeds you collected today. What information is necessary to include on the seed packet? What do we need to know?

Have some commercial seed packets available as examples. Which ones are the most attractive? What kinds of information do they provide? Make a list with the students of the information they need to include in their own packets.

Remember, at the store, there will be many seed companies selling their seeds as well, so be creative and think about what someone would look for and why someone would choose to buy your seed packet. Using envelopes and coloring pencils, have each student create their own seed packet for the seeds they will collect.

Station 3: Drying Herbs

Cut herbs at about one-third down the main stem. Wash herbs (if they are dirty) with the leaves on the stem in cold water and drain thoroughly on paper towels or shake. Bunch a few stems together and tie them at the base and place them into a paper bag to hang upside down. Leaves will be dry and ready in about 1-2 weeks (when they feel dry and crumbly). Label the paper bags with the herb and the date.

Note: *Once the leaves are dried, they should be stored in airtight containers until used. For the first few days, examine the jars daily to make sure no moisture develops (which can cause mold). If any moisture develops, repeat the drying process. Do not use paper containers to store herbs as they will absorb the aromatic oils.*