Nature NB Program Kits:

# Table of Contents

[Introduction]

[Program Curriculum Links]

[Background Information]

[Activity 1: Build a tree]

[Activity 2: Breathing Trees Experiment]

[Activity 3: Find Your Tree]

[Activity 4: Tree Bingo]

[Additional Resources]

[Contact Us!]

# Introduction

■ The activities in this kit will help you introduce tree anatomy and the important roles trees play in our ecosystem.
■ The kit is written primarily for New Brunswick educators. The information and activities in this kit are tailored to the grade 1-3 level, with specific New Brunswick curriculum links listed.
■ The activities in this kit are organized to be held in succession, inspired by Joseph Cornell's Flow Learning Model[1].

- ➔ A game to rid some energy
- ➔ An activity using physical senses
- ➔ A direct experience with nature to awaken love/ importance
- ➔ A quiet, focused reflection activity.

With that said, each activity works as a stand alone, so feel free to pick and choose the activities that fit best with your classroom.

# Program Curriculum Links

*Sourced from the Government of New Brunswick Department of Education and Early Childhood Development Curriculum Development, Anglophone Sector.*

### Grade 1

- ➔ **1.2.1** describe how plants and animals meet their needs in a given environment

### Grade 3

**Science:**

- ➔ **100-28** identify and describe parts of plants and their general function
- ➔ **102-12** describe ways in which plants are important to living things and the environment
- ➔ **102-13** identify parts of different plants that provide humans with useful products, and describe the preparation that is required to obtain these products and how our supply of useful plants is replenished

[1] Flow Learning Model:Step 1: Awaken Enthusiasm Step 2: Focus Attention Step 3: Direct Experience Step 4: Share Inspiration

# Background Information

Today we will be exploring the importance trees play in our personal lives and within the ecosystem. This program provides a general summary of how trees are structured as well as common trees and related items that can be seen across New Brunswick. It also features a sensory game and an experiment that explores photosynthesis. Combined, these activities will have students enthusiastically appreciating the nature that surrounds them everyday.

Preparing To Explore A Natural Area:
When exploring a natural area, it is always recommended to do a very quick check of the area in advance. Check for hazards like poisonous plants, thorns, dead trees, litter/broken bottles.

The existence of a hazard does not mean you need to cancel the outing (nature will always have certain hazards, after all!). However, you may need to make some modifications to what areas your group will explore or how you will explore them. For example, if you spot a stinging nettle plant and a pothole where children could twist an ankle, you could place a special marker like red flagging tape near those hazards. Before starting exploration, you could explain your boundaries and that the group must avoid areas near the red markers.

# Activity 1: Build a Tree

**Materials:** None
**Location:** Outside in a field / inside in an area large enough to form a circle with the class
**Time Required:** 15 minutes

**Activity Description:**
Have the students arrange themselves in rings. The 2 students in the middle are the heartwood of the tree. Have these students make a “grr” noise as if they are flexing their muscles and explain that the heartwood is the muscle of the tree. The ring of students around the heartwood is the xylem. Explain that the xylem is responsible for transporting water from the roots of the tree to the leaves of the tree, and have these students make a “wshh” noise as if water is flowing. The next ring of students surrounding the xylem is the phloem. Explain that the phloem is responsible for pumping the sugars in the tree, and have these students make a pumping noise “chugga- chugga”. The next ring of students is the bark. Have these students bark like a dog. Like a watch dog would protect something, the bark is protecting the tree. The next ring of students are the branches and leaves. Have these students sway back and forth as the branches do with wind and explain that they are responsible for collecting sunlight to use for photosynthesis. Now, have all of the students make the noises at the same time for a tree symphony.

# Activity 2:  Breathing Trees Experiment

**Materials:** Glass/plastic bowl, water, small rock, leaf
**Location:** Inside or outside
**Time Required:** 25 minutes, leave for several hours, 10 minutes

**Activity Description:** This activity can be modified for each student to do individually or share in small groups. It begins by a small science lesson in understanding how plants breathe through photosynthesis and then an experiment to demonstrate this process. Photosynthesis may be an advanced lesson for younger audiences and this activity can be simplified to talk solely about plants breathing to help produce oxygen.

Explaining photosynthesis:
Raise your hand if you think plants can breathe. Plants can actually breathe but plants do not have lungs or a respiratory system like you and I do. Instead, plants like flowers and trees breathe through their **stomata.** This means plants can breathe through special cells. When a human breathes, we take in oxygen and exhale carbon dioxide. A plant does the opposite- it is powered by sunlight to help it inhale carbon dioxide from the air and creates fresh oxygen that humans and other animals can breathe. This is why plants and trees are so important to us.

Instructions:
Get students outside and find a large leaf that is growing on a tree or plant. Remove a leaf from the tree (do not just pick one up off the ground as living leaves are essential for this experiment). Maple leaves work great for the visual component of this activity, but any freshly picked leaf will do. Place the leaf in a bowl/tub of water (temperature makes no difference) that has enough room for submersion, then place a small rock on the leaf so that it stays at the bottom of the bowl and is completely submerged. Leave the leaf for several hours in a sunny area. Upon returning to the leaf, students will see small bubbles have formed atop the leaf and along the edge of the bowl. Ask students, “what happens when you are underwater and you blow out your breath?” The bubbles you see on the leaf in the water is the same process, the leaf is exhaling oxygen and making bubbles.

## Activity 3: Find Your Tree

**Materials:** None
**Location:** Forested trail/Woodsy area
**Time Required:** 20 minutes

**Activity Description:** Have students partner in groups of two for this activity. At a starting point, one partner will be blindfolded and led several yards by their partner through the woods to a tree. The object of the game is to have the blindfolded  identify the tree once the blindfold is off. With their partner's assistance, the blindfolded student may run their fingers over the tree bark and smell it. They should also feel if the tree has leaves on its branches, big roots or lots of fallen leaves surrounding it. When they feel familiar enough with the tree, they will walk back to the starting point, remove the blindfold, and see if they can locate the tree by using sensory clues.

## Activity 4: Tree bingo

**Materials:** Writing utensil, Bingo Card
**Location:** Outdoor, schoolyard / field
**Time Required:** 20 minutes

**Activity Description:**

Instructions: Hand out bingo cards and markers to students, explain that they will walk through the wooded area/trail looking for each item on the card marking each item off as they find it. Once they have found a line, the student can yell "bingo". For older groups, the entire card can be filled to get a "bingo" instead of a single line.

Download Bingo Cards here:

Tree Bingo 1

Tree Bingo 2 (more difficult)

## Additional Resources

Nature NB's Bilingual Common Trees of New Brunswick Identification Guide

# Contact Us!

If you've used our program kits we would love to hear from you! Please email programs@naturenb.ca with feedback on your experience.

***This program kit was developed with generous funding by:***

NB Wildlife Trust Fund / Fonds de Fiducie de la Faune du N.-B.

naturehood A NATURE CANADA INITIATIVE

Nature CANADA

Natural Sciences and Engineering Research Council of Canada / Conseil de recherches en sciences naturelles et en génie du Canada

Canada