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

# Seed Starting

<u>Mindfulness minute</u>: 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

Start seedlings for the garden while exploring the differences and similarities between various seeds.

## LEARNING OBJECTIVES

Grade 3 Science and Technology: Understanding Life Systems

### **OVERALL EXPECTATIONS:**

2. Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;

3. Demonstrate an understanding that plants grow and change and have distinct characteristics.

## SPECIFIC EXPECTATIONS:

- 2.2 Observe and compare the parts of a variety of plants
- 2.3 Germinate seeds and record similarities and differences as seedlings develop;

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

3.1 - Describe the basic needs of plants, including air, water, light, warmth, and space

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.

3.4 – Describe how most plants get energy to live directly from the sun (e.g., plants turn the energy from the sun into food for themselves) and how plants help other living things to get energy from the sun

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## MATERIALS NEEDED

Lima or kidney beans (soaked overnight) Variety of seeds including common seeds (sesame, corn, rice, acorns, peas, pumpkin seeds, kidney beans), less common seeds (lentils, flax); very small seeds (poppy seeds) and very large seeds (acorn;coconut). Seed parts diagram Jiffy pots Soil-less seed starting mix Seeds (recommended: pumpkin, zucchini, squash) Popsicle sticks or clothespins Plastic tray One Seed Starting Worksheet per student

## STRUCTURE / ACTIVITY

### <u>Part One: What is a seed?</u>

Have the students assemble around dishes filled with various seeds from the mix. Discussion points:

Think about all the different seeds you see in the mix. How many can you identify? Seeds are just as diverse as the vegetables and fruits they produce!

Which seed is the smallest? Which one is the biggest?

Point out the different varieties of a single species (black and white rice; red and yellow corn; red and brown lentils); there are hundreds of varieties within a single species!

Students use the first space in the worksheet for drawing and recording observations from this station/activity.

### **Discussing seed dispersal**

Distribute the pre-soaked kidney beans and magnifying glasses to the students; instruct them on carefully removing one half of its shell.

Discussion points:

Look inside - what do you see? How many different parts?

What do you think each part is for? What does each part become?

Using a diagram, identify the parts of the seed and ask students to find the equivalent part in the kidney bean. Big or small, seeds all have three things in common related to their structure:

1) Hard protective shell outside called the seed coat.

2) Dormant embryo inside.

3) Nutrition (stored food) to keep it viable.

Students use the second specte in the worksheet for drawing and recording observations from this <u>station/activity.</u>

### Part three: Planting Seeds

Distribute the jiffy pots to students and prepare the soil-less mix by adding water to moisten it. Have the students fill their jiffy pots and plant a seed in each one. Identify what vegetable has been planted on one side of the Popsicle stick or clothes pin, and the student's name on the other side. Place the jiffy pots on a plastic tray and keep the seedlings in a warm spot for germination (a light table is ideal); water daily.

<u>Students use the third space in the worksheet for drawing and recording observations from this</u> <u>station/activity. Over the course of the next several weeks, students can record their observations as</u> <u>the seeds germinate and the seedlings grow.</u>

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