

# ACTIVITY IDEAS PLANTS

Grades  
1-3

## SUPPLEMENTARY RESOURCE FOR VIDEO 5: EDUCATOR STRATEGIES FOR A PLAYFUL CLASSROOM

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### About this guide:

This document is a companion guide to the Ontario Science Centre's video series on [play-based learning](#), produced in partnership with the Ontario Ministry of Education.

**"Play is a vehicle for learning  
and lies at the core of  
innovation and creativity."**

- Ontario Ministry of Education

# LEARNING OPPORTUNITY: PLANT SKETCHING



## What it's about:

- Students use sketching as a tool for close observation by drawing objects scattered on a mirror.
- Often, we associate research with books or the internet, but research can also mean direct observation.



## Materials:

- Drawing materials, such as watercolour pencils/ crayons, brushes and water
- Paper, such as watercolour sheets cut in half
- Placemats to mark individual work areas (optional)
- Mirrors on which to scatter objects
- Natural objects to place on the mirrors, such as twigs, interesting branches, pine cones, cotton bolls, teasel heads, sea shells, etc.

## Try it outside:

- Have students draw the same tree (or other object) each day or week for a period of time. How does it change?
- Encourage students to sketch different cloud types on different days. What do the trends tell them about the weather?
- Have students trace a shadow. How quickly does it change?
- Supply students with a variety of paint swatches, then have them find a match for each colour in both natural and built environments.
- Research plein air (outdoor) painting as a class, and then give it a try!
- Challenge students to find and sketch an object that meets a certain criteria (e.g., something red, something tiny, a seed, something man-made, etc.).

# LEARNING OPPORTUNITY: PLANT SKETCHING

## Connections/Extensions:

- Explore other links between sketching and scientific observation with your class (e.g., scientific illustration, Leonardo da Vinci's sketches, etc.).
- Geometry connections for this activity include learning to draw by finding basic shapes within objects.
- Related drawing exercises include gesture drawing, contour drawing and reproducing an image with a grid.
- Have students try the [vase/faces exercise](#).

## Observations from prototyping:

- The arrangement of objects on the mirror made ordinary things look very special.
- Objects contained within glass produced interesting reflections in the mirror.
- It would be interesting to ask students to bring in special objects to draw.
- Some students tried to sketch the objects, while others drew their own pictures.
- We invested a bit of money to give students the opportunity to use good-quality art materials, and we felt it made the activity richer. That being said, it would also be fun and enjoyable with inexpensive materials.
- We discussed with students that the paper was special, so they should use one sheet per person, and they obliged.

**See next page for sample instructions and prompts.**

**Optional: Print the instructions and place them in a T-stand.**



# PLANT SKETCHING

## Sketch your observations

### Important notes:

- ✓ Watercolour paper is very special, so use only one piece.
- ✓ When you are finished with your sketch, put out a fresh sheet of paper for the next person to use.
- ✓ Don't forget to tidy your station when you're finished.

### Things to notice and try:

Look carefully at the objects on the mirror. What colours do you see?

Draw on your paper with a pencil or crayon. What happens if you brush a little water on top of the line you made?

# LEARNING OPPORTUNITY: PAINTING WITH PLANTS

## What it's about:

- Students explore materials and textures by applying paint with non-traditional materials.
- White wax candles are also provided to create areas that resist water-based paints.

## Materials:

- Mats to protect table and mark individual work areas
- Paper, such as watercolour sheets cut in half
- Natural materials for painting, such as pine cones, evergreen branches, interesting twigs, etc.
- Paint, such as diluted watercolour or acrylic paint
- Containers of water for rinsing
- White candles broken in half (crayons would also work)

## Try it outside:

- This has potential for mess, so it would be fun to try it outdoors with large sheets of craft paper.
- In the winter, students could paint the snow with evergreen branches or interesting twigs (using water-based, non-toxic pigments).
- Have students try splatter painting outdoors (using water-based, non-toxic pigments).

## Connections/Extensions:

- Have students try using cut fruits or potatoes for printmaking.
- Use this activity as a starting point for researching and studying abstract art with your class.
- Have students make natural pigments with materials like pureed beets, turmeric, mustard powder, arrowroot, berries, red cabbage, etc.
- Encourage students to research cave painting. What materials did ancient artists use, and what did they paint?

## Observations from prototyping:

- When paintbrushes were provided, students were more inclined to use them over the natural materials. (It's up to you to decide if that matters.)
- Grade 3 students worked with minimal supervision. We used only two colours of paint that would still look nice if mixed together, anticipating that they would mix. Students were surprisingly diligent about rinsing brushes before switching colours.
- Someone suggested taking a crayon rubbing of a natural object, and then applying a wash of paint on top. This would be an interesting idea to explore further.

**See next page for sample instructions and prompts.**

**Optional: Print the instructions and place them in a T-stand.**



# PAINTING WITH PLANTS

## Explore plant materials and textures

### Important notes:

- ✓ Watercolour paper is very special, so use only one piece.
- ✓ When you are finished with your sketch, put out a fresh sheet of paper for the next person to use.
- ✓ Don't forget to tidy your station when you're finished.

### Things to notice and try:

Draw on the paper with the white candle. What happens when you add paint on top of the lines you've made?

Try painting with the natural materials. How many different kinds of lines can you make?

# LEARNING OPPORTUNITY: SEED MOSAIC



## What it's about:

- Students explore collage and patterning by arranging dried legumes on a mirror.

## Materials:

- Mixed raw legumes, such as chickpeas, white navy beans, black beans, kidney beans, and yellow and green split peas
- Large mirrors on which to arrange legumes

## Try it outside:

- Encourage students to photograph different examples of tile mosaic in their neighbourhoods. In Toronto, subway tile is a good example.
- Purchase a bag of mixed birdseed, and have your class make an edible mosaic outdoors.
- Have students look for examples of radial and bilateral symmetry outdoors in the natural and built environment.
- As a class, research Andy Goldsworthy, an artist who makes beautiful temporary outdoor artworks using natural found materials. Try something similar!

## Connections/Extensions:

- Have students take pictures of completed mosaics and display them in a special place.
- To transform this into a take-home art activity, have students glue legumes onto black bristol board instead of arranging them on a mirror. Choose smaller legumes (e.g. split peas, soup mix) that will stick easily.
- As a class, explore mosaics in architecture.
- Patterning- and algebra-related mathematics connections for this activity include creating, identifying and extending patterns.
- Geometry-related mathematics connections for this activity include shapes and symmetry.



## Observations from prototyping:

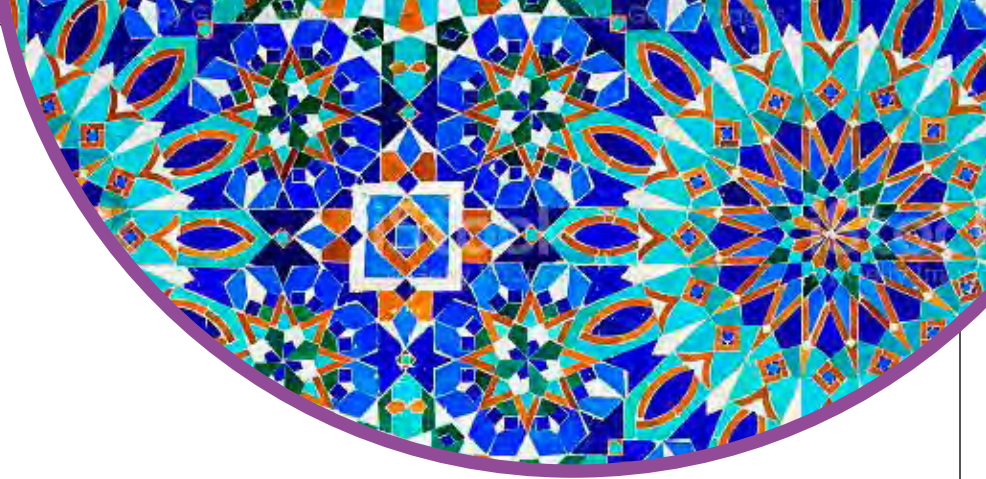
- We were concerned that students would try to eat the legumes, but we didn't find it to be an issue.
- We used angled mirrors, because that's what we had on hand. Students figured out pretty quickly that the mirrors could be lifted off the table and used to explore rotational symmetry.

**See next page for sample instructions and prompts.**

**Optional: Print the instructions and place them in a T-stand.**



# SEED MOSAIC



## Use the seeds to make a pattern on the mirror

### Safety notes:

- ✓ Never eat your science experiments.
- ✓ Tidy your spot when you finish so that the next person can have fun too.

If you want to save your design, ask your teacher to take a picture of it!

**Don't forget** to put the seeds back when you're done.



# LEARNING OPPORTUNITY: PLANT OBSERVATION AREA



## What it's about:

- Students are provided with plant specimens, observation tools (magnifying glass, smartphone microscope) and sticky notes for recording questions.

## Materials:

- Writing materials
- Sticky notes
- A [mould terrarium](#)
- Interesting plants (e.g., hyacinth bulbs and buds, marimo balls, cacti, etc.)
- Experiments in regrowing vegetable scraps. We used:
  - ◆ Celery
  - ◆ Carrot
  - ◆ Radish
  - ◆ Avocado
  - ◆ Garlic
  - ◆ Green onion

## Try it outside:

- Have students collect plant parts to try and sprout indoors.
- Teach students how to identify trees.
- Encourage students to observe tree buds in winter after the leaves have fallen.
- Find leaves outside and have students sort them by categories of their choice.
- As a class, research how to force buds to bloom, then experiment with twigs in early spring.

## Connections/Extensions:

- Discuss other plant-related topics, such as plant anatomy and edible plants.
- Search online for plant germination experiments to try together, such as germinating seeds in eggshells, growing a garden in a glove or sprouting seeds in CD cases.
- Try growing sprouts from legumes or from herb plants that have gone to seed.
- How do plants change as they grow? Have students sketch a plant during different stages to find out.
- Students can create mould terrariums using pebbles, air plants, twigs and tiny toy animals.
- To explore fungus, students can try edible DIY mushroom kits (available online or at some hardware stores).

## Observations from prototyping:

- We created the mould terrarium and veggie sprouting experiments ourselves (because of time constraints), but these activities would be even more compelling if they were set up by the students as part of a longer term project.

**See next page for sample instructions and prompts.**

**Optional: Print the instructions and place them in a T-stand.**



# PLANT OBSERVATION AREA

## **Mould terrarium:**

Look at the glass jars with the food scraps inside. What do you notice?

Can you see any water on the sides of the jar? Where do you think it came from?

## **Vegetable scraps:**

Look carefully at the vegetable and fruit scraps growing in water. Can you see new roots on any of them?

# LEARNING OPPORTUNITY: NATURE BOX



## What it's about:

- Students use magnifying glasses to examine objects in a tackle box filled with a variety of seasonally available materials.

## Materials:

- Tackle box
- Magnifying glasses and black felt cloth (for placing and observing specimens)
- Interesting materials gathered from outdoors, e.g., goldenrod galls; evergreen needles and cones; a variety of twigs with buds, rose hips, burrs, pussy willows and milkweed husks; a wasp nest; etc.

## Try it outside:

- Bring magnifying glasses (or, for older students, a botanist's hand lens) outside to observe nature up close.
- Discuss guidelines, then take students on an outdoor excursion to gather materials for the box. Different habitats may produce unique materials (e.g., a park vs. schoolyard vs. meadow).

## Connections/Extensions:

- Students can help gather materials for the boxes. In an average classroom, if each person brings one object, the box should be full or nearly full.
- For added variety, try adding acrylic-preserved insects to the box.

## Observations from prototyping:

- It was surprisingly easy to find enough specimens to populate the box. All the materials were gathered on a short walk through the Don Valley, and the variety of colour and texture was attractive.
- Burrs tended to stick to the black felt, making it challenging to re-use.
- Fluffy seeds can easily travel throughout the classroom. We enclosed ours in small containers from the craft section of the dollar store.

**See next page for sample instructions and prompts.**

**Optional: Print the instructions and place them in a T-stand.**



# NATURE BOX



## Use the magnifying glass to study the objects

### Can you find . . .

- ✓ A seed that travels in the wind
- ✓ A seed that an animal might eat
- ✓ Something prickly
- ✓ Something fuzzy
- ✓ A bud from a tree
- ✓ A home for an insect
- ✓ A leaf that stays green in the winter
- ✓ Three types of seeds
- ✓ Two types of leaves
- ✓ Something that reminds you of springtime

**Don't forget** to put everything away when you're done!