

Connecting With Nature:

An educational guide for kindergarten



David
Suzuki
Foundation

SOLUTIONS ARE IN OUR NATURE

Connecting With Nature: An educational guide for kindergarten

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Introduction

Two common requests we get at the David Suzuki Foundation are for Dr. Suzuki to speak to schools and for ideas on how young people can help protect nature. Because scientists haven't yet figured out how to clone enough David Suzukis to meet all the speaking requests, we crafted this resource to help educators connect their students to nature, help them understand how their actions can affect it, and empower them to bring about positive change.

There are many reasons why we should be connecting our students to nature outside every day. The eminent biologist E.O. Wilson argued that *biophilia*, our need to affiliate with other species, is built into our genes. You can see biophilia in children — they have an innate curiosity about the natural world around them.

As well, studies have shown that spending time in nature helps with recall and memory, problem solving, and creativity. Children (and adults) who spend more time outside are physically healthier and less stressed.

And finally, if we want to protect the natural world on which our survival depends, we must learn that we are a part of it, and we must encourage our children to appreciate its wonders. As you work through the lesson plans with your students, share your own personal experiences connecting with nature.

Because scientists haven't yet figured out how to clone enough David Suzukis to meet all the speaking requests, we crafted this resource to help educators connect their students to nature, help them understand how their actions can affect it, and empower them to bring about positive change.

The David Suzuki Foundation is a science-based organization committed to helping Canadians act on the understanding that we are all interconnected and interdependent with nature — and each other. Helping young people develop a love of nature is key to achieving that vision.



Connecting kindergarten students to nature

Children need to play — especially outdoors.

Direct, unstructured, and creative contact with nature allows children autonomy over their own outdoor experiences. Such experiences help them gain empathy for nature and their local surroundings, and understand their connections to the natural world.

Outdoor play doesn't take away from other learning — it enhances other learning.

In the following pages, you'll find ideas and activities to help connect kindergarten students with the outdoors through play. These activities have been designed to encourage wonder, curiosity, and discussion.

They can easily be modified for slightly older children as well.

We encourage you to expand upon the ideas presented in this guide by exploring students' interests and wonderings. Start where children are in their learning, and go where their excitement leads you. Ask questions, and enjoy learning together.

In the following pages, you'll find ideas and activities to help connect kindergarten students with the outdoors through play. These activities have been designed to encourage wonder, curiosity, and discussion.





Guidelines and tips for teaching and learning outdoors

When taking classes of young children outdoors, consider these guiding principles:

- Begin with simple experiences
- Focus on experiencing rather than teaching, and on developmental benchmarks for individual students rather than curriculum
- Demonstrate your enjoyment of and respect for the natural world
- Become a co-learner, facilitating learning experiences together with your students

Before heading outdoors, first establish and discuss rules for outdoor learning. You can develop the rules as a class. Revisit and follow them for all lessons. Write them out and post them on the wall.

Here are some example rules:

- Stay together
- Stand inside boundaries
- Stay away from danger
- Work as a team on a task
- No picking, pulling, or pocketing
- Listen for a signal
- Dress for the weather

And here are a few ideas for student assessment:

- Individual portfolios
- Observations of progress and performance
- Student self-reflections
- Narratives of learning experiences

LESSON 1

WHAT YOU NEED FOR PART A:

- Reusable containers
- White glue
- Twist-ties
- Yarn and/or thin rope
- Enough sticks for each student within the schoolyard

LESSON 1

Creating a natural learning space

Guiding question

Within our schoolyard, where can you find nature?

What's the point?

With minimal assistance, students make a mapping stick of nature within their schoolyard — an art piece that demonstrates the parts of nature that are important to them.



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Part A: Outdoors — Creating mapping sticks

What you do

1. At the centre of the schoolyard, set up an “attaching” station. Stock it with reusable containers containing white glue, twist-ties, yarn, and/or thin rope. Depending on class size, recruit adult volunteers to help attaching.
2. Before the program begins, ensure there are enough sticks for each student within the schoolyard. (A stick the length of a forearm is ideal.)
3. Have students search for their own stick within their schoolyard and return to the “attaching” station once they’ve found one.
4. Encourage students to search around the schoolyard looking for natural items of interest. Students will return to the centre to attach their items to their sticks. Try to distinguish between living and non-living things so that students only collect non-living things.
5. If your schoolyard has no greenspace, find a local playground for this activity. If there is nothing around to collect, have students share ideas on how to increase natural materials in the schoolyard.
6. Once students have finished decorating their mapping sticks, invite them to share their findings. Ask them what they would like in their schoolyard. How can you all work toward getting it? Show pictures of different natural learning areas and/or examples of container gardening.



Part B: Outdoors — Further explorations

What you do

1. Ask students if they observed any wildlife in the area and where they spotted it.
2. Encourage students to wonder what might live in a natural learning space and what might be missing.
3. Brainstorm ideas on how to attract more nature into the schoolyard. Record answers.

Reflection questions

Lots of questions will arise as children share their observations. Consider responding to students' thoughts with prompts and questions such as:

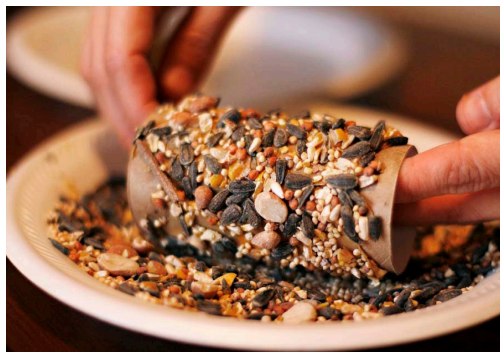
1. "What might happen if you...?"
2. "What might you try instead?"
3. "How do you think that could have happened?"
4. "How do you know?"
5. "Show me what you can do with it."
6. "Tell me about your..."





Taking it further

- Create maps of the natural learning space to identify what might be lacking or what students would like to see.
- Investigate different types of bird feeders students could make. Discuss materials you could collect to help construct feeders. Make the feeders and hang them in the natural learning space.
- Create seed balls with clay, soil, and seeds, and launch them as a class. This will encourage growth of native plant species. (www.kidsgardening.org/sites/www.kidsgardening.org/files/Seed%20Bomb%20Activity.pdf)
- In consultation with your school, create a natural learning area within your schoolyard designed to encourage natural plant growth, habitat for local creatures, and countless days of studying and enjoyment for all who visit the area. Designate this space as “lawnmower-free” to allow plants, animals, and insects to flourish.



Create seed balls with clay, soil, and seeds, and launch them as a class. This will encourage growth of native plant species.

LESSON 2

WHAT YOU NEED FOR PART A:

- Clear plastic bottles or food containers
- Scissors
- Clear tape
- Soil
- Weeds, leaves, and grass from the schoolyard

LESSON 2

Snail farm

Guiding question

What do snails do?

What's the point?

Students learn about the importance of living things, and particularly snails.

Part A: Outdoors or Classroom — Creating a snail catcher

What you do

1. Collect what you need:
 - Clear plastic bottles or food containers
 - Scissors
 - Clear tape
 - Soil
 - Weeds, leaves, and grass from the schoolyard
2. Before the activity, ask students to bring in additional clean, used food containers. Have extra on hand just in case.
3. Whatever the container, seal the top closed with tape.
4. Make a cut in the container about 10 cm long and 5 cm wide along the side, near the bottom.
5. Place soil and weeds, leaves, and grass in the container.





Part B: Outdoors — Snail search

What you do

1. Search for snails within the schoolyard or local natural learning space. Look on leaves, under logs and bricks, and in damp areas.
2. Place snails inside the containers and seal the door shut with tape. Be sure the container has air vents.
3. Watch your snails for a few days. Then return them to their natural settings.

Reflection questions

Lots of questions will arise as children share their observations. Consider responding to students' thoughts with prompts and questions such as:

- "What might happen if you...?"
- "What might you try instead?"
- "How do you think that could have happened?"
- "How do you know?"
- "Show me what you can do with it."
- "Tell me about your..."

Taking it further

- While collecting snails, watch for other living things as well. Create a schoolyard inventory of the many types of living things found.



LESSON 3

WHAT YOU NEED:

- Sticks and other found natural objects
- Camera

LESSON 3

Making art and music in the outdoors

Guiding question

What objects in nature can we use to make art and music?

What's the point?

Students search the schoolyard for natural items to use for art and musical instruments.

Outdoors — Collecting and constructing

What you do

1. Have each student collect three or four sticks to make a picture frame on the ground.
2. Have students search for objects in nature like leaves, twigs, and berries, and arrange them within the frame.
3. Record initial pieces of artwork through digital photography.
4. From the pieces collected, encourage students to construct simple musical instruments. For example, sticks make great percussion instruments.
5. Once instruments are made, have a musical parade through the school and neighbourhood.





Reflection questions

Lots of questions will arise as children search the schoolyard and share their findings. Consider responding to students' thoughts with prompts and questions such as:

- "What might happen if you...?"
- "What might you try instead?"
- "How do you think that could have happened?"
- "How do you know?"
- "Show me what you can do with it."
- "Tell me about your..."

Taking it further

- Have students create nature-based scavenger hunts for each other.
- Have students explain why their natural art pieces are important to them.
- Record their thoughts through notes or voice recordings, and use these to create an art show for the community.



LESSON 4

WHAT YOU NEED:

- Copies of Handout 1 and 2 for each student
- Potted tree or materials for creating an indoor tree (see page 16)

LESSON 4

Adopt a tree

Guiding question

What will happen with our tree over the course of a year (or month or week)?

What's the point?

In this lesson, students explore their schoolyard and the ways in which they can observe nature. By adopting and observing a tree, students learn about changes in nature around them.

Part A: Outdoors — Trees in the schoolyard

What you do

1. Together as a class, explore the schoolyard or a nearby park, investigating the various trees. Notice the similarities and differences between the trees and discuss these. Observe any wildlife in the trees and the area.
2. Have students identify one particular tree and observe all its traits, such as size, colour, shape, leaves, and bark.
3. Pose “I wonder” questions about the tree and encourage students to do the same. Add these questions to the “I wonder” worksheet (see Handout 1: My Tree Observations on page 19).
4. Have the students choose their favourite tree, or as a class, choose one tree for ongoing observation. Record observations in Handout 1. (Note that while worksheets are useful in reflecting or summarizing an activity, they are not meant to promote rote learning. Learning will occur through the observations, play, inquiry, and wonder of each child's experience.)





Part B: Classroom — Make a classroom tree

1. Bring a potted tree (coniferous or deciduous) into your classroom.
2. Use the indoor tree to replicate what's happening to the class's outdoor tree. For example, on a rainy day, create construction paper raindrops and decorate the tree with them. Use this approach as a way for students to track and share their observations throughout the school year.
3. If you'd prefer to build your own tree, here is what you will need:
 - Carpet roll (two metres)
 - Large bucket
 - Sand or gravel
 - Bare branches
 - Plastic leaf vines
 - Brown paint
 - White glue
 - Hot glue gun
 - Drill (optional)
4. Mix the brown paint, glue, and sand together and use this mixture to paint the carpet roll. Let dry. This will be your tree trunk.
5. Place the carpet roll into a large bucket and fill the bucket with sand or gravel.
6. Place various bare tree branches in the top of the carpet roll. You can also cut or drill holes into the side of the carpet roll and secure tree branches in the holes using a hot glue gun.
7. Hang handmade leaves from the branches.



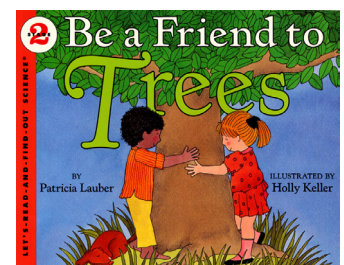
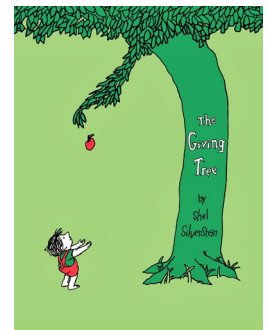
Reflection questions

Lots of questions will arise as children share their observations of their tree. Consider responding to students' thoughts with prompts and questions such as:

1. "What might happen if you...?"
2. "What might you try instead?"
3. "How do you think that could have happened?"
4. "How do you know?"
5. "Show me what you can do with it."
6. "Tell me about your..."

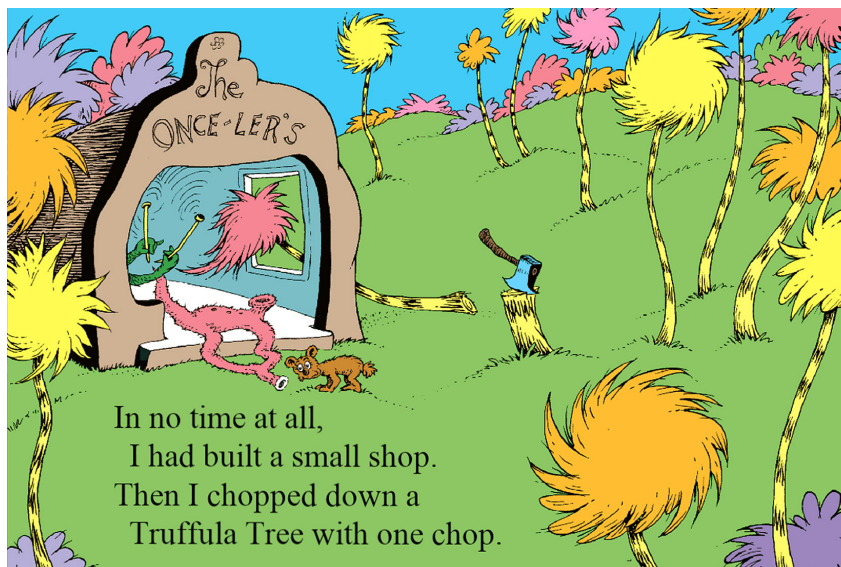
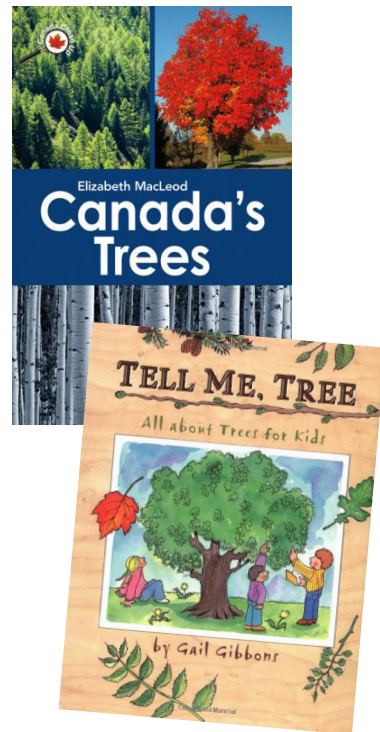
Taking it further

- The class can make the indoor tree change according to the seasons outdoors (see Handout 2: Our Class Tree on page 20). Make notes or have students write observations on decorations such as snowflakes, raindrops, sunbeams, birds, and nests.
- Track changes by creating a photo album or gallery.
- Create binoculars with two toilet paper rolls and have students decorate them. Use binoculars during observations of the tree and for looking closely.
- Explore the paper cycle, and how paper is created from trees. This David Suzuki Foundation article is a good place to start: www.davidsuzuki.org/blogs/panther-lounge/2011/06/the-paper-cycle-where-do-you-fit-in/
- Read aloud from this tree-themed book list:
 - *The Giving Tree* by Shel Silverstein
 - *The Balloon Tree* by Phoebe Gilman
 - *Canada's Trees* by Elizabeth MacLeod
 - *The Tree* by Pascale de Bourgoing and Gallimard Jeunesse
 - *Tell Me, Tree: All about Trees for Kids* by Gail Gibbons
 - *The Tree Book for Kids and Their Grown-Ups* by Gina Ingoglia
 - *The Life Cycle of a Tree* by Bobbie Kalman
 - *Be a Friend to Trees* by Patricia Lauber
 - *Growth of a Tree* by Meish Goldish





- *Very Tall Trees* by Laura J. Bobrow
- *Trees* by Henry Behn
- *Curious Garden* by Peter Brown
- *The Great Kapok Tree: A Tale of the Amazon Rain Forest* by Lynne Cherry
- *The Lorax* by Dr. Seuss
- *Aani and the Tree Huggers* by Jeannine Atkins
- *Gus Is a Tree* by Claire Babin
- *Michael Recycle* by Ellie Bethel
- *Where Once There Was a Wood* by Denise Fleming
- *This Tree Counts!* by Alison Formento
- *The Tree* by Dana Lyons
- *We Planted a Tree* by Diane Muldrow
- *Big Bear Hug* by Nicholas Oldland
- *My Mom Hugs Trees* by Robyn Ringgold
- *Just a Dream* by Chris Van Allsburg
- *In the Trees, Honey Bees* by Lori Mortensen



FROM *THE LORAX* BY DR. SEUSS



My tree observations

I noticed...

I wonder..



Our class tree

<p>Fall tree</p>	<p>Winter tree</p>
<p>Spring tree</p>	<p>Summer tree</p>



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About us

Over 60 staff in offices across Canada work to help further the foundation's goals. We work with government, business, and individuals to conserve our environment by providing science-based education, advocacy, and policy work, and act as a catalyst for the social change that today's situation demands.

Our mission and vision

Our mission is to protect the diversity of nature and our quality of life, now and for the future.

Our vision is that within a generation, Canadians act on the understanding that we are all interconnected and interdependent with nature.

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Download other education guides in the *Connecting With Nature* series at **getbackoutside.ca**

Our top goals

Protecting our climate — ensure that Canada is doing its fair share to avoid dangerous climate change and is on track to achieve a safe level of greenhouse gas emissions.

Transforming the economy — make certain that Canadians can maintain a high quality of life within the finite limits of nature through efficient resource use.

Protecting nature — work to protect the diversity and health of Canada's marine, freshwater, and terrestrial creatures and ecosystems.

Reconnecting with nature — ensure that Canadians, especially youth, learn about their dependence on a healthy environment through experiential education outside.

Building community — engage Canadians to live healthier, more fulfilled, and just lives with tips on building Earth-friendly infrastructure, making smart energy choices, using efficient transportation, and being mindful of the products, food, and water we use.

