

Learning for a Sustainable Future

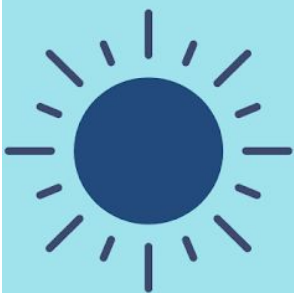
LEARNING



INSIDE



OUT



Educator-reviewed

SECONDARY RESOURCES

from R4R.ca

learn more: bit.ly/learning-inside-out

Learning Inside Out Activities for **Grades 9-12**

Title	Theme	Grade Level	Activity Type	Description/Links
1. The Hidden Beauty of Pollination	Step Outside: Spring Awakenings	7-12	Video	<p>Watch this TED Talk by Louie Schwartzberg, creator of the film "The Hidden Beauty of Pollination." Together, come up with a list of questions the video made you think of. Then research the answers!</p> <p>For example:</p> <ul style="list-style-type: none"> • How did plants and pollinators co-evolve? • How does the decline in pollinators impact us? • What is causing the pollinator decline and what can we do about it?
2. Introducing The Global Goals	UN SDGs: Intro to the Sustainable Development Goals	7-9	Hands-On Activity	<p>Check out our interactive lesson adaptation of The Introduction to The Global Goals .</p> <p>This lesson adaptation gives students an overview of the global goals, features Malala's introduction to the Global Goals, and invites students to envision a better world by drawing a comic strip that may address some problems facing their community.</p>
2. From Issue to Opportunity	UN SDGs: Intro to the Sustainable Development Goals	9-12	Hands-On Activity	<p>This resource includes several follow up games & quizzes that give students an opportunity to assess their understanding of the 17 SDGs!</p>
2. SDG in Action App	UN SDGs: Intro to the Sustainable Development Goals	9-12	Apps, Games and Other Tools	<p>This mobile app serves as a go-to place for information, updates and progress reports regarding the 17 Sustainable Development Goals . Students can set preferences to receive the latest news on only those goals that are of particular interest to them. For students and teachers looking for easy and immediate access to descriptions and targets for all of the goals and to find out what's being done locally and globally to achieve them, this app should be of particular interest.</p>
3. Are we Disturbing Birds?	Step Outside: Bird Alert	4-12	Outdoor Activity	<p>Explore how human activities are impacting bird habitats with a walk around your neighbourhood to spot construction projects or development sites. If physical distancing prohibits this, students can use their existing knowledge of the area and focus on the research element.</p>

				See activity instructions here.
<u>3. Snow Geese: A Species and Ecosystem in Peril</u>	Step Outside: Bird Alert	9-12	Hands-On Activity	<p>With short readings, a video, questions and activities, kids will look at the evolution, diversity and sustainability of an ecosystem. In this case, they will explore factors leading to the explosion in the snow goose population and evaluate potential management solutions.</p> <p>To complete this activity:</p> <ol style="list-style-type: none"> 1. Print the Lesson PDF (you can also view the PDF online for reference and complete the activities on blank paper) 2. Complete Questions 1-3 3. Watch this short documentary 4. Complete Questions 4 - skip the class discussion in 4.i 5. Complete Question 5 - Read the InfoZone and review the list of possible solutions. Rank the solutions and justify your ranking. Which are most/least feasible? Which could have the most/least impact? Why?
<u>4. That Which Once Was</u>	UN SDGs: Earth Week! SDG 13 - Climate Action	9-12	Video	<p>This powerful story connects students to the effects of climate change and more specifically to the plight of environmental refugees. Set in 2028, an eight-year-old Caribbean boy, displaced by global warming, fends for himself in a hostile Northern metropolis and forms an unexpected friendship with an Inuk ice carver.</p> <p>The video is supported by a detailed lesson plan that helps students explore the link between the lives of the two persons who are the focus of the video and global warming.</p> <p><i>Note: the link to The Tsunami & Cherry Blossoms Video in the preparation questions and suggestions for this lesson is broken. You can find the trailer here</i></p>
<u>5. Your Ecological Footprint</u>	UN SDGs: SDG 12 - Responsible Consumption & Production	7-10	Hands-On Activity	<p>An ecological footprint measures your impact on the environment. It takes all our needs into account (food, shelter, transportation, goods, services, etc.) and then calculates how much area of the earth is needed to support these needs. If everyone lived like the average Canadian, we would need more than 3.5 Earths to support our needs! Calculate your own footprint and explore opportunities for action.</p> <p>For activity instructions, click here</p>

<p>5. Lessons from the Past</p>	<p>UN SDGs: SDG 12 - Responsible Consumption & Production</p>	<p>9-12</p>	<p>Hands-On Activity</p>	<p>You may recognize the iconic statues of Easter Island, but you may not know the dramatic story of the island's rise and fall. No one really knows what happened to the inhabitants, but many believe that population growth, the introduction of invasive species and overconsumption of resources eventually led to the collapse of the whole society. Some say this makes it a metaphor for what could happen to humanity as a whole if we don't change our habits.</p> <p>Learn more about this mysterious piece of history and the lessons it has to teach us about our current way of life! Watch the Explore Easter Island video, then read the "Paradise Found" story by Andrew Nikiforuk. Finally, research and answer the discussion questions on p. 13 (p. 2 of the PDF).</p>
<p>6. Bird Blitz</p>	<p>Step Outside: Decoding Loon Language</p>	<p>6-12</p>	<p>Outdoor Activity</p>	<p>Schoolyard Bird Blitz from Birds Canada is an annual citizen science event. This year, they're making the shift to Bird Blitz: At Home so everyone can participate! Spring is a great time to spot bird activity in your neighbourhood, whether you can go outside, or just observe from your window or balcony.</p> <p>To complete the activity:</p> <ul style="list-style-type: none"> • Enter your region to download your personalized Bird ID guide featuring the most common birds in your area this time of year • Print or recreate a Bird Tally Sheet to record your observations • Complete your bird observations on any day in May—you can do them as many days as you like, for as little as 1 hour, or all day! • Optional: become a citizen scientist and submit your observations to Birds Canada to contribute to their data! Even if you don't submit your observations, you can see the data here.
<p>6. Could we Rid the World of Mosquitos</p>	<p>Step Outside: Decoding Loon Language</p>	<p>10-12</p>	<p>Video</p>	<p>As insect season begins in many parts of our country, let's take a look at this often-asked question!</p> <p>First, watch this video .</p> <p>Then summarize:</p> <ul style="list-style-type: none"> • reasons why we would want to rid the world of mosquitoes

				<ul style="list-style-type: none"> • how this might be accomplished <p>The video highlights the CRISPR gene drive as the biotechnology “tool of choice” for eradicating mosquitoes. Can you explain:</p> <ul style="list-style-type: none"> • How the technology works • What problems it solves that were inherent in earlier-used techniques • What concerns are created by its use <p>Watch this short presentation, then complete this chart .</p> <p>Finally: what do you think, should we rid the world of mosquitoes?</p>
7. Explore and Embrace a Special and Wild Place	UN SDGs: SDG 15 - Life on Land	6-10	Hands-On Activity	<p>With these activities the students discover their own special wild spaces, where they can explore their relationship with the outdoors and develop an appreciation for the natural world.</p> <p>See activity instructions below: Activity 1: Discover and Explore a Special Place here. Activity 2: Protecting Our Special Places</p>
7. Trees Water and Peace	UN SDGs: SDG 15 - Life on Land	10-12	Hands-On Activity	<p>We invite students to explore the interconnections that exist between trees, water, peace, sustainable development and democracy through literature and real events and people around the world.</p> <p>First, we invite students to read and consider the themes in the story The Man Who Planted Trees, and find parallels to Wangari Maathai's Green Belt Movement.</p> <p>For Activity Instructions, click here.</p>
8. There’s a Hair in My Dirt	Step Outside: International Day for Biological Diversity	7-12	Book	<p>This book by Far Side Comics creator Gary Larson may be funny, but it contains an important lesson about how our perceptions of nature often influence how we care for it and that there is a difference between loving nature and understanding it.</p> <p>Start by reading the book (keep an eye on the illustrations for hidden cartoons!).</p>

				Check out the discussion questions and follow-up outdoor activity .
9. The Heat is On	UN SDGs: SDG 7 - Affordable and Clean Energy	7-12	Hands-On Activity	<p>Through these activities, students will differentiate between correlation and causation within the context of global climate change. Using critical thinking skills and analyzing data sets students will investigate the causes behind temperature increases in a fictitious town called Solutionville, as well as around the globe. These activities will help students make connections between temperatures and carbon dioxide levels and guide students to think about the role that humans play in these changes.</p> <p>Activity 1: Cause and Effect and Climate For activity instructions, click here.</p> <p>Activity 2: What's the deal with fossil fuels</p> <ul style="list-style-type: none"> • Watch this video • Complete these discussion questions <p>Activity 3: Neighbourhood walk</p> <ul style="list-style-type: none"> • Keeping in mind social distancing and taking actions to keep yourself and others safe, go on a walk around your neighbourhood and record examples of fossil fuel use vs. green energy and record it in this chart.
10. What's Happening to the Honey Bees	Step Outside: Canadian Environment Week	9-12	Book	<p>Honey bee operations are in sharp decline throughout North America and Europe. Many large beekeeping operators are reporting that up to 40 or 50 percent of their swarms have mysteriously disappeared. Let's explore the implications of this decline, the possible causes, and the reactions by farmers and governments.</p> <p>Activities:</p> <ol style="list-style-type: none"> 1. Watch the video 2. Complete the analysis and discussion 3. Step outside and go on a pollinator hunt! Check out this list of Canadian pollinators and their preferred plants, and use this Pollinator Garden Scavenger Hunt on your search!

<p>11. Redesigning Plastics</p>	<p>UN SDG's: SDG 14 - Life Below Water</p>	<p>9-12</p>		<p>Single-use plastics are part of a linear economy: a straight line from production to disposal that results in an environment full of waste! What lessons can we learn from nature about how to eliminate waste and close the loop?</p> <p>Use this guide to work through the "Redesigning Plastics" slide show.</p> <p>To illustrate one disturbing example of the need to rethinking our plastics economy, view this short video: "Midway - A Message from the Gyre." Please note that you might find this program difficult to watch.</p>
<p>12. Bugs Clues to the Environment</p>	<p>Step Outside: Early June</p>	<p>7-12</p>	<p>Hands-On Activity</p>	<p>Several of the Spring/Summer Step Outside Nature Guides point out that while some can be especially annoying, insects play extremely important roles in aquatic ecosystems. As the weather warms and water levels fall, spring is an excellent time of year to explore the diversity of macro-invertebrate life found in nearby lakes, streams and ponds.</p> <p>This resource involves students in a bio-monitoring project of a local waterway. Aquatic invertebrates are known to exhibit different tolerances to pollution and as a result are commonly used to assess the health of aquatic ecosystems and monitor changes in water quality!</p> <p>Materials: A small net (aquarium net is fine) is really all the 'equipment' required. A magnifying glass is helpful but not essential as the macro-invertebrates are large enough that you can see the identification features with the naked eye.</p> <p>Find the activity instructions here.</p>
<p>13. Yukon Kings</p>	<p>Hot Topic: National Indigenous Peoples Day</p>	<p>9-12</p>	<p>Video</p>	<p>Set in the remote Alaskan Yukon Delta, Yukon King follows Yup'ik fisherman Ray Waska as he teaches his grandchildren how to fish during the summer salmon run. With environmental and cultural forces threatening their subsistence way of life, Roy holds onto the hope that his grandsons will one day pass on the traditional knowledge to their children.</p>

				<p>The video is accompanied by a lesson plan, Resiliency Among the Salmon People , that is intended to encourage student reflection on and discussion about this specific case of cultural loss and more generally the inevitability of change as society pursues "progress".</p>
--	--	--	--	--