

# **Grade 4 Science - Earth Systems**

## **Activity #1**

### **How Are We Connected to the World Around Us?**

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Duration: 60 minutes

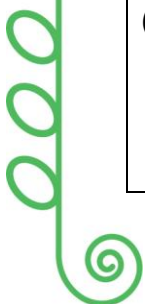
Objective	Overview:
<p>By the end of the activity, students should be able to:</p> <ul style="list-style-type: none"><li>- Understand how all things are connected</li><li>- Understand the First Nation, Metis and Inuit perspective on interconnectedness</li><li>- Understand how the Earth provides opportunity for life</li></ul>	<ul style="list-style-type: none"><li>- This activity introduces students to the concept of how the Earth supports life on our planet. Students will explore how different Earth systems are connected to each other and how they need to be respected. Through discussions, demonstrations, and hands-on activities, students will gain a deeper understanding of the connection of Earth systems as well as the First Nations, Metis and Inuit perspective.</li></ul>

Science Guiding Question	Learning Outcome
How does Earth sustain life?	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
Knowledge	<ul style="list-style-type: none"><li>- First Nations, Metis and Inuit hold understandings of Earth systems that sustain life, including that all things are interconnected.</li></ul>
Understanding	<ul style="list-style-type: none"><li>- Earth's surface is warmed by the Sun, allowing for life.</li></ul>
Skills and Procedures	<ul style="list-style-type: none"><li>- Describe the importance of the amount of sunlight and warmth on a variety of organisms.</li></ul>

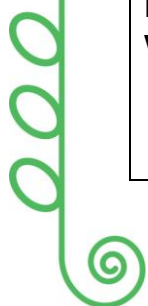
ELA Guiding Question	Learning Outcome
In what ways can listening and speaking skills clarify intent and build relationships?	Students examine and demonstrate how listening and speaking support connections and clarify understandings.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>- Oral traditions can support connections to               <ul style="list-style-type: none"> <li>-people</li> <li>-the community</li> <li>-the natural world</li> <li>-the constructed world</li> </ul> </li> <li>- Respectful interactions include behaviours that consider the contributions, feelings, point of view, and needs of participants.</li> </ul>
<b>Understanding</b>	<ul style="list-style-type: none"> <li>- Oral traditions can connect the speaker and listener in experiences of the past or present that help prepare for the future.</li> <li>- Listening and speaking skills can be applied and adapted to support respectful interactions.</li> </ul>
<b>Skills and Procedures</b>	<ul style="list-style-type: none"> <li>- Describe personal connections to spirit, land, universe, time, or people revealed through oral traditions.</li> <li>- Discuss protocol used to share oral traditions.</li> <li>- Contribute respectfully to a variety of interactions that involve listening and speaking.</li> </ul>

Teacher Materials	Student Materials	Safety Concerns
White boards, markers, Chromebooks	Pencils, markers, paper	Appropriate use of technology

Timing	Instructional Element	Student Tasks
<b>Introduction</b>  Starting in a Good Way  (15 minutes)	<ul style="list-style-type: none"> <li>- Talking Circle Prompt: How are we connected to the world around us? Think about living and non living things.</li> <li>- Pose the question and ask the student on the left to be the first to respond. The teacher may encounter student responses such as: We eat animals and plants, we drink water, we build with wood, etc</li> <li>- As the teacher is to respond last, summarize what students have shared and consolidate with what the</li> </ul>	<ul style="list-style-type: none"> <li>- Participate in talking circle</li> </ul>



	<p>teacher would like the students to know. Highlight how everything in the world is interconnected.</p> <ul style="list-style-type: none"> <li>- See link below for classroom talking circle guidelines: <a href="#">Talking Circle Pedagogy</a></li> </ul>	
<p><b>Development</b></p> <p>Weaving Knowledge (15 minutes)</p>	<ul style="list-style-type: none"> <li>- Small group discussion:</li> <li>- In random groups of three, at vertical non-permanent surfaces (white boards) students will discuss and record their thinking.</li> <li>- Prompt: Teacher displays a variety of pictures such as domestic animals, wild animals, plants, water, Sun and rocks. <b>See accompanying doc: “Prompts - Pictures”</b></li> <li>- Teacher asks students to write down and discuss how they are connected to these images.</li> <li>- Teacher will observe and listen to student thinking by visiting the small groups at the student whiteboards.</li> <li>- Teacher can bring the whole group together to highlight the common themes that came up in the small group discussions, while also drawing attention to the perspectives of First Nations, Métis, and Inuit peoples. Helpful Link: <a href="#">Indigenous Connectivity</a> / <a href="#">Indigenous Pedagogy</a> / <a href="#">Connectivity</a></li> <li>- See the links below for more information about thinking tasks, random groupings and vertical non-permanent surfaces in the classroom.</li> <li>- Learn more about the positive impact of small group student-led discussions <a href="#">here</a>.</li> <li>- <a href="#">Building Thinking Classrooms Practices</a></li> </ul>	<ul style="list-style-type: none"> <li>- Students use white boards to write their understanding.</li> <li>- Students participate in small group discussions.</li> <li>- Students listen to the teacher as a part of the large group discussion.</li> </ul>
<p><b>Independent Work</b></p>	<ul style="list-style-type: none"> <li>- Choice Board: Indigenous Worldview-Interconnection</li> <li>- Choice Boards require student access to an internet connected device to access the resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Students prepare their choice board for their given</li> </ul>



<p>Gathering Knowledge</p> <p>(15 minutes)</p>	<p>Students work independently to complete the choice board.</p> <ul style="list-style-type: none"> <li>- If students don't have access to laptops or Chromebooks, they can use their phones to access resources through the scan code version of the provided choice boards.</li> <li>- Choice Boards are built to provide student choice while learning. Students choose one plant to get to know, one video to watch and one method to share their thinking.</li> <li>- Students will choose one living or non living factor and describe how this factor is connected to other living and nonliving factors.</li> <li>- Helpful Links: <ul style="list-style-type: none"> <li><a href="#">Interactions Between Living and Non-Living Things   [Abiotic &amp; Biotic Factors]</a></li> <li><a href="#">The Web of Life</a></li> <li><a href="#">How are we connected</a></li> </ul> </li> <li>- Learn more about the positive impact of providing choice boards to shift from transfer of information to student discovery <a href="#">here</a>.</li> <li>- <a href="#">How</a> to create choice boards for students.</li> </ul>	<p>Earth system factor.</p>
<p><b>Conclusion:</b></p> <p>Sharing knowledge</p> <p>(10 minutes):</p>	<ul style="list-style-type: none"> <li>- Invite a few students to share some of their findings about the interconnection between Earth systems. Display learning maps so students can reflect on their</li> <li>- level of understanding.</li> </ul> <p>See accompanying <b>"Introduction and Learning Maps"</b></p>	<ul style="list-style-type: none"> <li>- If selected , students will present the information that they have found about how different Earth system factors are interconnected.</li> </ul>