



## ***Stories of Climate Change Education***

Toronto District School Board - Climate Literacy & Leadership Program 2025

### **Land-Based Learning:**

### **Increasing student engagement through cross-curricular, embodied and land-based learning experiences**

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With gratitude to the Teachers who taught us about maples, clay, language and stories and the Medicine Wheel, including Nokomis Heather Chijiinweh, Torie Gervais, Dani Harris, Jo-ann Archibald, and [7generations.org](https://7generations.org). Thank you also to Kirsten Williamson, for her partnership in this cross-curricular learning. Chi Miigwetch to our students for their participation and thoughtful reflections!



#### **Learning Outcomes:**

- Students came to understand the ecological role maple trees embody, not only as providers of food but as leaders in the forest community—teachers of generosity, timing, and balance. Through practices of identification, tapping, sap gathering, and boiling, students engaged in a reciprocal relationship of respect and gratitude, learning to take only what is freely given and to give back in kind.
- Students deepened their awareness of clay as both soil and story—an element that holds the memory of

#### **Climate Concepts and Actions:**

- Interdependence and Systems Thinking:** Understanding maple trees as leaders in forest ecosystems highlights ecological relationships, feedback loops, and the importance of biodiversity in maintaining resilience to climate change.
- Reciprocity and Sustainability:** Learning to engage with maple trees through respectful tapping and sap collection emphasizes reciprocal human–nature relationships, a cornerstone of climate justice and sustainable resource use.
- Traditional Ecological Knowledge (TEK) and Multiple Ways of Knowing:** Practices of tapping, boiling, and clay vessel-making embody Indigenous and land-based knowledges, positioning them as essential alongside scientific approaches to addressing climate change.
- Material Cycles and Earth Systems:** Recognizing clay as a soil component connects students to geologic and ecological cycles,

<p>water, stone, and time. By shaping clay into vessels inspired by birch baskets, they practiced the art of listening to materials, honoring the gifts of the earth, and recognizing the interweaving of function, beauty, and tradition.</p>	<p>carbon storage in soils, and the role of earth materials in shaping human and ecological life.</p> <ul style="list-style-type: none"> <li>• <b>Cultural Connection and Place-Based Learning:</b> Creating clay vessels inspired by birch baskets emphasizes the role of culture, story, and creativity in sustaining human–nature relationships in a time of ecological crisis.</li> </ul>
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## Learning Activities

In partnership with art and language teacher Kirsten Williamson

- **Stories and Language**

Students engaged with traditional stories about birch, clay, and maple, deepening cultural understanding and ecological knowledge. They also practiced Anishinaabemowin vocabulary connected to these themes, fostering both language learning and place-based connections.

- **Outdoor Learning**

Students identified and tapped maple trees, monitored and collected sap daily, and recorded sensory observations throughout the two-week collection period. They sampled schoolyard soils to test sedimentation rate, pH and particle size. During a nature walk, students honourably harvested birch bark for use in later projects, offering tobacco at each stage to give thanks and respect for gifts from Mother Earth.

- **Culminating Projects**

Together, students tended a fire to boil sap into syrup. Drawing on their knowledge of birch and clay, they crafted clay vessels modeled on birch baskets, following traditional Indigenous design methods. Students shaped, fired, glazed, and refired their creations before bringing them home as meaningful representations of their learning.

### Lessons Learned:

At the heart of my work is a quotation from Senegalese forest scientist [Baba Dioum](#): “*In the end, we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught.*” From this, I have learned two essential truths for teaching:

- **It must be relational** — students need to prepare their hearts first, so that knowledge is grounded in care.
- **It must be local** — learning must be rooted in the places where we live, so that responsibility grows from relationship with the land around us.

By entering into relationship with maple, birch, and clay, we came to know them as teachers and kin. These encounters deepened our sense of belonging and gratitude, nurturing responsibility for the land that sustains our learning and our lives.

### Key Resources:

- Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants by Robin Wall Kimmerer
- Treaty Guide for Torontonians by Talking Treaties Collective
- Ohèn:ton Karihwatéhkwen: (The words that are spoken before all others) The Haudenosaunee Thanksgiving Address