

Embed Indigenous Perspectives into Your [K-12 Science] Framework

From First Brush Strokes to a Full Mural:
Expanding Your View of Indigenous
Knowledges

by Peggy Janicki, Indigenous Mentor Teacher

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October 2, 2025



Éy Swáyél Sí:yá:ye/Good Day Friends,

Welcome to my introductory document, "Embed Indigenous Perspectives into Your [K-12 Science] Framework." While this guide is not meant to be prescriptive, I aim to provide valuable tools that you can adapt to suit your needs. I have organized these tools along a spectrum, ranging from small and thoughtful perspectives to comprehensive and transformative scholarship. The painting tools represent my message: the fine detail paintbrush, the medium brush, and the large paint roller. The paint roller symbolizes the works of Indigenous scholars I have had the honour of studying during my Master's degree and my explorations to gain deeper understandings. So, have a glance and paint away.*

My hope is to centre "Land & Water movement" within the context of science education. As stated by the Faculty of Environment and the Water Institute at the University of Waterloo, "The Land Back movement has called for global solidarity to address the oppression and dispossession of Indigenous Peoples' lands and territories" (Faculty of Environment & Water Institute, University of Waterloo, 2023, June 5). And that's what I hope to do, by simply mentioning it here, I begin opening space for these critical conversations in the classroom.

Building on this movement, Dr. Kelsey Leonard, alongside an international group of Indigenous researchers, have offered a definition of Water Back for Water Research (2023):

For the Indigenous author team, for communities, and within the primarily English-language, Indigenous-oriented and -produced research, Water Back means the return of Water and kin to Indigenous governance in a way that empowers the resurgent Indigenous Water relationships that are integral to Indigenous cultural, biological, spiritual and political sovereignty; this includes cosmogony, ceremony, access, law and policies. Water Back in this way is allowing Water to rematriate relationships with Indigenous Peoples, the Lands that are nourished by Water, and the more-than-human relatives that live within and care for Water. Water Back is the restoration of humanity's responsibility to care for Water and the recognition of Indigenous Peoples' inherent relationships, connections, rights and responsibilities to Water.

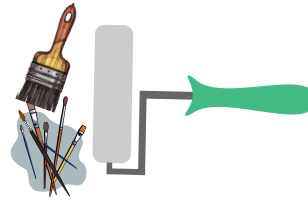
The key to understanding Indigenous science, in the context of this curriculum, lies in advocating or at least learning about the safe return of land and water or appropriate compensation to Stó:lō governance and communities. It also involves a critical examination of the the limitations inherent in the concept of "braiding" Indigenous knowledges (Todd, 2024). For full quotation, please refer to Appendix, page 108.

Sincerely,

Peggy Janicki, Indigenous Mentor Teacher

M.Ed. UBC: Indigenous Knowledges/Indigenous Pedagogies

*in hopes to make this text more accessible, I have chosen "Open Dyslexic" for titles and sub-titles and "Tahoma" for body of text where possible.



The Overview in 3 Parts

The Detail Brush: Beginning ideas

Brush 1, Understanding Nature's Signals & Salmonberries

Brush 2, Place-based Knowledge & The Cedar Story

Brush 3, Everything is Alive & Shxwelí

Brush 4, Balance & Good Heart Good Mind

Brush 5, Feel empathy & Shifting P.O.V.

Brush 6, Placed-based Knowledge & Syiló:lém
Halq'eméylem Seasons

Detail Brush: Appendix 1



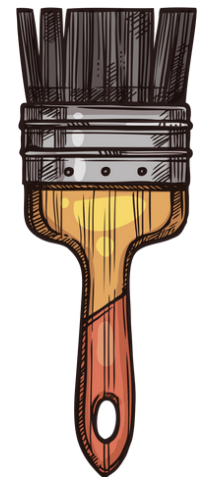
The Large Brush: Larger in ideas and scope

Large Brush 1: Re-flooding Sumas Lake (Secondary)

Large Brush 2: Stó:lō Sitel Stories (Primary to
Secondary)

Large Brush 3: 5 R's of Indigenous Research & write a
self-location statement (Middle to Post-
Secondary)

Large Brush: Appendix 2



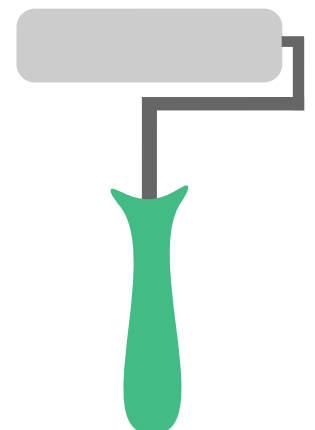
The Roller: Indigenous Science in post secondary

Roller 1: Theme: What is Land Back?

Roller 2: Theme: Why I do not use "Braiding
Sweetgrass"

Roller 3: Reference & Resource List with links

Roller: Appendix 3





The Detail Brush: Beginning ideas

Detail Brush 1, Understanding Nature's Signals & Salmonberries

Detail Brush 2, Place-based Knowledge & The Cedar Story

Detail Brush 3, Everything is Alive & Shxwelí

Detail Brush 4, Balance & Good Heart Good Mind

Detail Brush 5, Feel empathy & Shifting P.O.V.

Detail Brush 6, Placed-based Knowledge & Syiló:lém Halq'eméylem
Seasons

Detail Brush: Appendix 1

Embed Indigenous Perspectives into Your [Science] Framework



The Detail Brush: Beginning ideas



screenshot of cover
(Snively & Williams, 2016)



screenshot of page 1
(Lantz & Turner, 2003)

In this section “Detail Brush: Beginning ideas”, I explore Indigenous science through the lens of **Knowing Home: Braiding Indigenous Science with Western Science, Book One**, edited by Gloria Snively and Wanosts’a7 Lorna Williams (2016), and **Traditional phenological knowledge of Aboriginal peoples in British Columbia** by Trevor C. Lantz & Nancy J. Turner (2003). These academic yet accessible texts provide a framework for my understanding how Indigenous ways of knowing and Western science can complement and enrich each other. Using an integrated approach, each brush will begin with a key guiding quote from either resource, grounding my learning in academic scholarship before engaging in lesson ideas, hands-on activities, and/or reflections. This method ensures that Indigenous knowledge is not just an addition but a fundamental perspective in shaping my understanding of the Indigenous Worldviews/Sciences.

**Integrated Approach =
Guiding Quote + Lesson/Ideas**





Detail Brush 1, Understanding Nature's Signals & Salmonberries

Guiding Quote

— “ —

Phenology is the study of the seasonal timing of life cycle events (Rathcke and Lacey 1985) of organisms. In temperate regions seasonal development is relatively predictable, occurring primarily in response to accumulated heat, and photoperiod. Since phenological events generally occur in a reliable sequence, the occurrence of one event indicating the imminence of another, phenology can be used to time resource related activities. Aboriginal peoples have long recognized these phenological indicators and Traditional Phenological Knowledge (TPK) is evident throughout Traditional Ecological Knowledge and Wisdom (TEKW).

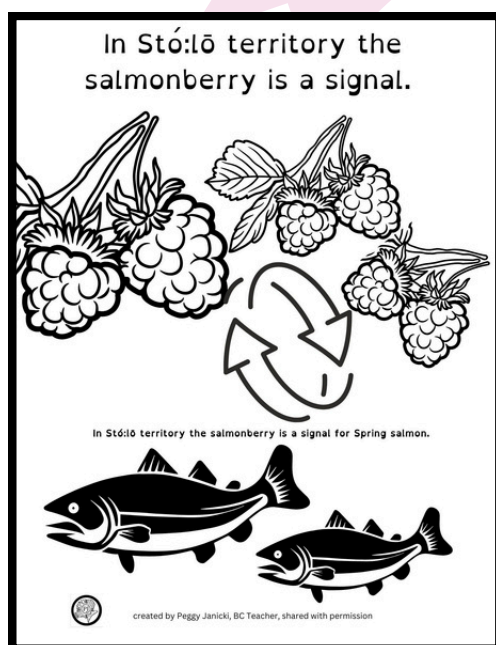
(Lantz & Turner, 2003)

— ” —



Lesson/Idea

This science worksheet, “In Stó:lō territory the salmonberry is a signal”, invites students to observe and identify regional phenological indicators, deepening their understanding of how natural events signal important seasonal activities.



This science worksheet “In Stó:lō territory the salmonberry is a signal” is an extension of the FNEC Science 5-9 curriculum (2016), designed to connect to Stó:lō Territory. While the larger and very comprehensive FNEC curriculum provides broad Indigenous science frameworks; this extension focuses on local knowledge, land-based learning, and Stó:lō perspectives. It encourages students to identify local phenological indicators.

Find student page in **Detail Brush: Appendix 1**

Reference

First Nations Education Steering Committee. (2016). Science First Peoples 5-9. FNEC. Retrieved from <https://www.fnesc.ca/wp/wp-content/uploads/2015/08/PUBLICATION-61496-Science-First-Peoples-2016-Full-F-WEB.pdf> (PDF download, 231 pages)

Lantz, T. C., & Turner, N. J. (2003). Traditional phenological knowledge of Aboriginal peoples in British Columbia (Abridged version). Originally published in *Journal of Ethnobiology*, 23(2), 263–286. Abridged version retrieved from <https://ou.edu/cas/botany-micro/ben/lantzturner-revised.pdf> (link to PDF download, 6 pages)





Detail Brush 2, Place-based Knowledge & The Cedar Story



screenshot of cover,
(Snively & Williams, 2016)

Guiding Quote



Place-based Knowledge

According to Christie (1991), “the most fundamental principles taught by Indigenous Elders is that our subject matter is to be examined and interpreted only as it is found embedded within its context. This is in marked contrast with WS where environmental influences are considered confounding” (p. 29) and where scientists do their most serious work most often in an indoor laboratory. Indigenous peoples closely identify with their ancestral lands because of their deep associations with their resources and because of their long-term occupation of particular areas—probably thousands of years (Turner, 1997, 2005). Everything is connected in a web of relationships. Nothing exists in isolation. Indigenous people over millennia have strived to live in harmony with all living things in their environments. They learned the rhythms of each being in their ecosystems and how each life form, including their own, depends on each other and becomes another. Science knowledge amongst Indigenous people is not taught as a pre-planned lesson, but learned through working and walking alongside the older more experienced family or community members. (Chapter 3, p. 34 Snively & Williams, 2016)



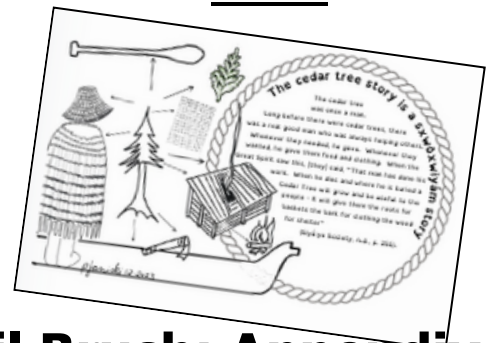
Lesson/Idea

Here are approaches you might consider when facilitating this activity with you students:

1. Compare and Contrast Indigenous Science and Western Science
 - a. Create a T-chart listing differences in how knowledge is gathered
 - i. example: Indigenous Science emphasizes learning within nature, while Western Science often isolates variables in a lab.
 - b. Discuss how might these approaches influence understanding
2. Learn by Doing: an Outdoor Observation
 - a. Take students outside to observe an environment (schoolyard, park, garden)
 - b. Encourage students to make observations
 - c. Relate this to Indigenous learning: How does direct experience differ from reading about it?
3. Oral Storytelling
 - a. Share the Stó:lō Cedar Tree Story (found in **Detail Brush: Appendix 1**)
 - b. Compare it with a science textbook explanation of the same topic.
 - c. Discuss, how does storytelling embed knowledge in context?
4. Apprenticeship Model of Learning
 - a. Ask students, What skills have you learned by watching and doing rather than being taught in a lesson? (eg. cooking, fixing a bike, etc).
 - b. Discuss how Indigenous knowledge is passed down through experience and relationships, rather than in structured instructions.
 - c. Show a portion of the "Cedar Harvesting Video" on [Vimeo](#)



QR Code goes to Vimeo Video
"Cedar Harvesting Video"



Find pages in **Detail Brush: Appendix 1**

Key Points about connecting Indigenous stories and science:

- Connect observations to understanding the environment. Indigenous stories detail plant and animal behaviours that demonstrate a keen observation of the world over long periods of time.
- Stories are shared across generations, preserving knowledge about the environment and one's obligations that may not be captured in written form.
- Indigenous Worldviews have a wholistic perspective. Unlike Western science which often focuses on individual elements, stories like the cedar tree view the environment as interconnected and across time, where all living things are part of a complex connection.
- Stories have helped validate scientific findings about past events, such as large earthquakes, by providing oral accounts of events.
- Stories offer lessons about respectful engagement. When studying Stó:lō knowledge systems, it is important to engage with Stó:lō communities respectfully, acknowledge their expertise, and their connection to land & water. For example, Stó:lō communities understand that the cedar tree shares teachings around generosity and caring.
- Stories have **legal** environmental connections, for example, "Stories Relied On to Articulate Tsleil-Waututh Legal Principles in Section 8" [of a larger Report] (Treaty, Lands & Resources Department of the Tsleil-Waututh Nation, n.d.).
- Stories have "transform[ed] the legal landscape of Canada" (Grass, 2025, p. 21).

Reference

Grass, S. J. (2025). *Singing into the machine: Indigenous futurisms and the hermeneutics of Indigenous identity and agency in educational institutions* (Doctoral dissertation). Simon Fraser University,

Snively, G., & Williams, Wanosts'a7 L. (Eds.). (2016). *Knowing Home: Braiding Indigenous Science with Western Science*. Victoria, BC: University of Victoria is used under a CC-BY-NC-SA 4.0 International License, except where otherwise noted. Retrieved from <https://pressbooks.bccampus.ca/knowninghome/> (Online, open-access textbook).

Treaty, Lands & Resources Department of the Tsleil-Waututh Nation. (n.d.). *Assessment of the Trans Mountain Pipeline and Tanker Expansion Proposal*. Tsleil-Waututh Nation. Retrieved from <https://twnsacredtrust.ca/assessment-report-download/> (link to website).



Detail Brush 3, Everything is Alive & Shxwelf



screenshot of cover,
(Snively & Williams, 2016)

Guiding Quote

“

A Living Conscious Universe

In the Indigenous world, everything of Mother Earth possesses a spirit. This spirit is conscious and has awareness—the wind, water, stars, frogs, rocks, smoke, people, cedar trees, salmon, and killer whales possess a spirit. Everything in the universe lives and has its own place (Cajete, 1999, 2000; Deloria, Jr., 1995; Kawagley, 1999; Little Bear, 2009). In the Andean life-world, the relationship between nature and humans is familial and full of feeling: “**Everything in the world is alive**, everything is a person, everything speaks. Nature has a voice. Nature expresses itself through signs” (Ishizawa & Rengifo, 2009, p. 68). If you are going to gain knowledge over something you have to look after it; to make yourself ready to have that knowledge, you must form a respectful and positive relationship with self and everything around you. This expression of the relationship between humans and nature is shared with Indigenous peoples on every continent. Humans cannot place themselves before or above other life forms.

”

(emphasis added, p. 34, Snively & Williams, 2016)



Lesson/Ideas

Here is an approach you might consider when facilitating this activity with your students:

Begin with Mission Public Schools land acknowledgement:

Mission Public School District is located on the Traditional, Ancestral, Unsurrendered, and Shared territories of Stó:lō people, of Leq'á:mel, Semá:th, Máthxwi, Sq'éwlets and Qwó:ltl'el First Nations, stewards of this land since time immemorial.

Halq'eméylem is the language of this land and of Stó:lō ancestors. The place from where Halq'eméylem (Upriver dialect) originates is Leq'á:mel. The language comes from the land, and it has been this way since time immemorial.

(Mission Public School District, n.d.)

Introduce the word Shxwelí (see poster found in Detail Brush: Appendix 1):

- Begin by reading definition and listening to sound file.
- Discuss the importance of understanding words in Halq'eméylem, as they carry deep meanings and tied to culture and worldview.

Discuss:

- ask students to reflect on the idea that everything is alive. How does it change the way one sees animals, plants, rocks around them?

Reflect:

- ask students to draw or write about nature they feel connected to. They could consider their favourite tree, a river, a camping spot, or an animal.
- ask students if this word shows that humans are above nature or in relationship to it?



Find poster in **Detail Brush: Appendix 1**

Reference

Mission Public School District. (n.d.). Siwal Si'wes Indigenous Education Services. Mission Public School District. Retrieved from <https://www.mpsd.ca/Schools/OtherPrograms/Indigenous/Pages/default.aspx#/>

Snively, G., & Williams, Wanosts'a7 L. (Eds.). (2016). *Knowing Home: Braiding Indigenous Science with Western Science*. Victoria, BC: University of Victoria is used under a CC-BY-NC-SA 4.0 International License, except where otherwise noted. Retrieved from <https://pressbooks.bccampus.ca/knowninghome/> (Online, open-access textbook).



Detail Brush 4, Balance & Good Heart-Good Mind



screenshot of cover,
(Snively & Williams, 2016)

Guiding Quote



Focus on Balance and Harmony

The Elders teach that plants, animals and the elements are embraced by Indigenous peoples as kin and are given an active role in the production of knowledge. Amongst the Nisga'a of British Columbia (BC), for example, if you observe the Bear Teacher in the woods, you will know what you can eat and what you cannot eat. It turns out that the physiology of bears is similar to that of humans, so if a bear will not eat a particular berry, it is likely also poisonous to humans. Taking more than you need upsets the balance of nature. Unlike WS [Western Science], which tends to emphasize dominion and control over nature, IS de-emphasizes one's sense of self-importance in the web of life. Indigenous people give thanks for all life, to the sun, water, wind, earth, animals, plants, and minerals. This simple practice helps humans live in harmony and balance. If everything is interconnected, **what you do to the part affects the whole**. A common practice before entering the forest to hunt or dig roots or before setting out in a boat on the water is to stop and consciously remove feelings of anger, all negative feelings, so that those negative energies don't upset the balance. **Humans have a role and responsibility in maintaining the balance within themselves**, the family, the community, the earth and the cosmos.

(emphasis added, p. 35, Snively & Williams, 2016)



Lesson/Ideas

Here is an approach you might consider when facilitating this activity with your students:

Begin with Mission Public Schools land acknowledgement (see page 12).

Open with Inquiry Question "How do our emotions and thoughts affect our relationship with others and the world around us?"

Introduce "Good Heart, Good Mind" posters (found in Brush: Appendix 1)

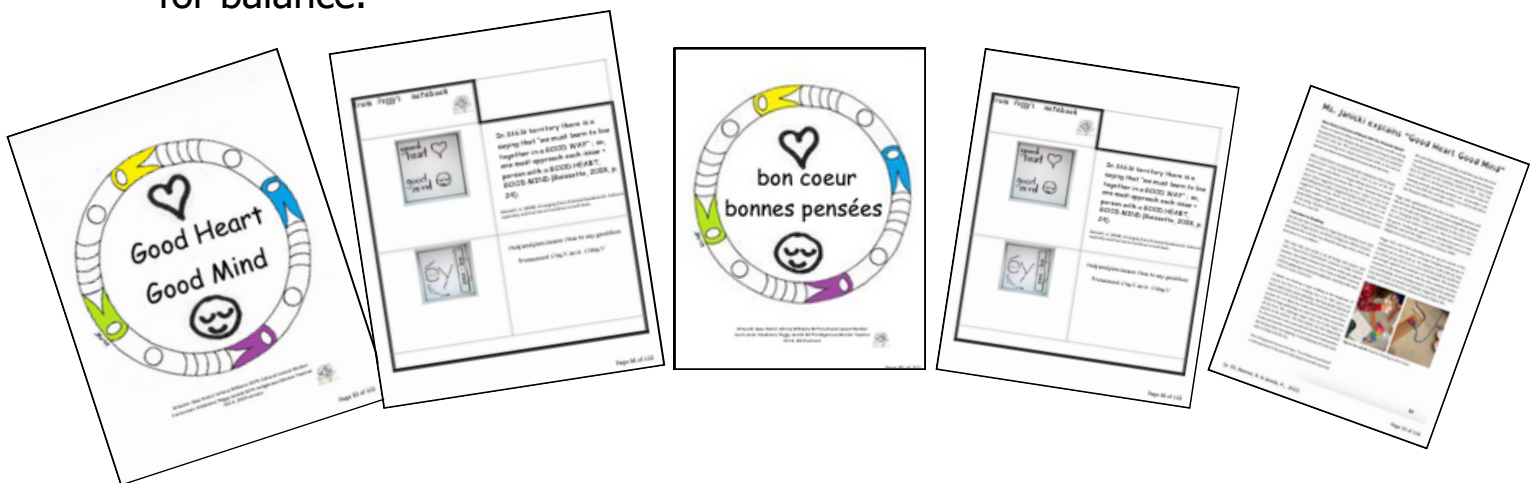
- explain that in Stó:lō territory there is a tenant of having a good heart, approaching life with kindness, gratitude, and respect. A good mind, thinking with respect, understanding, and awareness of responsibilities.
- read "Ms. Janicki explains 'Good Heart Good Mind'": Detail Brush Appendix 1
- relate this to lesson's quote about harmony in Indigenous knowledge, emphasizing that humans are part of a greater web of life.

Discuss Quote:

- How does gratitude and respect help maintain balance?

Activity:

- Make a nature observation reflection. Ask students to quietly observe a natural element (plant, tree, sky, etc) for a few minutes, then write or draw what they notice and how it made them feel.
- Try a mindfulness practice: Guide students through a short breathing or gratitude exercise where they reflect on their emotions and set an intention for balance.

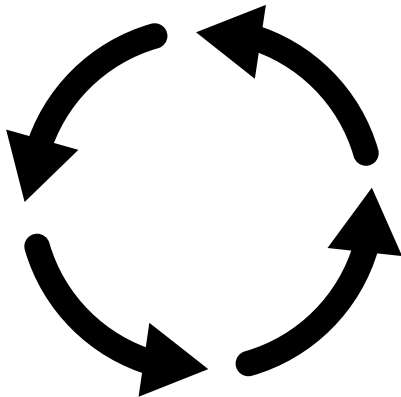


Find posters and story in **Detail Brush: Appendix 1**

Important Design Elements to “Good Heart Good Mind” Posters



The trigon is a closed negative shape with three curved sides and three points, sometimes like a curved 'T' or 'Y' shape.



Symbolic meaning to trigon direction: The direction is counter clockwise and reflects the direction used when inside a local longhouses. People are seated and direction of ceremonies are conducted in a counter clockwise manner.



Symbolic meaning to colours: The colours used are not the colours used in a Medicine Wheel: red, yellow, black, and white. It is to indicate that Stó:lō communities did not traditionally have a medicine wheel or medicine wheel teachings.

Reference

Stenner, R. , & Janicki, P. (2022). Beading on a Loom: Exploring the mathematics. Journal of the British Columbia Association of Mathematics Teachers, 63(1), 30-37. Retrieved from <https://drive.google.com/file/d/1FL8r5Fo6dsrO37vwmZV0MKoNk7XkF6z-/view>. (PDF download, 76 pages)

Snively, G., & Williams, Wanosts'a7 L. (Eds.). (2016). *Knowing Home: Braiding Indigenous Science with Western Science*. Victoria, BC: University of Victoria is used under a CC-BY-NC-SA 4.0 International License, except where otherwise noted. Retrieved from <https://pressbooks.bccampus.ca/knowninghome/> (Online, open-access textbook).



Detail Brush 5, Feel empathy & Shifting P.O.V.



(screenshot of cover,
Snively & Williams, 2016)

Guiding Quote



Learning is Relational

More than any other single concept, it is the notion of respect for all life forms and the land itself that characterizes Indigenous belief systems. Vine Deloria, Jr., noted Lakota scholar (1986), discussed the principle of power and place relationships:

Here, power and place are dominant concepts—power being the living energy that inhabits and/or encompasses the universe, and place being the relationship of things to each other ... the universe is alive, but it also contains within it the very important suggestions that the universe is personal and, therefore, must be approached in a personal manner The personal nature of the universe demands that each and every entity in it seek and sustain personal relationships. Here, the Indian theory of relativity is much more comprehensive than the corresponding theory articulated by Einstein and his fellow scientists. The broader Indian idea of relationship, in a universe very personal and particular, suggests that all relationships have a moral content. For that reason, Indian knowledge of the universe was never separated from other sacred knowledge about ultimate spiritual realities. The spiritual aspect of knowledge about the world taught the people that relationships must not be left incomplete. There are many stories about how the world came to be, and the common theses running through them are the completion of relationships and the determination of how this world should function. (as cited in Colorado, 1988, p. 52)

As Deloria, Jr. says, “the universe is alive.” Therefore, to see a child speaking with a tree does not carry the message of mental instability. On the contrary, this is a child engaged in coming to know the connections of the universe and **to feel empathy with another** living entity. The ability of teachers to introduce multiple sensory experiences and understandings of how people make sense of the interconnections of the planet allow opportunities for all students to explore and discuss the cultural or environmental aspects of science, which is often missing in the teaching of science.

(emphasis added, p. 38-39, Snively & Williams, 2016)



Lesson/Ideas

Here is one approach you might consider when facilitating this activity with your students, particularly as an extension to your lesson on scientific observation:

Open with discussion and start with quote from Deloria Jr. "The universe is alive".

Ask "What does this mean? Have you ever felt connected to a place, plant, tree, animal?"

Discuss how Indigenous knowledge systems recognize non-human beings as teachers and relatives.

Introduce "Shifting POV" worksheet (see Brush: Appendix 1).

- explain that students will complete a worksheet to document observations from a different point of view (POV).
- students will go outside (or observe from window) and choose a natural element to observe (tree, bird, plant, parking lot, fence, etc).
- they then empathize with birds, deer, fish, and plants and imagine their observations of the chosen element.

Observation time:

- have students quietly observe their chosen subject for at least 5 minutes.

Group reflection:

- invite students to share their observations
- discuss, what can we learn from non-human beings? how can we apply these lessons to caring for the environment and each other?



Find student page in **Detail Brush: Appendix 1**

Reference

Snively, G., & Williams, Wanosts'a7 L. (Eds.). (2016). *Knowing Home: Braiding Indigenous Science with Western Science*. Victoria, BC: University of Victoria is used under a CC-BY-NC-SA 4.0 International License, except where otherwise noted. Retrieved from <https://pressbooks.bccampus.ca/knowninghome/> (Online, open-access textbook).



Detail Brush 6, Placed-based Knowledge & Syiló:lém/Halq'eméylem Seasons



screenshot of cover,
Snively & Williams, 2016)

Guiding Quote

— “ —

One of the most influential messages that Indigenous Knowledge carries for all of us is to create and sustain bonds of kinship with the place where we live—the land, rivers, forest, oceans, water, rocks, fire, and air around us. The berry-picking season, the return of the salmon, the birth of a child, the blossoming of wild crabapples, are just a few examples of natural events that humans celebrate through dance, music, ceremony and stories. Every place has its own set of seasonal events that nature unfolds every year, and creating a seasonal wheel is one of the easiest and most effective teaching tools to help students have a relationship with their home-place. Developing a seasonal wheel is a highly adaptable project suited for classes of various sizes, grade levels and cultural backgrounds. (p. 149, Indigenous Science Curriculum, Snively & Williams, 2016)

— ” —

(Snively & Williams, 2016, p. 149))

Lesson/Ideas

Here is one approach you might consider when facilitating this activity with your students:

The guiding quote invites you to “Create Your Own Seasonal Wheel”. And although I appreciate the creative process as anyone else, you may find Halq’eméylem Seasons completed by others. For example, here are the 4 seasons in Halq’eméylem, the language of the Stó:lō peoples, https://youtu.be/7PaEo1HieZs?si=0LHquj9To3cyn0p_

Introduction:

- Begin with land acknowledgment (see page 13).
- Ask Inquiry question, What are the four seasons? How do they affect the land, animals, and people?

Share video “Syiló:lém”

- Introduce the Halq’eméylem words for the seasons

Seasonal Wheel Activity:

- Provide students with a blank circle divided into 4 sections.
- Have students label each section with Halq’eméylem words for the seasons
- Have students draw or write something representing each season (weather, activities, plant/animal changes).

Share & Reflect:

- Students share their seasonal wheels in small groups



(Screenshot of video, Janicki, 2025)



Find student page in **Detail Brush: Appendix 1**



QR Code and link to YouTube video “ Syiló:lém”

Retrieved from https://youtu.be/7PaEo1HieZs?si=0LHquj9To3cyn0p_

Reference

Janicki, P. (2025, February 23). Syiló:lém Halq’eméylem Seasons 2025 [video]. YouTube. Retrieved from https://youtu.be/7PaEo1HieZs?si=0LHquj9To3cyn0p_ (Video with captions, transcripts, or audio descriptions available).

Snively, G., & Williams, Wanosts’a7 L. (Eds.). (2016). *Knowing Home: Braiding Indigenous Science with Western Science*. Victoria, BC: University of Victoria is used under a CC-BY-NC-SA 4.0 International License, except where otherwise noted. Retrieved from <https://pressbooks.bccampus.ca/knowninghome/> (Online, open-access textbook).

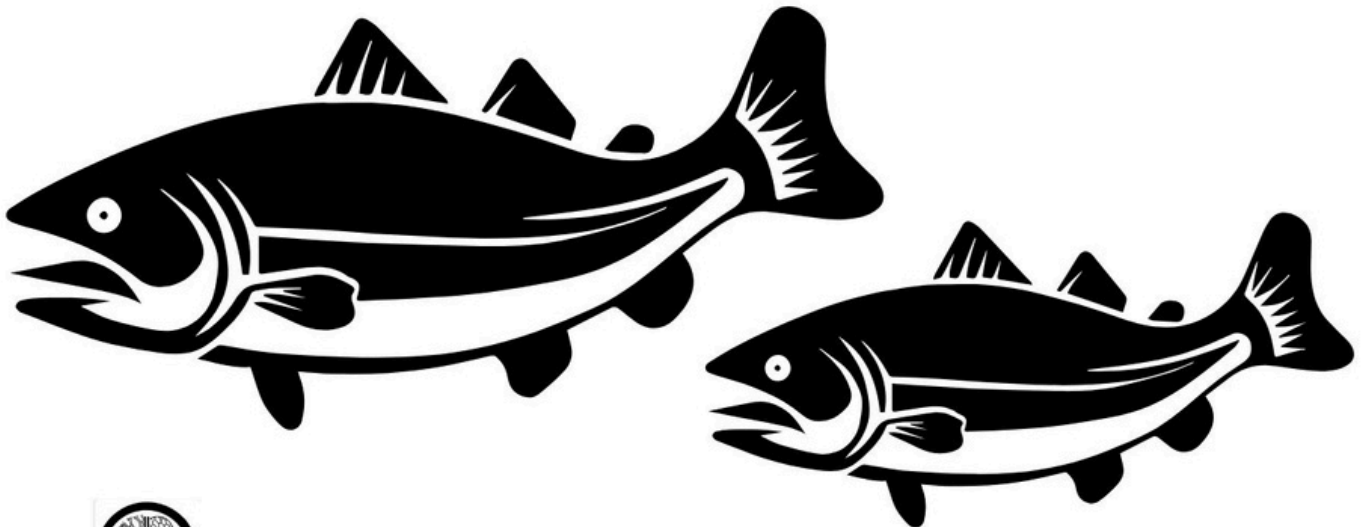


Detail Brush: Appendix 1

In Stó:lō territory the salmonberry is a signal.



In Stó:lō territory the salmonberry is a signal for Spring salmon.



Stó:lō Territory page & original art by Peggy Janicki, shared with following permissions, This work is licensed under [CC BY-NC-SA 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/)



Name/Nom: _____

List as many signals as you can:




This means That

EXAMPLE

Fall leaves mean back-to-school time.

Stó:lō context for Science lesson from FNESC Science First Peoples Teacher Resource Guide (Gr. 5-9) (2016), pp. 44-49). Retrieved from <https://www.fnesc.ca/wp/wp-content/uploads/2015/08/PUBLICATION-61496-Science-First-Peoples-2016-Full-F-WEB.pdf>

Page 22 of 120 



Hear the word "xpá:yelhp"

from <https://stoloshxweil.org/units/word/791/>



Listen to the story in Halq'eméylem.



Stó:lō Shxw'el'
Halq'eméylem Language Program

from <https://stoloshxweil.org/units/4/>

Reference

Original artwork: Peggy Janicki and shared permission.

Photo credit: Peggy Janicki and shared with permission.

Booklet design: Peggy Janicki and shared with permission.

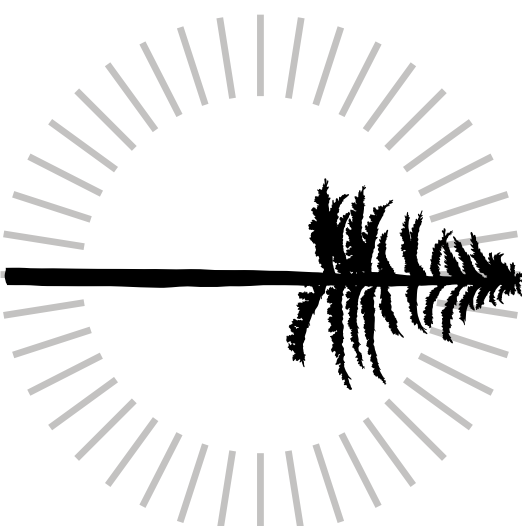
Story of cedar tree is from "9000 Years of History in the Land of the River People: The Stó:lō : From Time Immemorial" shared with permission as long as not used commercially.

"This resource was developed by the Siyá:ye Society to support educators in meeting provincial and locally developed aboriginal curriculum. It was developed to help ensure that teaching and learning with respect to First Peoples in British Columbia is based on authentic knowledge and understanding, as articulated by Elders and other educators. (p. 5)

[Permission is granted to use and/or photocopy from this resource, for educational purposes only, provided that every effort is made to involve local Elders and educators in the presentation of included material and ensure connections are developed and maintained between the classroom and local First Peoples communities or organizations." (Limited Permission to Photocopy document, n.d. Siyá:ye Society) Retrieved from <https://swwilibrary.files.wordpress.com/2016/06/unit-3-module-1-cedar.pdf>

xpá:yelhp

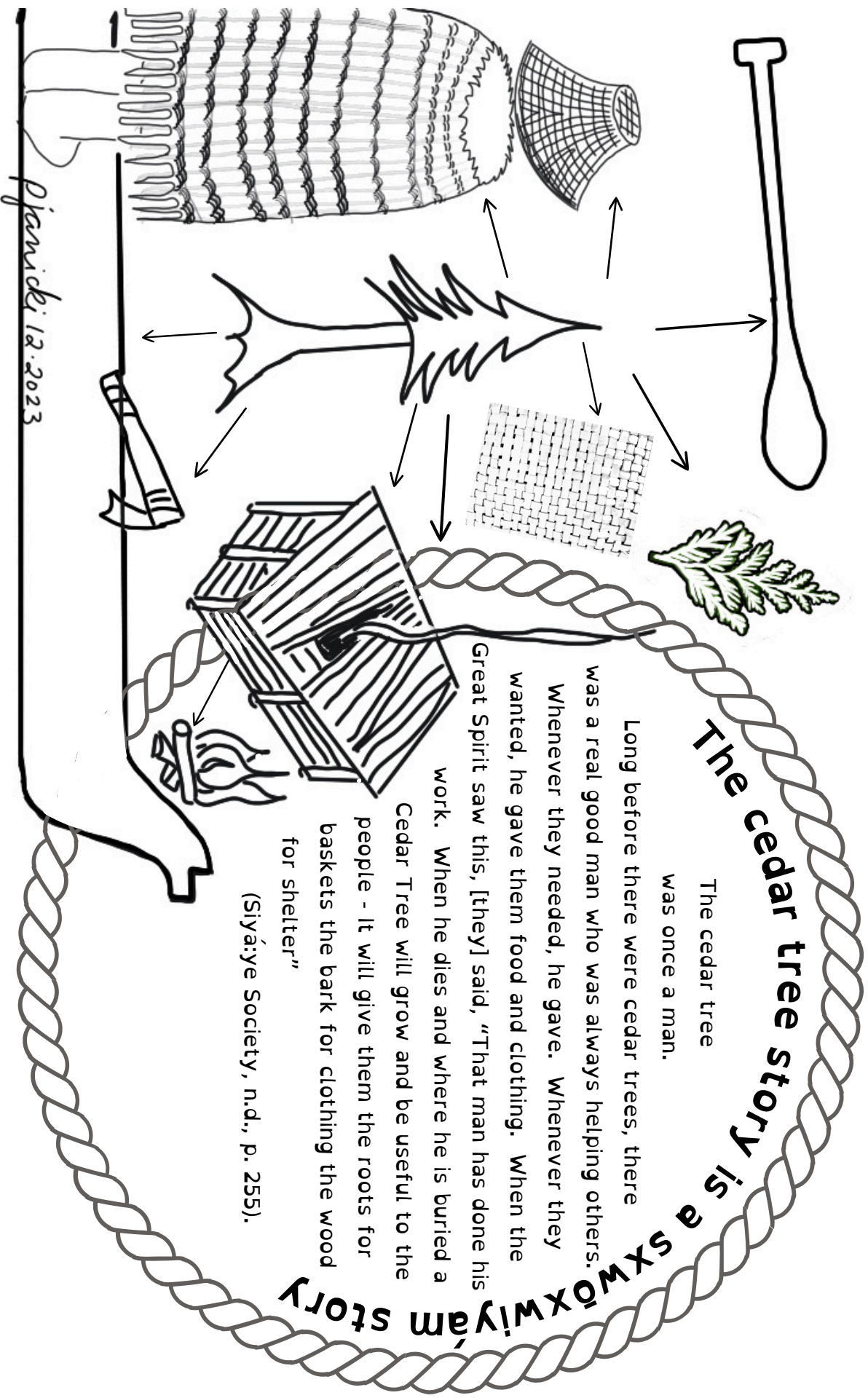
Western red cedar tree



I gather the basic information I need and present it. (Profile 3)

I acquire the information I need for specific tasks and for my own interests and present it clearly. (Profile 4)

Name: _____



shxwelí

"All beings in the Lower Fraser hold shxwelí/ šx^wəlí, a life force that connects them to each other, the Chíchelth Siyám / cicəł siʔém' , ancestors and the territories of the Lower Fraser",

"The connection between all beings along the Lower Fraser is that of shxwelí / šx^wəlí, which is, a 'life force or spirit'" (p. 9, 2021, Lower Fraser Fisheries Alliance).

Photo credit: Peggy Janicki, Indigenous Mentor Teacher, shared with permission



QR Code and link go to Halq'eméylem language website "Stó:lō Shxwelí"

<https://stoloshxweli.org/units/word/13828/>

QR Code and link go to Summary Report "Revitalizing Indigenous Law"

<https://static1.squarespace.com/static/66140d7c69ae140a8d2ff6da/t/66e3b89c1f10a851d1a041a7/1726199980778/Summary.pdf> (PDF download, 76 pages)

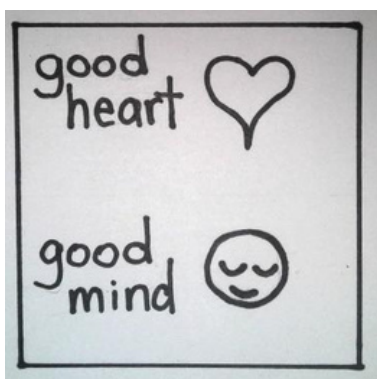




Artwork: Qwa Honn/ Johnny Williams SD75 Cultural Liaison Worker
Curriculum: Kilaksten/ Peggy Janicki SD75 Indigenous Mentor Teacher
Oct 4, 2019 version

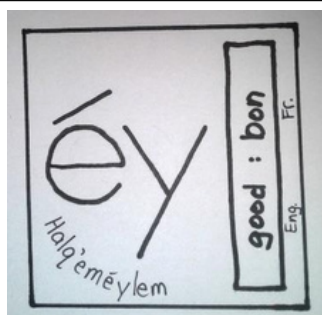


from Peggy's notebook



In Stó:lō territory there is a saying that "we must learn to live together in a **GOOD WAY**" ; so, one must approach each issue + person with a **GOOD HEART**, **GOOD MIND** (Boissette, 2008, p. 24).

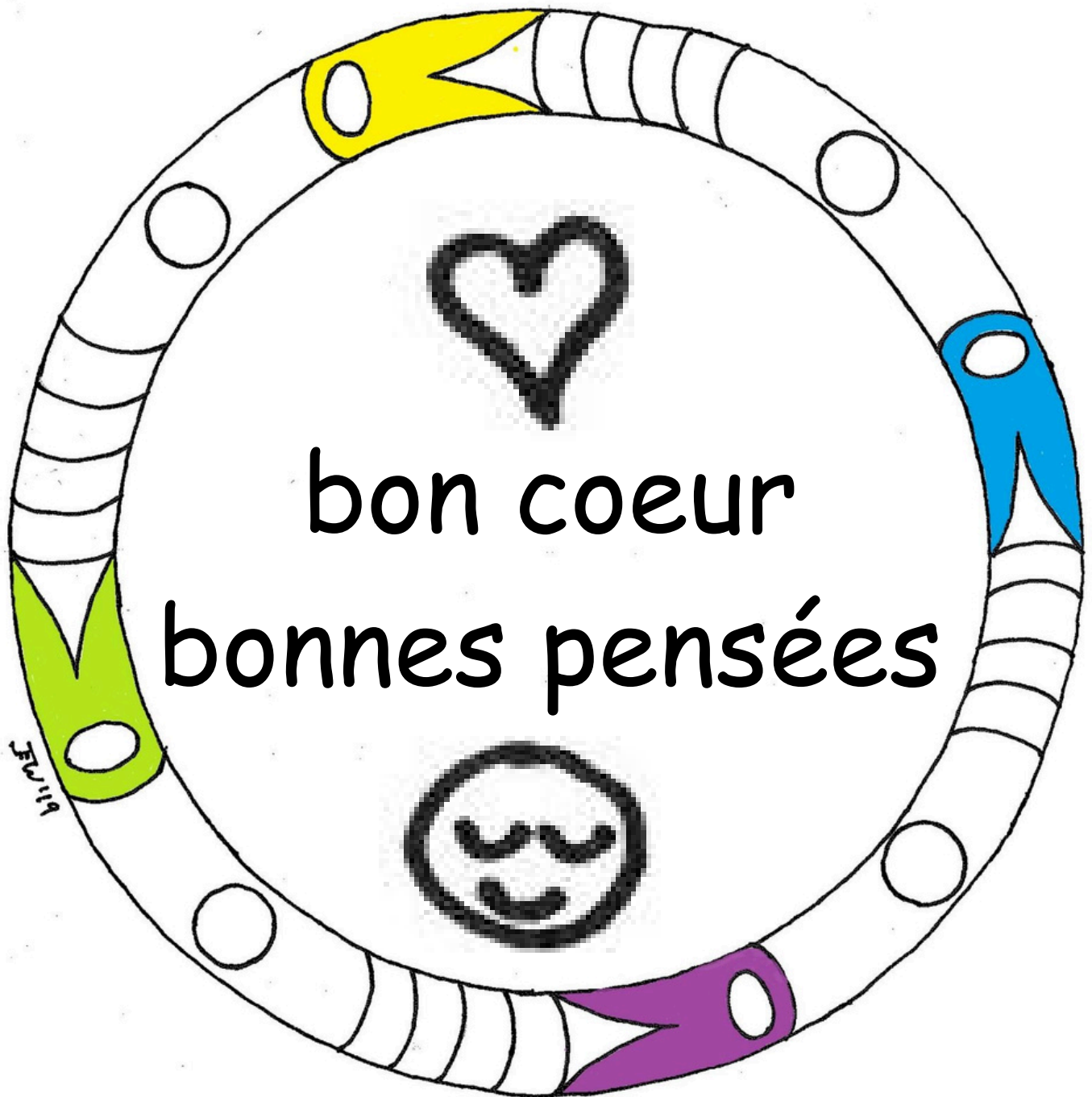
Boissett, A. (2008). Emerging from Colonial Quicksands: Cultural Hybridity and the Sto:lo transition to Self-Rule.



Halq'eméylem lesson: How to say good/bon

Pronounced //ay// as in //day//

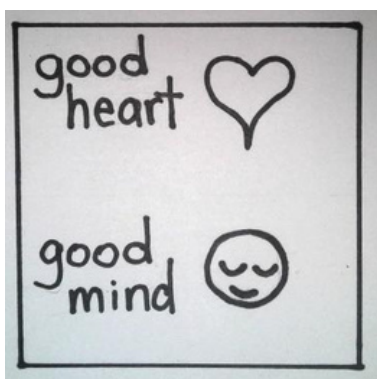




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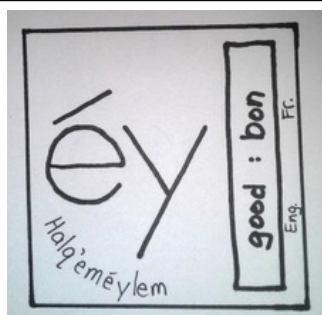


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Halq'eméylem lesson: How to say good/bon

Pronounced //ay// as in //day//



Ms. Janicki explains “Good Heart Good Mind”

How Many Columns of Beads Will Our Bracelet Need?

When we started talking with the students about actually making bracelets from their designs, the question of how long to make their bracelets came up. This question seemed to create an authentic need for learning some simple measurement skills. In the end, we did not use these measurements but more about that later.

After a brief lesson on measuring with centimetres (direct linear measurement using standard metric units is part of the BC mathematics curriculum), we began talking about how we could measure something non-linear, like a wrist. Students had great ideas! Some suggested measuring the four “sides” of your wrist and adding them, others suggested using a bendy ruler, and some suggested using string, which was the method we chose in the end. Each student was given a small piece of string and used it to mark off the length of their wrist. They then measured that section of the string. Teachers checked measurements and then recorded them on a class list.

Transition to Beading

On the day that we planned to begin having students work with the looms, Peggy Janicki, our district Indigenous Mentor Teacher, introduced the work that was ahead by sharing a story, which she introduces to us as follows:

The tenet that one needs to do all things with respect and with a “Good Heart Good Mind” continues to today in Stó:lō territory. The Chief of Sts’ailes First Nation, at the time, shared many teachings and stories at a First Nations Health Authority (FNHA) gathering at Semá:th Longhouse. And this is the story I share in many classrooms:

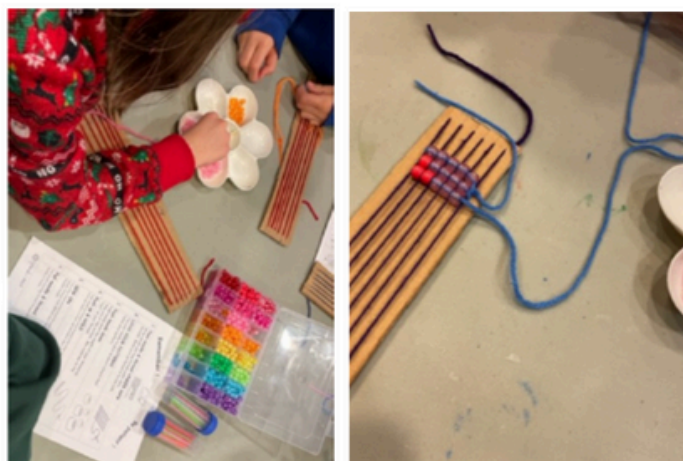
A family was hosting a large wedding in the longhouse. If anyone has been to a wedding that is for 500+ guests you know that it takes much planning. The host family had hired important Cooks for the day and they had arrived very early to prepare. So, very likely the Cooks arrived at 5am because I have helped at large gatherings too and it all takes time to prepare all the food. The challenge began when the Cooks began to quarrel in the kitchen. The host family saw this happening. So, they took the Cooks aside and said that they are wonderful Cooks and that they need to go home and come back another day because they were arguing. A second group of Cooks were asked to help with the day.

This all happened because having a “Good Heart Good Mind” is still important. If the upset Cooks stayed, it would mean that

the quarreling and upset feelings would then go into the food and the food would be served to all the guests and participants. The guests would, in turn, have negative feelings which would have an impact on the wedding ceremony itself. Also, this tenet transfers to all things one may create not just beadwork: weaving, artwork, metalwork, projects, etc. As an adult, I can attest to the difficulty and rigor of this tenet and would add to any Research Ethics Committee review.

Peggy adds capitalization in the story to denote importance and title of *Cooks*. She shared with me that western, English punctuation does not fit well with Indigenous worldviews (Cole, 2006, Stewart, 2015, Younging 2018). *Cooks*, as presented in this story, have a key role in Coast Salish sovereign law—they are entrusted to feed the guests. Feeding the guests is an introductory part to Coast Salish law and sets the stage, as it were. Coast Salish laws are the obligations to the land and ceremonies (Hanson, 2008).

Peggy, Judy, and I had a beading area set up just outside of the classrooms so after the story, we began bringing small groups of students out to work with us. We wanted to work with the class as a whole group, but we were concerned that students would not get enough support and could get very frustrated. The teachers remained in the classes to work with the other students, but they were not beading. At our beading station, we helped the students warp their looms, tie on the weft threads (Figure 6a), thread their needles, and load the first few columns of beads (Figure 6b).

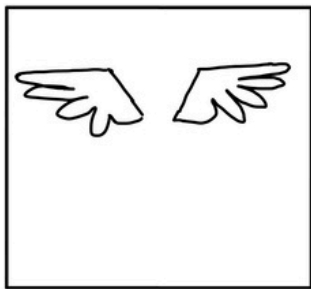


Figures 6a and 6b: Students beading on their looms

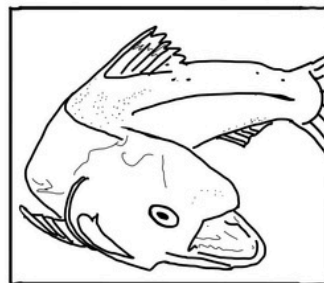
Shifting P.O.V. (Points of View) Observation Page

Name/Nom: _____

Block: _____

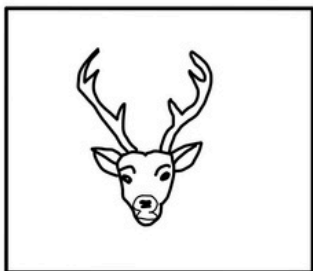


Put your wings on and make
observations from a bird's pov

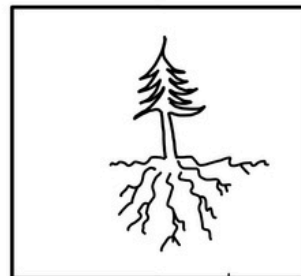


Put your fins on and make
observations from a fish's pov

your topic being observed:



Put your hooves on and make
observations from a deer's pov



Put your roots on and make
observations from a plant's pov

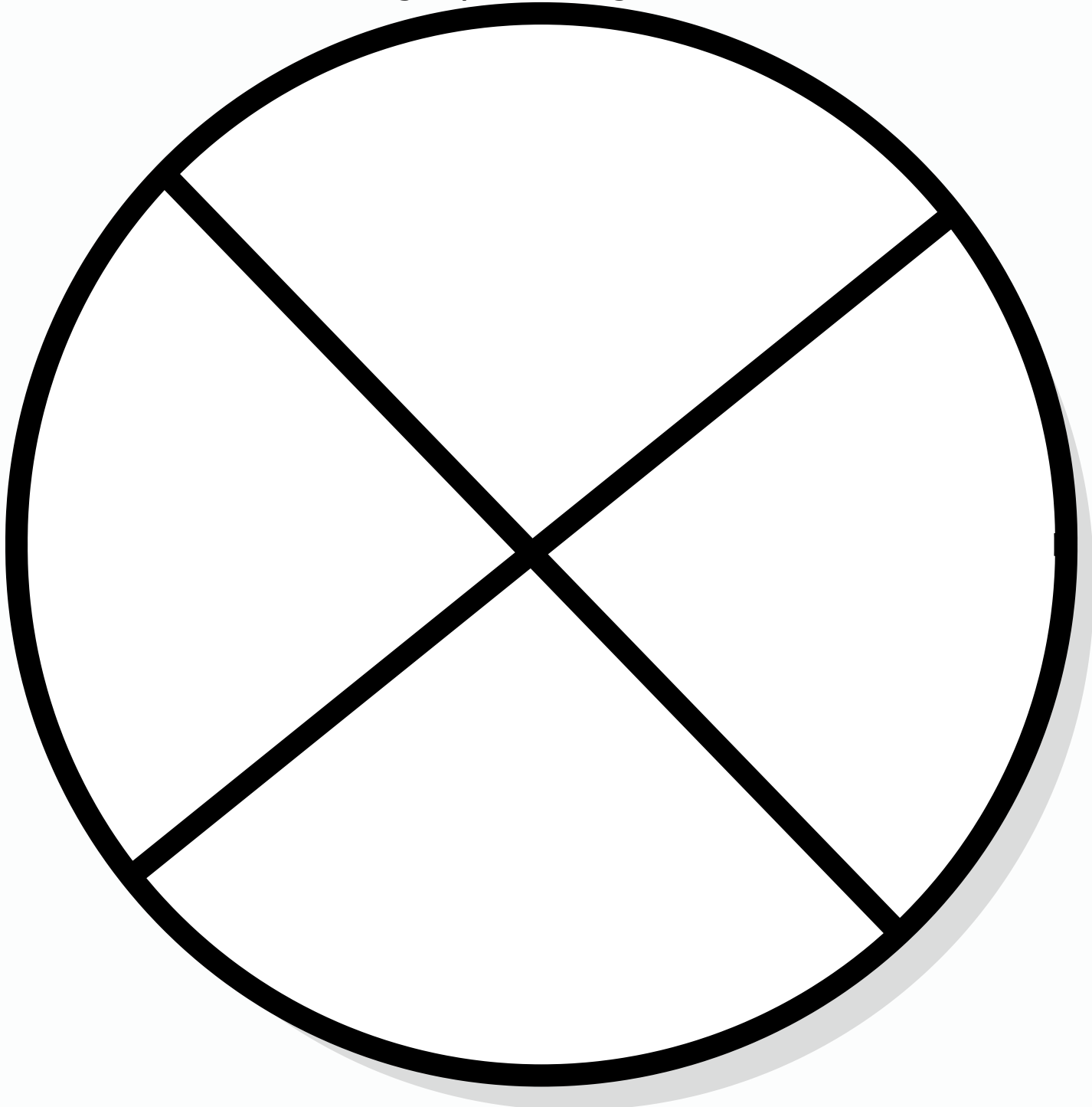


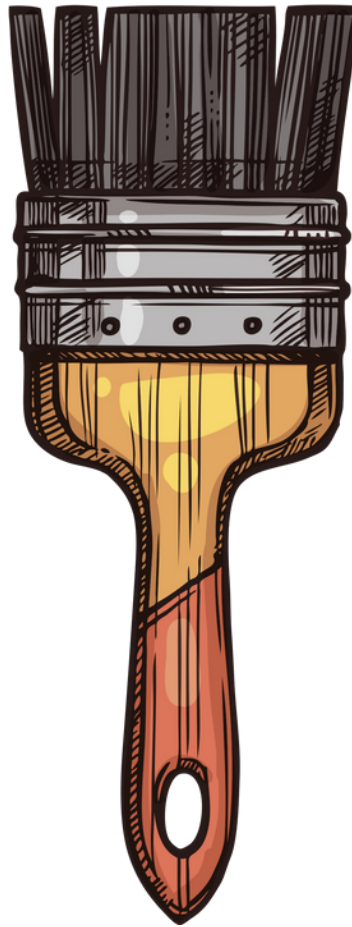
Name/Nom: _____

Block: _____

The 4 Seasons

Please label each season, in Halq'eméylem, and draw or write something representing each season



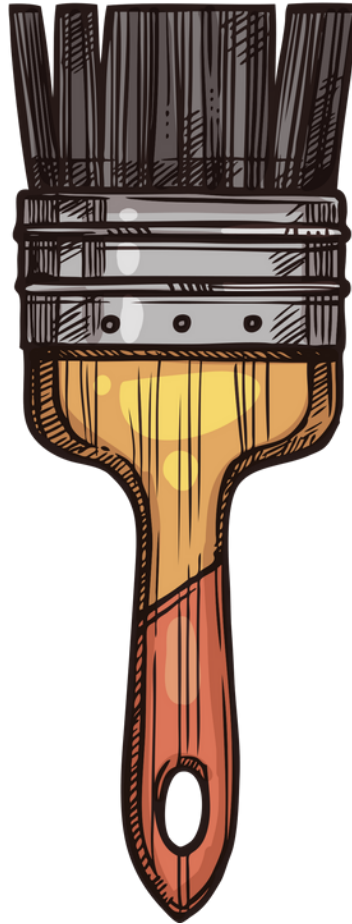


The Large Brush- Series/Units:

Large Brush 1, Reflooding Sumas (Secondary)

Large Brush 2, Stó:lō Sitel lesson (Primary to Secondary)

Large Brush 3, Self Location/Self Reflexivity (Middle -
Secondary **DRAFT SECTION**)



Large Brush 1:
Reflooding Sumas Lake (Secondary)



July 1, 2024

Éy Swáyél Siyaye,

When I read the news article “Reflooding Sumas Lake recommended by researchers” (Wood, 2024) I was over the moon to see Semá:th First Nation point of view shared and centred. Seeing family always gets me excited! I immediately emailed The Narwhal asking permission to create curriculum around it. With their permission, this is what I’ve created.

I have made: the article into 4 parts, K-W-L reflection page, summarization page, transcribing exercise, photo/image reflection, and a timeline.

The news article is chunked into 4 sections, “[c]hunking helps students approach challenging texts by breaking down content into manageable pieces” (Facing History & Ourselves website, n.d.).

I hope this is helpful in bringing a relevant and important news article into your classroom.

In Solidarity,
Peggy Janicki
BC Teacher

Facing History &
Ourselves. (n.d.).
Homepage. Retrieved
March 8, 2025, from
<https://www.facinghistory.org/>

17.0197



QR Code & link go to Homepage of
article



Possible BC Curriculum

There are many curriculum options for this article, because the article intersects on many themes: history, climate change, flood/flood management, First Nations, Stó:lō, land ownership, Canadian government, United States Government, ecology, water, rivers, Stó:lō Worldview, S'olh Témexw, Indian Act, recent events, emergency preparedness, government policy, Indigenous Sovereignty, river basin management, historical land use, counter-narrative, decolonization, and more. Therefore, the BC Curriculum listed is a beginning list of where it can be used.

2 possible BC Curriculum courses covered:

Environmental Science 11:

Big Ideas:

- Complex roles and relationships contribute to diversity of ecosystems,
- Changing ecosystems are maintained by natural processes,
- Human practices affect the sustainability of ecosystems,
- Humans can play a role in stewardship and restoration of ecosystems.

Content:

energy flow through ecosystems, First Peoples knowledge and other traditional ecological knowledge in sustaining biodiversity, human actions and their impact on ecosystem integrity, resource stewardship, restoration practices.



Possible BC Curriculum covered (Continued):

Environmental Science 11 (continued):

Curricular Competency:

Questioning and predicting: demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest.

Planning and conducting: assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods.

Processing and analyzing data and information: apply First Peoples perspectives and knowledge, other ways of knowing and local knowledge a sources of information.

Evaluating: Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources, critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.

Applying and innovating: consider the role of scientists in innovation.

Communicating: Express and reflect on a variety of experiences, perspectives, and worldviews through place.



EFF: English First Peoples 12

Big Ideas:

- The exploration of text and story deepens our understanding of diverse, complex ideas about identity, others, and the world,
- Oral and other texts are socially, culturally, geographically, and historically constructed,
- Voice is powerful and evocative,
- First Peoples texts and stories provide insight into key aspects of Canada's past, present, and future.

Content:

Students are expected to know the following: A wide variety of text forms and genres, Common themes in First Peoples literature, First Peoples oral traditions -the legal status of First Peoples oral traditions in Canada, purposes of oral texts, the relationship between oral tradition and land/place, Text features and structures, elements of visual/graphic texts, Strategies and processes, reading strategies, writing processes.

Curricular Competency:

Comprehend and connect (reading, listening, viewing): Access information for diverse purposes and from a variety of sources and evaluate its relevance, accuracy, and reliability, Select and apply appropriate strategies in a variety of contexts to guide inquiry, extend thinking, and comprehend texts, Think critically, creatively, and reflectively to explore ideas within, between, and beyond texts,



Possible BC Curriculum covered (Continued):

EEP: English First Peoples 12 (continued):

Curricular Competency (continued):

Comprehend and connect (reading, listening, viewing) (continued): Construct meaningful personal connections between self, text, and world, Examine the significance of terms/words from First Peoples languages used in English texts, Identify bias, contradictions, distortions, and omissions,

Create and communicate (writing, speaking and representing):

Select and apply appropriate oral communication formats for intended purposes, Respond to text in personal, creative, and critical ways, Use the conventions of First Peoples and other Canadian spelling, syntax, and diction proficiently and as appropriate to the context,





ASSIGNMENT PACKAGE

BLOCK

SUBJECT

GRADE

★ DESCRIPTION

The Narwhal published an important and relevant article about Sumas Lake.

★ Objective (example):

Big Idea

- First Peoples texts and stories provide insight into key aspects of Canada's past, present, and future.

Students are expected individually and collaboratively to be able to:

- Think critically, creatively, and reflectively to explore ideas within, between, and beyond texts

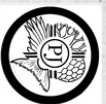
(English First Peoples 12)

NAME
/NOM

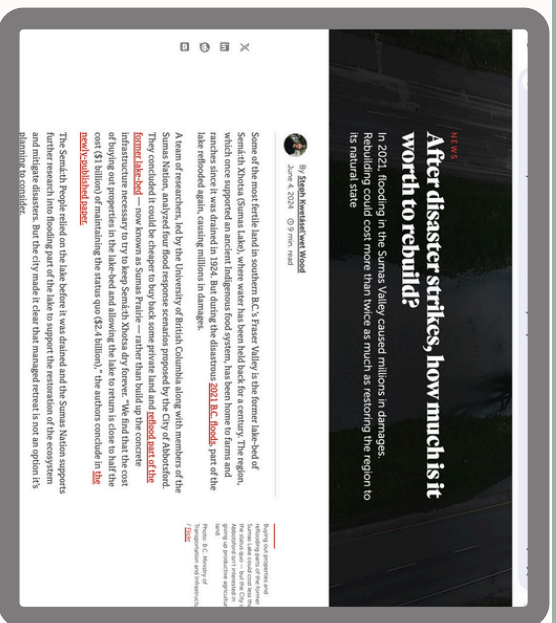
TASKS

DUE DATE

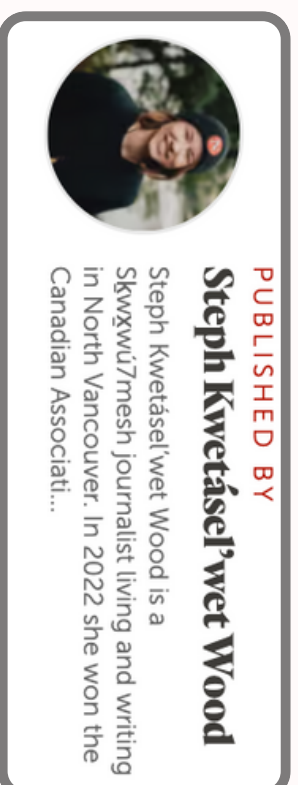
✓	TASKS	DUE DATE
<input type="checkbox"/>	Read 4 sections of news article and complete K-W-L chart for each section <u>OR</u> create a summary for each section.	
<input type="checkbox"/>	Create a timeline from events from all 4 parts.	
<input type="checkbox"/>	Transcribe important quotes from all 4 parts	
<input type="checkbox"/>	Analyze photos/images of article	
<input type="checkbox"/>		



An important & relevant news article “Reflooding Sumas Lake recommended by researchers”



Screenshot 1 (Wood, 2024)



Screenshot 2 (Wood, 2024)

PLEASE NOTE:

Curriculum created by
Peggy Janicki, BC
Teacher, shared with
permission.
Article shared with
permission of The
Narwhal



- (Wood, 2024)
[online news article]
- Scan the QR code or visit the URL directly
[\(https://thenarwhal.ca/bc-sumas-lake-2021-report/\)](https://thenarwhal.ca/bc-sumas-lake-2021-report/)
 - If you use a screen reader, type the link into your browser.
 - For alternative formats, check The Narwhal's accessibility settings.

Part 1a/4 “Reflooding Sumas Lake recommended by researchers” (384 words)

Some of the most fertile land in southern B.C.’s Fraser Valley is the former lake-bed of Semá:th Xhotsta (Sumas Lake) ❶, where water has been held back for a century. The region, which once supported an ancient Indigenous food system, has been home to farms and ranches since it was drained in 1924. But during the disastrous 2021 B.C. floods ❷, part of the lake reflooded again, causing millions in damages. A team of researchers, led by the University of British Columbia along with members of the Sumas Nation, analyzed four flood response scenarios proposed by the City of Abbotsford. They concluded it could be cheaper to buy back some private land and reflood part of the former lake-bed ❸ — now known as Sumas Prairie — rather than build up the concrete infrastructure necessary to try to keep Semá:th Xhotsta dry forever. “We find that the cost of buying out properties in the lake-bed and allowing the lake to return is close to half the cost (\$1 billion) of maintaining the status quo (\$2.4 billion),” the authors conclude in the newly-published paper.

The Semá:th People relied on the lake before it was drained and the Sumas Nation supports further ❹ research into flooding part of the lake to support the restoration of the ecosystem and mitigate disasters. But the city made it clear that managed retreat is not an option it’s planning to consider. (Wood, S. K., 2024)



❶ <https://stoloshxweli.org/units/word/22289/>

Stó:lō Shxwéł Halq'eméylem
Language Program. (n.d.)
QR Code & link go to
Halq'eméylem webpage



❷ <https://thenarc.whal.ca/topic/s/bc-floods-solutions/>

(Kwetšéłwet Wood, 2022)
QR Code & link go to
webpage news article



❸ <https://news.ubc.ca/2024/06/call-for-return-of-sumas-lake/>

(Bossbart, 2024) QR
Code & link go to
webpage news article



❹ <https://www.frontiersin.org/journal/conservation-science/articles/10.3389/fcsc.2024.1380083/full>

(Finn et al., 2024)
QR Code & link go to
webpage news article



Part 1b/4

The research sparks challenging questions about “managed retreat,” which refers to purposefully relocating people to a safer area. As drought, floods and wildfires threaten the places we call home, more difficult conversations will need to be had about what the financial, social, cultural and ecological costs come with every decision, and who gets to decide.

As people in British Columbia brace for another destructive wildfire season, following droughts that 5 persisted throughout the winter as lingering wildfires smoldered under the snow, the intense rains of 6 2021 may feel far out of mind. But whether it’s floods or wildfires, the research taps into the collective anxiety and uncertainty many people living on the coast are grappling with, and raises uncomfortable questions that are difficult to answer. When disaster strikes, what must be saved or abandoned? What would it take for me to decide to leave this place I call home — or what could force me to leave? (Wood, S. K. , 2024)

5



<https://thenarwhal.ca/western-canada-wildfires-may-2024/>

(Anderson & Simmons, 2024)
QR Code & Link go to webpage
news article

6



<https://thenarwhal.ca/bc-fort-nelson-fire-may-2024/>

(Simmons, 2024)
QR Code & Link to to
webpage news article

(404 words)

A difficult decision ahead for Sumas Prairie

“I have friends and relatives who live on Sumas Prairie, very good friends that I have grown up with that are farmers,” Chief Dalton Silver said. The Semá:th had their food source taken away from them when the lake was converted to agricultural land — they are not looking to put anyone else through a similar experience, he said.

“People point out that food security is something that’s in mind, with the richness of farmland underneath [the lake]. Initially, it was food security for our people. Now, on the other hand, with the lake gone and the farmland that’s there, that provides food security for a great number of people.”

He said that in researching flooding part of the lake, “our idea is not to kick people out of their home.” They are looking towards a situation where people would be willing sellers — which he acknowledged would be a “long, hard process.” And for some, the challenge is not just leaving their homes, but about reconciling a deeper difference in worldview.

“Some people find it a lot easier to throw their support around the idea of some built infrastructure versus letting the water come in,” he said. But on the other hand, “It’s not our way as Semá:th people to be fighting nature.” City of Abbotsford says focus remains on flood prevention, not managed retreat. (Wood, S. K. , 2024)



Part 2b/4

The 2021 B.C. floods caused over 3,000 people to evacuate from Abbotsford, B.C.. In early November, an atmospheric river brought extreme rains to the West Coast, flooding waterways, killing over 670,000 livestock and causing millions in damages. In late May, the Supreme Court certified a class action lawsuit alleging the City of Abbotsford was liable to pay damages due to it not closing the floodgates at the Barrowtown Pump Station in time. The allegations have not been proven in court. ¹ ²

The new report, coauthored by University of British Columbia researchers, non-governmental organizations and Semá:th First Nation, concludes that since 2021, flood response has been “a continuation of the status quo” to build up concrete, and that more innovative thinking is needed.

The team analyzed four flood response options proposed by the City of Abbotsford (developed by an external contractor). The proposals range from \$200 million to \$2.4 billion, with the two cheaper options including status flood mitigation with some enhancements, and the two more expensive options include adding a floodway and wider enhancements.

(Wood, S. K. , 2024)

1



<https://www.slatervecchio.com/class-action/sumas-flood-class-action/>

(Slater Vecchio LLP, n.d.)

QR Code & Link go to webpage news article

2



<https://www.cbc.ca/news/canada/british-columbia/abbotsford-pump-station-upgrades-1.7115771>

(CBC News, 2023)

QR Code & Link go to webpage news article

Part 3a/4 “Reflooding Sumas Lake recommended by researchers”

(464 words)

[Study suggests a 3rd and cheaper option]

They looked at B.C. land assessments ¹ and concluded it would cost approximately \$956 million to buy back a portion of the lake-bed — which would be cheaper than the two more expensive options the city put forward. They acknowledged there would be further costs beyond buying up land — additional flood infrastructure may still be required, as well as cleanup and decontamination. But the authors emphasized that even if costs of their scenario doubled, it would still be less than the two more expansive and expensive options put forward by the city.

The City of Abbotsford emphasized the economic benefits of agricultural land in its statements to The Narwhal and other media outlets.

“Our farm economy is also responsible for \$3.83 billion in economic activity each year and supports 16,770 local jobs,” the City of Abbotsford’s communications manager, Aletta Vanderheyden, told The Narwhal in a statement. Vanderheyden said about 50 per cent of all dairy, chicken, turkeys and eggs consumed in B.C. come from Abbotsford, with a large majority of food production in Sumas Prairie.

“Reflooding Semá:th Xhotsa would mean losing that premium agriculture land and would significantly impact our provincial food supply,” Vanderheyden said. ²
(Wood, S. K. , 2024)

1



<https://info.bccassessment.ca/Services-products/Understanding-the-assessment-process#:~:text=Your%20assessment%20is%20based%20on,the%20view%20from%20the%20home>

(BC Assessment, n.d.)

QR Code & Link go to webpage news article

2



<https://ricochet.media/independent/landback/indigenous-agriculture-is-a-land-back-issue/>

(Davies, 2021)

QR Code & Link go to webpage news article

"As a municipality, our responsibility is to ensure that our community infrastructure protects our community and residents," Vanderheyden continued. "This is our legislated responsibility under the Local Government Act and Community Charter — which is why we are looking at flood protection measures versus re-flooding options. Re-flooding would be an entirely different direction and one that would involve all governments. Our focus remains on flood protection."

Riley Finn, lead author of the paper, said there's different ideas of progress, or even what qualifies as infrastructure. He points out land was bought up for the Site C dam to be flooded by the reservoir, but it isn't viewed as "regressive" since infrastructure is being built.

"If we were to buy out properties in the lake that would be viewed as regressive, perhaps by some, and maybe that's because the lake isn't viewed as infrastructure in the same way that heavily engineered infrastructure might be," he said. "But that's the principle behind green infrastructure, or working with nature to decrease the burdens that we put on ourselves through these heavily engineered solutions." Finn, who works as a researcher at the Martin Conservation Decisions Lab at the University of British Columbia, pointed out some costs, like biodiversity loss, are much harder to quantify monetarily but are no less valuable. Still, he emphasized that the research study is not a complete accounting of the costs and benefits to either the retreat or concrete infrastructure options. The idea was to put reclaiming part of the lake "on equal footing" as concrete infrastructure options.

"There's going to be significant costs in either what path we take," he emphasized.
(Wood, S. K. , 2024)

3



<https://www.ctvnews.ca/vancouver/article/its-disgusting-outrage-grows-over-north-shore-wastewater-plants-386-billion-budget/>

(Nesbit, 2024)

QR Code & Link go to webpage news article



Created by Peggy Janicki, BC teacher, shared with permission



Part 4a/4 “Reflooding Sumas Lake recommended by researchers”

(619 words)

“Climate anxiety requires ‘transformational thinking’”

With peoples homes at risk, ‘transformational thinking’ is needed

Many people are feeling climate anxiety about how their health and homes could be impacted by climate change. Tara Martin, co-author of the paper and professor at the University of British Columbia’s department of forest and conservation sciences, said the public’s worry is exactly why broader solutions and “transformational thinking” are needed.

“What we’re finding is that the actions that we’ve taken in the past to deal with catastrophic events are not necessarily the actions we need to take in the future. In fact, a lot of the actions that we’ve taken in the past have made things worse,” she said.

“The floods are coming and the fires are coming. What we need is to minimize the risk to people, to infrastructure and to wildlife,” she said.

After doing something a certain way for a while, we become resistant to change, she said. But managed retreat can offer families and businesses an alternative — “potentially a lifeline.” Martin said many Sumas Prairie residences are uninsurable since the 2021 floods.

But she acknowledged that these factors don’t make it an easy decision.

“It’s people’s homes, it’s their livelihoods. It’s not a trivial thing to ask people to move somewhere else.”

‘Harmonizing with the water’ offers a way forward

Murray Ned, who works as an advisor to the Semá:th Nation and executive director of the Lower Fraser Fisheries Alliance, **1** said for a long time, provincial and federal governments have been willing to trade-off ecosystems for economic benefit — as when the lake was first drained in 1924 because it was a “nuisance” for settlers that flooded regularly and brought mosquitos. Ned, who also coauthored the study, said recognizing First Nations rights and valuing ecosystems is necessary going forward adapting to climate change and managed retreat.

He said in planning for the future, people need to be “harmonizing with the water” instead of fighting it.

2

(Wood, S. K. , 2024)



Part 4b/4

"This is really about the entire province of B.C. and the impacts in our Stó:lō territory," he said. "We're also having these drought years. We're expecting a fairly dry summer ... so fish need to be able to migrate in these conditions with low water and higher water temperatures. This is not just about this territory, but rather the entire Lower Fraser and how to best manage that as a partner with the province, the feds and local stakeholders."

People and communities will assign different values to loss of livelihood, habitat or food sources, whether monetary or intrinsic value. Likewise, the resiliency of an ecosystem, a food network or a local economy all have high stakes across communities. Abbotsford emphasized the economic benefit of agricultural land. Martin described the cost of natural disasters, like the 2021 floods, which were not considered in Abbotsford's calculations for its four flood response options. Finn emphasized the benefits of salmon restoration and climate change mitigation, while Ned emphasized the value of retaining water during drought. Silver brought up the value of supporting other species that once relied on the lake.

The increase in natural disasters in recent years is only one part of a wider story of watching ecosystems and ways of life be destroyed, Silver said.

"The destruction of our homelands we've seen over the last 150 to 200 years, it seems like it happened so quickly," he said. "The lake was of huge importance to us." **3**

But through radical environmental and social change, "our people adapted," he said, which is key to overcoming the greater challenges ahead. To adapt to climate change, "it would be a lot easier if people would open their minds more to trying to live with nature and work with nature rather than the mass destruction that's happening."

(Wood, S. K. , 2024)



1



<https://www.lffa.ca/>

(Lower Fraser Fisheries Alliance, n.d.)
QR Code & Link go to webpage article

2



<https://www.water-alternatives.org/index.php/Lalldoc/articles/vol16/v16issue2/707-a16-2-10/file>

(Leonard et al., 2023)
QR Code & Link go to PDF download, 55 pages.

3

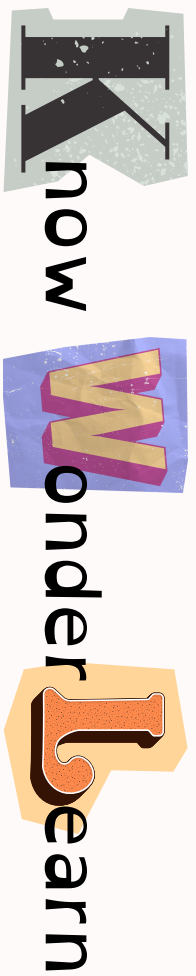


https://thereach.ca/wp-content/uploads/2023/04/TR_SemathXoitsa_Book_LR_01.pdf

(Silver, Victor, Foulds, & Schneider, 2023)
QR Code & Link go to PDF download, 20 pages.



Example page:



What I Know

Key Facts:

-it started in the 18th century

Important figures:

-John A. McDonald

Technological

Advancements:

-the steam engines

What I want to Know

Specific Questions:

-How does it affect urbanization?

Areas of Interest:

-What was the songs of the day?

Impacts and

Consequences:

--What are the environmental effects?

What I learned

New knowledge

Stó:lō worldview on events

Understanding

Changes:

-What was the fish population at that time?

Connections:

-My and/or my families' connection to events?

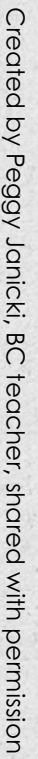




Block:

What I learned

What I want to Know

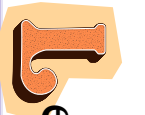




now



onder









earn, continued



Summarize the Main Idea

Part: _____

Write 6 key words from the text to get the main idea

Use the keywords above to help you summarise the text.

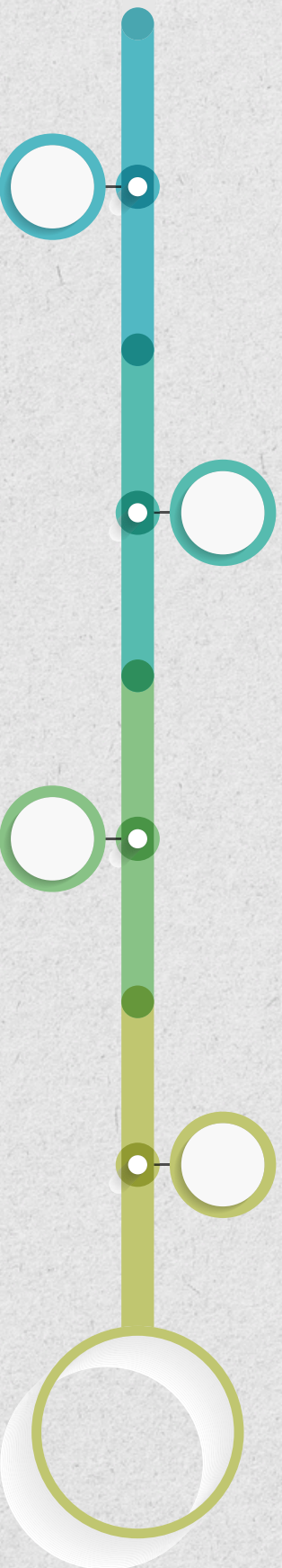
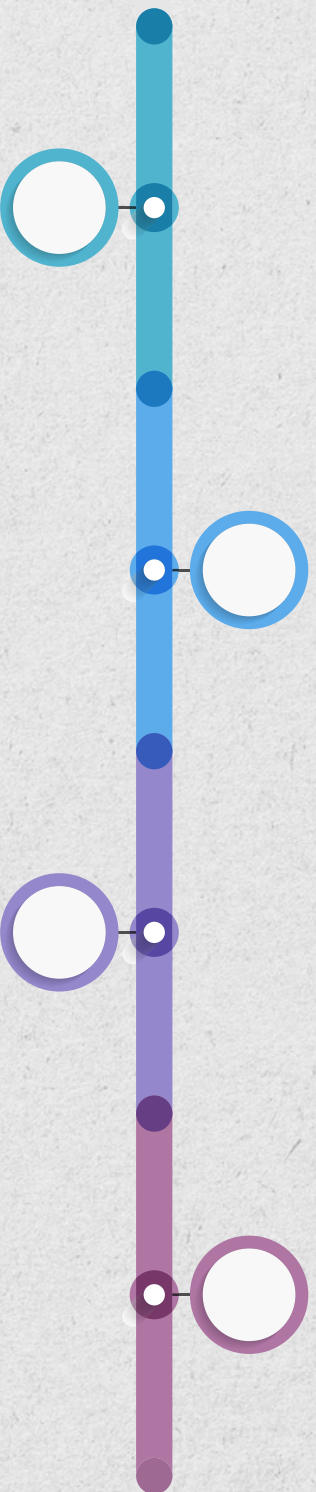
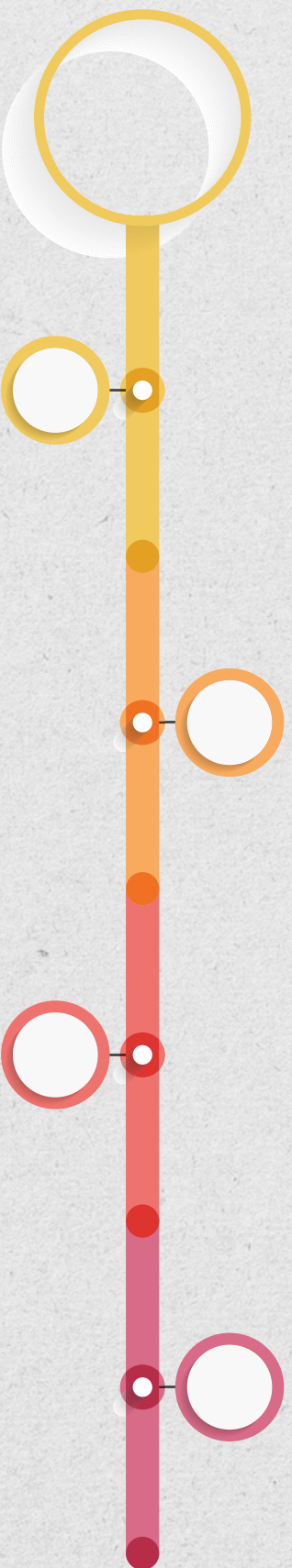


Page 55 of 60

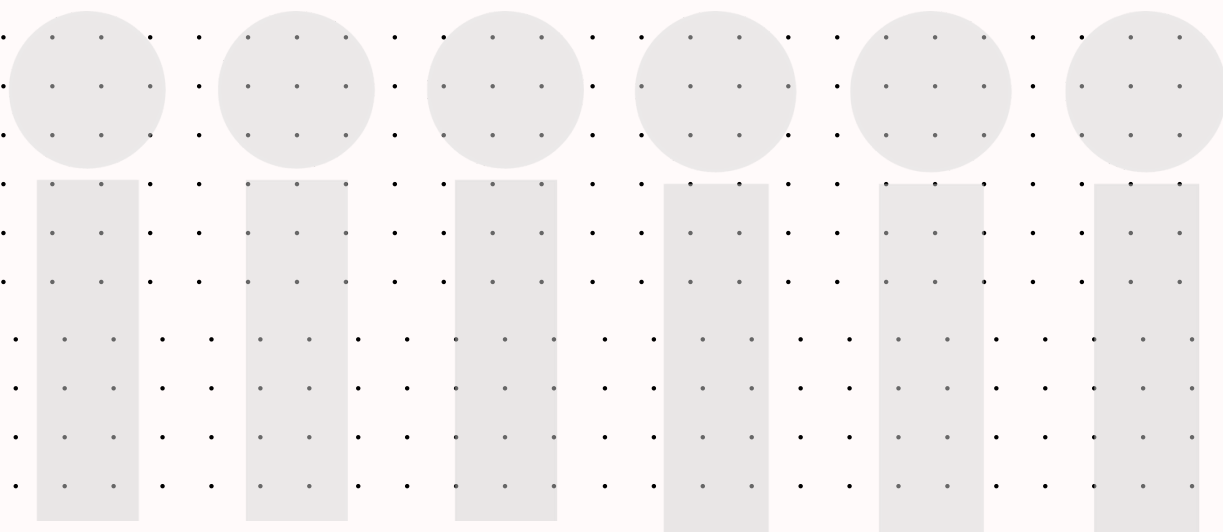
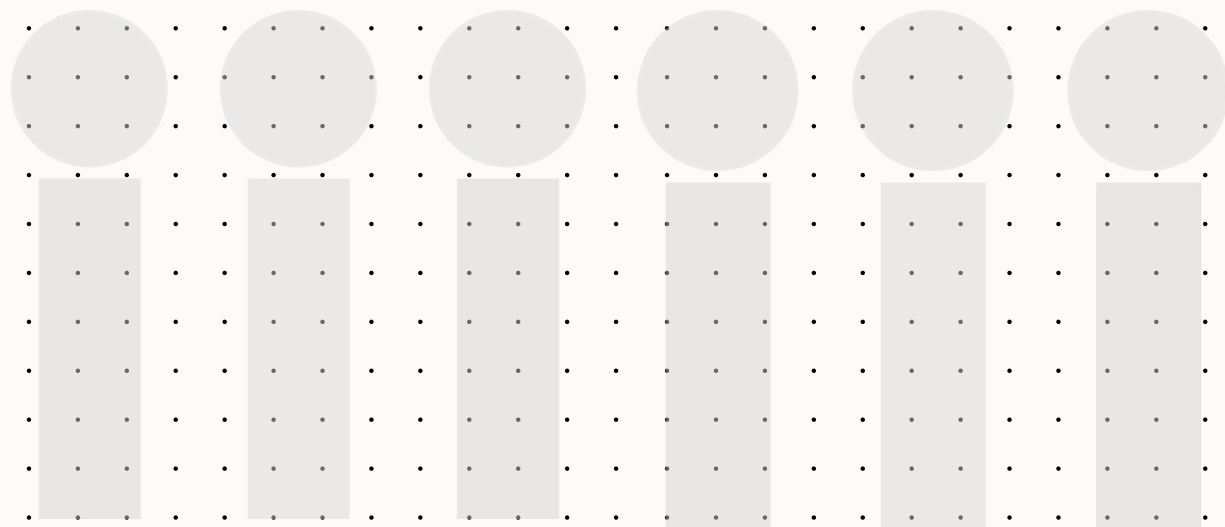
**Create a timeline of key events from news article
(Wood, S. K. , 2024) AND add 5 extra events from
your point of view/life.**

Name/Nom:

Block:



Additional space for timeline events



Transcribe [copy word for word] 5 to 7

Name/Nom: _____

Block: _____

compelling quotes from article with paragraph

number.

Example:

The research sparks
challenging questions about
"managed retreat," which
refers to purposefully
relocating people to a safer
area. (paragraph 4)

“ _____ ”

“ _____ ”

_____ ”

“ _____ ”

“ _____ ”

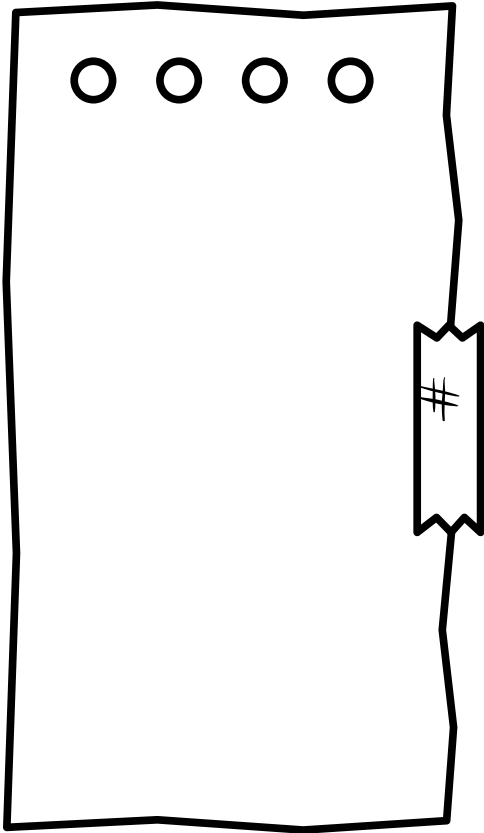
“ _____ ”



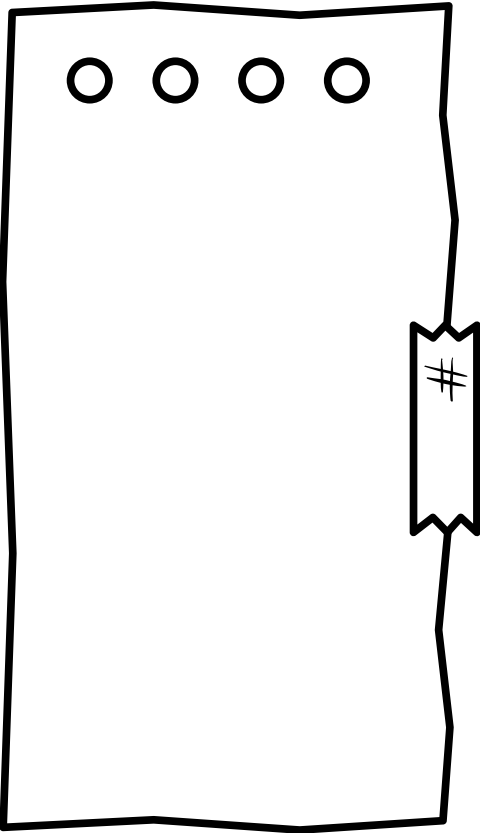
This image shows a blank sheet of white paper designed for writing. It features a series of evenly spaced vertical blue lines that run from the top to the bottom of the page. A single horizontal red line is positioned near the top edge, creating a header or margin area. The rest of the page is left empty for text.

View all images (6) of news article (Wood, S. K. , 2024). Write about the information they share &/or what you learned from the photographer.

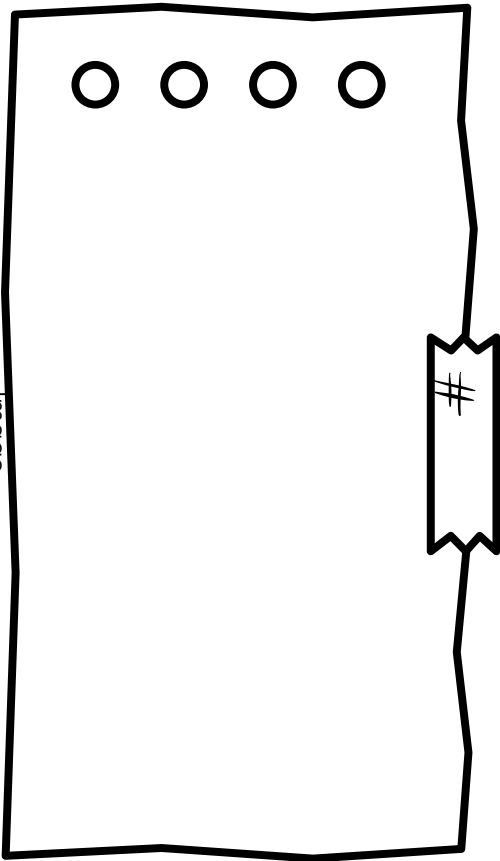
Image



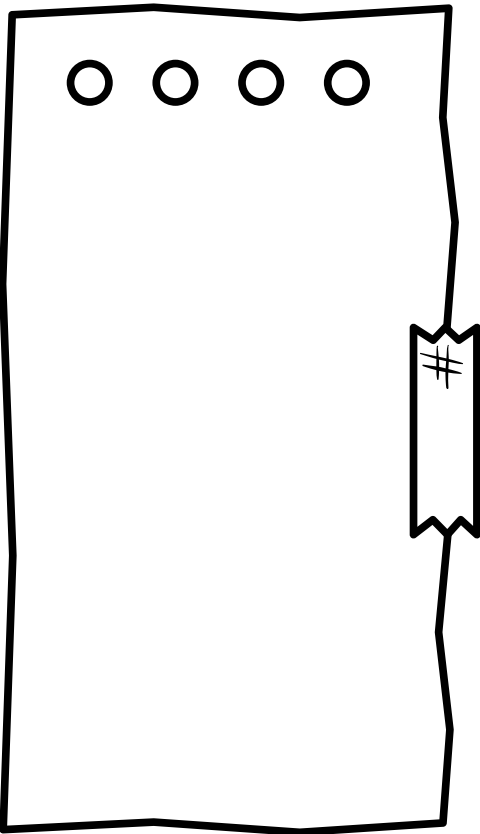
Image



Image



Image



- Image 1: Photo: B.C. Ministry of Transportation and Infrastructure
- Image 2: This historic map shows Sumas Lake in the lower right, before it was drained in 1924 ...
- Image 3: Sumas First Nation Chief Dalton Silver would like to see the restoration ...
- Image 4: This B.C. government pamphlet advertised the sale of agricultural land after it drained Sumas Lake ...
- Image 5: The costs of maintaining flood protection infrastructure in the Sumas Valley are enormous particularly as climate change increases ...
- Image 6: When Semá:th Xhoitsa (Sumas Lake) was drained it took away a important food source for Semá:th People ...

Name/Nom: _____

Block: _____



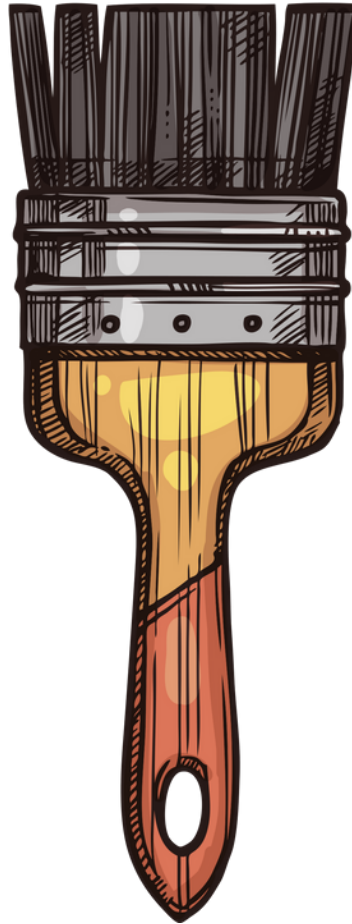
What you learned from photos/images, continued

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Resource

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- Nesbit, B. (2024, March 26). 'It's disgusting': Outrage grows over North Shore wastewater plant's \$3.86-billion budget. CTV News. [https://www.ctvnews.ca/vancouver/article/its-disgusting-outrage-grows-over-north-shore-wastewater-plants-386-billion-budget/](https://www.ctvnews.ca/vancouver/article/its-disgusting-outrage-grows-over-north-shore-wastewater-plants-386-billion-budget/(link%20to%20online%20news%20article)) (link to online news article)
- Silver, C., Victor, C., Foulds, K., & Schneider, L. (2023). Semá:th Xó:t̓sa: St̓s'ólenegwelh Sxó:t̓sa (Great Gramma's Lake). The Reach Gallery Museum. https://thereach.ca/wp-content/uploads/2023/04/TR_SemathXotsa_Book_LR_01.pdf (link to PDF download, 20 pages)
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Large Brush 2:
Stó:lō Sitel Stories (Primary - Secondary)



Stó:lō Sxwōxwiyám Stories: Mr Bear and Baby

Grade 4 English Language Arts, May 2024

created by Peggy Janicki, BC Teacher, shared with permission

Big Idea: Exploring stories and other texts helps us understand ourselves and make connections to others and to the world.

Curricular Competency: Using oral, written, visual, and digital texts, students are expected individually and collaboratively to be able to:

Comprehend and connect (reading, listening, viewing):

- Identify how story in First Peoples cultures connects people to land.
- Use personal experience and knowledge to connect to text and deepen understanding of self, community, and world

Create and communicate (writing, speaking, representing):

- Use writing and design processes to plan, develop, and create texts for a variety of purposes and audiences

Content:

Students are expected to know the following:

Story/text

- forms, functions, and genres of text
- text features

Strategies and processes

- writing processes
- metacognitive strategies

Language features, structures, and conventions

- conventions

Core Competencies:

Communication (Communicating):

Profile 3: I gather the basic information I need and present it.

Profile 4: I share my ideas and try to connect them with others' ideas.

Profile 4: I acquire the information I need for specific tasks and for my own interests and present it clearly.

Profile 5: I use my understanding of the role and impact of story to engage my audiences in making meaning

(British Columbia Ministry of Education, 2024)

Stó:lō Sítel Stories: Mr Bear and Baby (Continued)

Core Competencies (continued):

Communication (Collaborating):

Profile 3: I contribute during group activities with peers and share roles and responsibilities to achieve goals.

Profile 4: I am an active listener and speaker

Profile 5: I ask thought-provoking questions, integrate new information and various perspectives from others, and think critically about whose voices are missing

Thinking (Critical Thinking and Reflective Thinking):

Profile 2: I can explore with a purpose in mind and use what I learn.

Profile 3: I experiment purposefully to develop options.

Profile 4: I consider more than one way to proceed and make choices based on my reasoning and what I am trying to do.

Thinking (Creative Thinking):

Profile 2: I can get new ideas or build on or combine other people's ideas to create new things within the constraints of a form, a problem, or materials.

Profile 3: I build the skills I need to make my ideas work, and I usually succeed, even if it takes a few tries.

Personal and Social (Personal Awareness and Responsibility):

Profile 2: I recognize and can explain my role in learning activities and explorations, and I can give some evidence of my learning.

Profile 3: I take responsibility for my actions.

Personal and Social (Positive Personal and Cultural Identity):

Profile 2: I can describe my family, home, and/or community (people and/or place).

Profile 3: I can describe different groups that I belong to.

Personal and Social (Social Awareness and Responsibility):

Profile 2: I use materials respectfully

Profile 3: I contribute to group activities that make my classroom, school, community, or natural world a better place.

(British Columbia Ministry of Education, 2024)

Stó:lō Sitel Stories: Mr Bear and Baby (Continued)

Aboriginal Ways of Knowing and Being (BCTF, 2024):

Learning is connected to land, culture, and spirit. We -- the two-legged, four-legged, finned and feathered, plants and rocks are all related. We must always practice reciprocity through acts of giving and receiving.

Lesson at a Glance:

- Ask if students know where Stó:lō territory is?
- Introduce Sxwōxwiyám and Sqwélqwel definitions.
- Introduce and read, Stó:lō Sxwōxwiyám story: “Mr Bear and Baby”
- Have discussions/reflections/wonderings (themes, symbols, connections, etc), use Think-Pair-Share strategy
- Create a Mini Zine (booklet) to share beginning, three key points, and ending of story.
- Complete Exit Ticket

Prep:

- Know your local land acknowledgement and where Stó:lō territory is if your class is not located there. See website, “Native Land” and its “disclaimer of definitive boundaries”.
- Have Halq'eméylem pronunciations using QR Codes/Links.
- Either colour print one copy OR project from computer, “Sxwōxwiyám” and “Sqwélqwel” posters, 3 pages in total.
- Print student “One Page Mini Zine” with instructions. 2 pages total/student.
- Optional, have one Mini Zine example made to show students.
- Print “Exit Tickets” 1/2 page/student.
- pencils, pencil crayons, pencils, crayons, scissors.
- 1 copy of the book, “Mr Bear and Baby” (Stó:lō Sitel, 1979).
- Optional, overhead projector to share book.
- Optional, have extra copies of book for students.
- Optional, extension, share other Stó:lō Sitel stories.

Stó:lō Sitel Stories: Mr Bear and Baby (Continued)

Resources:

1. Website, Native Land, retrieved from <https://native-land.ca/>
2. Book, “Mr. Bear and Baby” (Leon, 1979). Coqualeetza Cultural Education Centre Order Form retrieved from <https://drive.google.com/file/d/1-NVuOR4T9k8yohKIB9kKWcS1MUu0jcYU/view?pli=1>
3. Computer/laptop & Projector

Lesson:

1. Introduce the topic of oral stories of Indigenous Peoples and wonder how old a story is if it is been told “since time immemorial”?
2. Define “Sxwōxwiyám” and “Sqwélqwel” by using posters, and QR codes/links for Halq’eméylem pronunciation. There are two types of stories, read through examples and have class answer to have common understanding. Use recent class books as examples 5 or 6.
3. Introduce and read, Stó:lō Sxwōxwiyám story: “Mr Bear and Baby”
4. Discuss/reflect/wonder, using Think-Pair-Share strategy (Molas, Pabst, & Winkler, 2004).

Stó:lō Sitel Stories: Mr Bear and Baby (Continued)

Lesson (continued):

5. Sample discussions/reflections/wonderings:

- a. students think of a situation where they had to be fair or protective , or
- b. how the boy's journey with the bear changes him and his relationship to his community, or
- c. how the boy may have felt during different parts of the story, or
- d. how the boy's transformation reflects broader human experiences, or
- e. the boy's characteristics before, during, and after his time with the bear, or
- f. how the themes of the story (transformation, family, resilience) can be seen in students' lives, or
- g. list and discuss the symbols in the story (bear, longhouse, transformation, the berry patch, the boys' hairiness, the brother, the Mother)
- h. what ethical lessons did the boy learn from the bear (strength, fairness, excellence, discipline, protection, generations, generosity, love).

6. Transition into creating "One Page Mini Zine" and hand out Mini Zine and instructions and supplies. Optional, show sample "Mini Zine"

7. Have students create a Zine for "Mr Bear and Baby". It will have a front, back, and three panels to share their learning, based on discussion/reflection/wonderings they can:

- a. share three events in chronological order with a beginning and end.
- b. share three examples of when they were protective or disciplined.
- c. share three symbols and their meaning
- d. share three emotions the boy may have felt across the story.

8. Lead students through steps to create their Mini Zines. Caution, pay special attention to where to cut on the page

9. Hand out and have students complete "Exit Ticket"

10. Optional: students can self-evaluate with "Mini Zine Rubric"

11. Clean up.

Stó:lō Sitel Stories: Mr Bear and Baby (Continued)

Assessment/Evaluation:

1. students complete "Exit Ticket"
2. Participation in discussion
3. Self-assessment with Mini Zine rubric

Extension(s)/Adaptations(s):

1. Students can create a zine for each of the Stó:lō Sitel stories (8 in total).
2. Students can list and draw as many symbols as they can, if discussing symbols.
3. Mini Zines can be enlarged on photocopier to an 11" x 17" paper.
4. Think-Pair-Share can be written/scribed

1.

Sxwōxwiyám

is the time and the stories from long ago when the world was not quite right. It was a time when animals and people could talk to each other and **could transform** from one to the other, emphasis added.

(Stó:lō Research and Resource Management Centre, 2016)



Figure 1: *Mission view of Mount Baker*

Created by Peggy Janicki, BC Teacher, shared with permission

(QR Code to Webpage with accessible text content and resources)



2.

Sqwé!qwe!

means “true news” [or “true histories”]. It refers to the oral history of Stó:lō ancestors and the places they fished, hunted, harvested, and spent time in our world. Sqwé!qwe! links us to the **more recent** past, emphasis added.



Figure 1: *Mission view of Mount Baker*

Created by Peggy Janicki, BC Teacher, shared with permission

(Stó:lō Research and Resource Management Centre, 2016)

(QR Code to Webpage with accessible text content and resources)



<p>Example 1:</p> <p>There is a story about Mt. Cheam:</p> <p>She is a woman who once lived beside Mt. Baker in the USA.</p> <p>Is this S̱wō̱wiyám OR Sqwélqwel?</p>	<p>Example 2:</p> <p>There is a story about a man that was transformed into stone by Xá:ḻs (a person that often transforms things).</p> <p>Is this S̱wō̱wiyám OR Sqwélqwel?</p>
<p>Example 3:</p> <p>There is a story about Chief Scult-la-ment, he was known to European settlers as Captain John of Sq'éwlets. He joined 109 other chiefs in 1874 to protest newcomers taking their lands.</p> <p>Is this S̱wō̱wiyám OR Sqwélqwel?</p>	<p>Example 4:</p> <p>There is a story about Chief Williams hunting a deer and bringing it back to the families for everyone to process [to freeze/can/dry].</p> <p>Is this S̱wō̱wiyám OR Sqwélqwel?</p>
<p>Example 5:</p> <p>Share a story of your choosing</p>	<p>Example 6:</p> <p>Share a story of your choosing</p>

Reference

Janicki, M. (2020). *Mission view of Mount Baker* [photograph]. www.peggyjanicki.ca

Stó:lō Research and Resource Management Centre. (2016, November 1). *Sq'ewlets - a Stó:lō-coast Salish community in the Fraser River Valley* .

<http://digitalsqewlets.ca/index-eng.php>

(QR Code to webpage with
accessible text content and
resources)



QR Code for Sxwōxwiyám

Retrieved from

<http://digitalsqewlets.ca/sxwoxwiyam/index-eng.php>

(QR Code to webpage with
accessible text content and
resources)



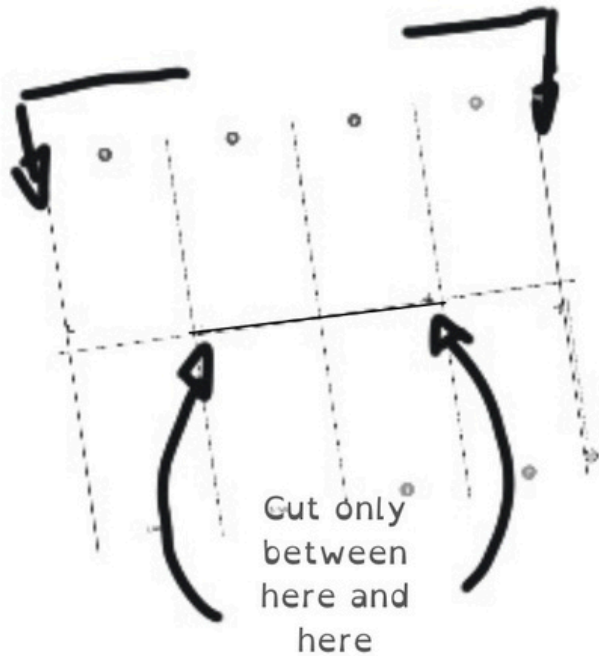
QR Code for Sqwélqwel

Retrieved from

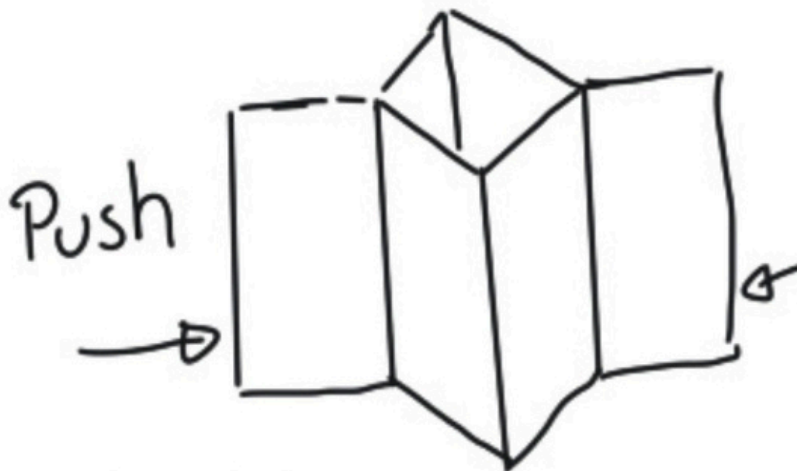
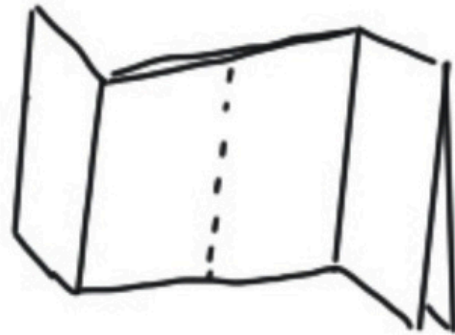
<http://digitalsqewlets.ca/sqwelqwel/index-eng.php>

One-page Mini Zine

Step 1: make 3 cuts: trim top and bottom, and cut ONLY between scissors in middle

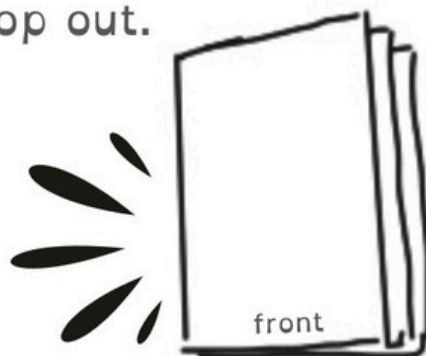


Step 2: Fold lengthwise and crease all folding lines.



Step 3: Push in sides to make centre pop out.

Step 4: make all the folds straight and make sure page labelled as "front" is at the front



Step 5: You're all done!





3

4

5

6



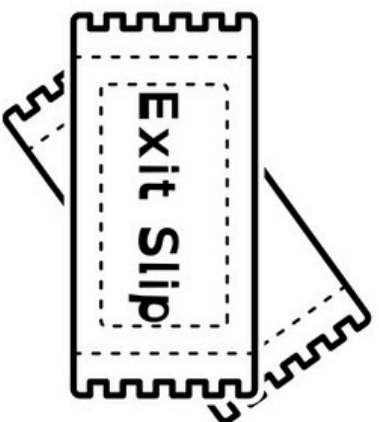
2

1

front

back





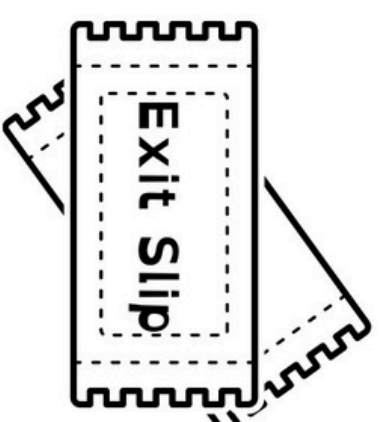
Name:

.....

Is the story "Mr. Bear and Baby" a

☐ A. Sxwoxwiyam story?
(A story of long ago)

☐ B. Sqwelqwel story?
(A story of recent past)



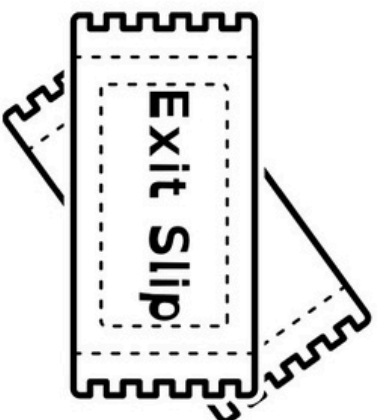
Name:

.....

Is the story "Mr. Bear and Baby" a

☐ A. Sxwoxwiyam story?
(A story of long ago)

☐ B. Sqwelqwel story?
(A story of recent past)

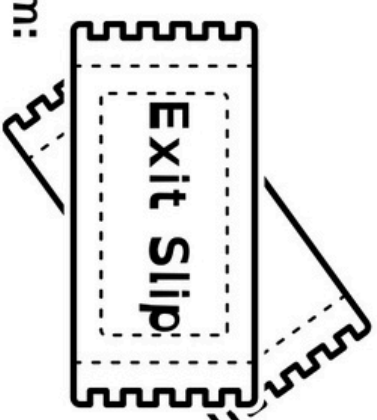


Name/Nom:

.....

☐ A. *Sxwōxwiyám* story?
(A story of long ago)

☐ B. *Sqwélqwel* story?
(A story of recent past)



Name/Nom:

.....

☐ A. *Sxwōxwiyám* story?
(A story of long ago)

☐ B. *Sqwélqwel* story?
(A story of recent past)

Mini Zine Rubric

Class/Classe:

Name/Nom:

Block:

	1	2	3	
Content	Content meets some of the project requirements and minimal details to show a topic	Content meets most of the project requirements and detailed enough to show there is a topic	Content meets all the project requirements and detailed enough to fully explain the topic	
Organization/Design	Zine has either front OR back, and 1 panel without title	Zine has front, back, and 1 or 2 panels with title	Zine has front, back, and 3 panels with title	
Language/Writing	Some of the panels have full sentences and minimal punctuation	Most of the panels have full sentences and some punctuation.	Each panel has full sentences and punctuation.	
References	Sources not needed to cite	Sources not needed to cite	Sources not needed to cite	

Additional criteria				
			Total /	





THINK – PAIR – SHARE

ADAPTED TO A HYFLEX LEARNING ENVIRONMENT

COMPLEXITY	Effort to Facilitate:	Low	Medium	High
	Effort to Participate:	Low	Medium	High

WHAT IS IT?

Think-Pair-Share is one of the simplest an active/cooperative learning strategy that provides students with an opportunity to engage with course content in a manner that demonstrates both self-learning and collaborative learning. Think-Pair-Share is a useful pedagogical technique that instructors can implement at numerous times throughout a class by giving students an opportunity to reflect on a particular topic/idea discussed in lecture (THINK), pair up with a partner or small group (PAIR), and then share their understanding of that topic/idea (SHARE).

Depending on the number of students, students can be paired off in groups of 2-4. After the initial activity, the instructor can extend the activity into a whole-class discussion and debrief.

EQUIPMENT	YU Deluxe	YU Regular	OWL	Laptop/Zoom
COMPATIBILITY	Z	Z	Z	Z

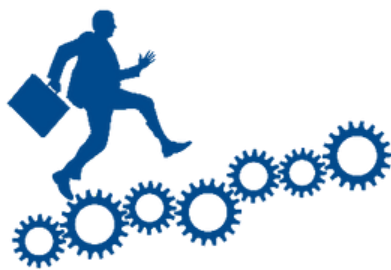
ACTIVITY INSTRUCTIONS

1. Present a passage of text, problem, scenario, question related to course material etc. to the students; for example, students may be asked to analyze a short passage/literary text/poem
 - ✓ Provide a handout with step-by-step instructions
 - ✓ Short texts may be printed on a handout to be distributed in class and also made available online for download
 - ✓ Make handouts available in advance via eClass course site, cloud drive, or web page
2. Give students time to individually engage with the content and privately reflect on it
 - ✓ Students will have their own interpretation of the material, so this gives them a chance to work through it first on their own
3. Divide students into groups of two (2) to four (4), or ask them to pair off with another student
 - ✓ In-class students may move around the room to join their group/partner(s)
 - ✓ Online students may be placed into breakout rooms to join their group/partner(s)
 - ✓ To maximize ease of interaction, ensure that pairs/groups are made up of students of the same type of attendance (i.e., members of any given group are either all present in class or are all online)
4. Ask students to share their own thoughts and critical reflections on the assignment with their partner(s) peers
 - ✓ Sharing one's opinion with others allows for further development of critical thinking skills, exposure to different perspectives and interpretations, refining and broadening individual comprehension, and facilitating communal knowledge construction

5. After each participant gets a chance to share their insights with each other in a low-risk environment, give groups a chance to share what they discussed with entire class
- ✓ Intergroup interaction and discussion may be beneficial to students who may feel anxious speaking to larger groups or voicing divergent opinions
 - ✓ Consider asking each group to designate a ‘speaker’ to present their group’s conclusions
 - ✓ Give students the option to write down their contributions on large sheets of paper (in-person); ask online students to write their responses in the chat box, eClass course forum, on electronic whiteboard etc. This also provides the instructor with a written record to help assess each student’s contribution to (participation in) the discussion
 - ✓ Consider asking students to reflect on the whole-class group discussion in the form of a [one-minute paper](#) or similar debriefing tool.

LEARNING OUTCOMES

What skills will students gain?	Z Reading	Z Verbal comm.	Z Presentation	Z Reflection
	Z Active Listening	Z Teamwork	Z Critical thinking	Z Argumentation



This activity incorporates three distinct levels of learning – personal, interpersonal, and group – and allows students to actively engage in multiple phases throughout the activity. Think-Pair-Share can be used multiple times throughout a lesson to add interaction to the learning experience, or to serve as an impromptu check for understanding. Finally, it is a low-risk activity for students that allows them to voice individual perspectives and interpretations – and be exposed to differing perspectives – in a safe environment, without being seen as ‘wrong’ or ‘incorrect’.

TIME REQUIREMENTS

Activity	Time/student	Time/class
Engage with Content:		05-20 min.
Form Pairs/Groups:		05 min.
Form Initial Stance		05 min.
Discussion in Groups	05 min.	x 2/4 (number of students in a group)
Whole Class Discussion:		10-20 min.
Additional Debrief:		10-15 min.
TOTAL:		45 to 85 min.

Note: time requirements are approximate, and may vary broadly from one exercise to another.

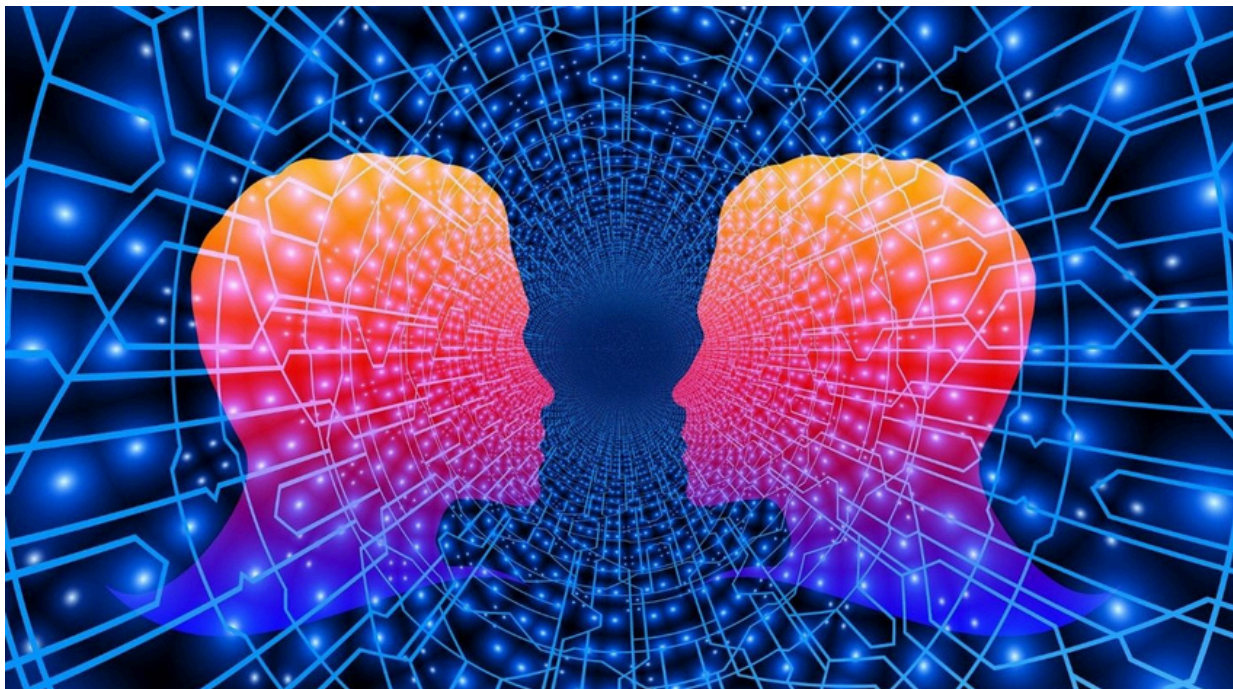
Depending on the complexity of the material and the number of students and their prior learning experience with cooperative learning strategies, a Think-Pair-Share activity may be accomplished in as little as 15 minutes!

POTENTIAL CHALLENGES

- Significant differences in the number of students attending online versus in-class and/or odd numbers may render successful group formation difficult
- Keeping all students/student groups on task and organized
- Significant differences between group members (in terms of reading comprehension, cultural attributes and traditions, etc.) may cause structural imbalances and unequal power relationships between members of the same group, leading to some students' voices being heard more than some others'

HELPFUL STRATEGIES

- If students are unfamiliar with cooperative learning techniques, make sure you share (or encourage participants to collectively negotiate) the etiquette of civil discourse to be followed Ask
- Ask students open-ended questions to engage their critical thinking skills; model the process beforehand
- Provide detailed instructions in print and electronically
- Set firm timelines to keep group discussions focused and on track, announce when students must take turns in sharing their opinions (consider appointing a timekeeper for the class)
- Walk around the classroom during the activity to make yourself available to each in-class group for questions; appoint an assistant to offer the same opportunities for additional guidance to online participants
- Consider recording in-person contributions (e.g., photograph posters or notes) to share on eClass so all students can see each other's reflections on the topic
- Allow asynchronous participation (e.g. use eClass 'Workshop' activity)
- Consider using class debrief for reflections (how to improve and what to do differently)



ADDITIONAL RESOURCES

- Examples of Active Learning Activities. Teaching and Learning in Higher Education. Queen's University
https://www.queensu.ca/teachingandlearning/modules/active/12_exmples_of_active_learning_activities.html
- The K. Patricia Cross Academy (n.d.). Think-Pair-Share. Techniques.
<https://kpcrossacademy.org/techniques/think-pair-share/>
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Would you like to learn more?

Contact us at Teaching Commons for additional resources, handouts, applications, courses, workshops, examples, advice, assistance, one-on-one consulting, and everything else related to teaching and learning. We are happy and eager to assist you!



[Teaching Commons](#)
[TC Homepage](#)

[Yelin Su](#)
[BOLD Going Remote](#)

[Robert D. Winkler](#)
[BOLD Institute Open Session](#)

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 416.736.2100 ext. 55754 Created by [Andrew](#) & [Katharina Pabst](#) & [Robert D. Winkler](#)



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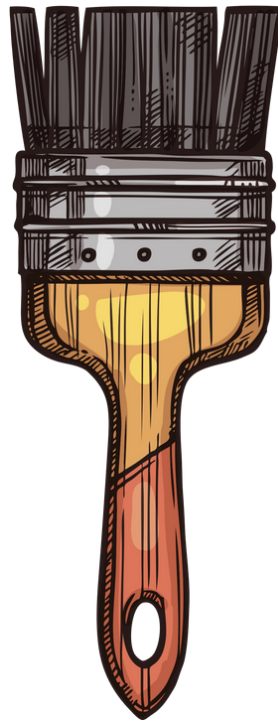
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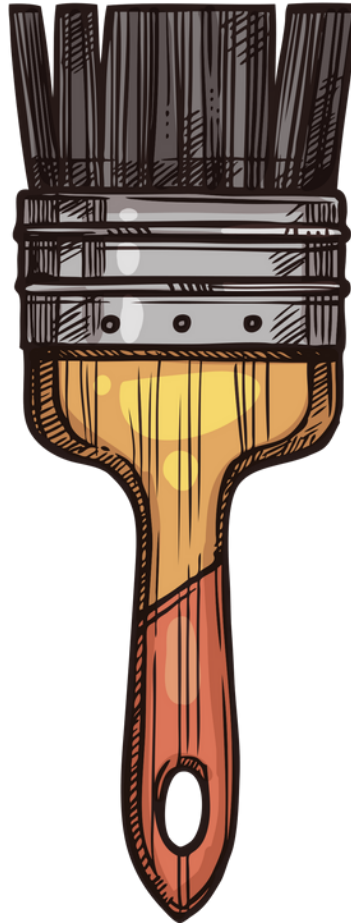
Stó:lō-coast Salish community in the Fraser River Valley. <http://digitalsqewlets.ca/index-eng.php>. (Webpage with accessible text content and resources)





The Large Brush: Appendix 2

There is an accompanying PowerPoint presentation “Stó:lō
Sitel Mr. Bear and Baby”. please see attachment.



Large Brush 3:
Self Location/Self Reflexivity (Middle - Secondary)

Science & Self-Location/Self Reflexivity Lesson

Lesson:

Introduction: What is Self-Location & Self Reflexivity?

1. Define self-location: Understanding how personal background (culture, gender, ability, experiences) shapes perspectives.
2. Define self-reflexivity: Examine biases and privileges that influence how we engage with knowledge.
3. Discuss why self-reflexivity & self-location is valued in science, research, and professional fields. (e.g., ethics in medical studies and environmental science).

Inquiry Question: How do my lived experiences shape the way I understand and interact with science?

Guided Reflection:

1. Share and review "Student Handout 1 Brainstorm Space: Self-location"
2. Students reflect on their personal connections to a scientific topic (e.g. water, land, ecosystems, human body, climate).
3. Encourage stories, drawings, or mind-mapping their experience

Explore Systemic Barriers:

Provide short readings or videos on systemic barriers in science, then discuss how these factors influence who gets to create and validate knowledge.

Examples:

1. The historical exclusion of Indigenous Knowledges.
2. The Henrietta Lack story.
3. The accessibility barriers in science education, Ableism in STEM fields.
4. The gender bias in science, e.g., women's contributions.

Writing a Self-Location Statement:

Share and review "Student Handout 2: How to Write a Positionality Statement"

Using a structured guide (see "Suggested Guides for Self-Location/Self-Reflexivity"), students write a 1-page self-location/self-reflexivity statement, touching on:

1. Their positionality (culture, identity, privileges, challenges).
2. How their background shapes their views on science.
3. What responsibilities they hold in learning and using scientific knowledge ethically.

Lesson (continued):

Group Discussion:

Students share insights (voluntarily) in small groups. Encourage connections between different perspectives and awareness of bias.

Application Beyond the Classroom:

Discuss how self-reflexivity applies in university applications, research ethics, and careers (e.g., award &/or bursary applications process, environmental sciences, medicine, social work).

Assessment/Evaluation:

1. completion of self-location statement

Extension 1:

Read questions from article "Reflexivity in quantitative research: A rationale and beginner's guide" (Jamieson et al., 2023) from Table 1 "Prompt questions for embedding reflexivity in all stages of the research process".

QR Code to online article
[Link to online article](#)



The questions are asking researchers to wonder if they are including and celebrating their position or if they are harming. Although the article is at the post-secondary level, however, the questions are relevant for middle to secondary levels to wonder about.

Extension 2:

View and discuss illustrations with questions from article, "A primer for the practice of reflexivity in conservation science"

QR Code to online article
[Link to online article](#)



Extension 3:

Create a photo collage/photo voice of self-location

Reference

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The Large Brush: Appendix 3

Science & Self-Location/Self Reflexivity Lesson



Dear Educator:

Why Does a Self-Location Statement Matter in Science?

Science is not completely neutral (Deloria, 1997). Every researcher brings their own background, experiences, and biases to their work. A self-location statement helps scientists be upfront about how their perspectives might shape the questions they ask, the data they interpret, and how they apply their findings.

Why It Is Important:

1. It keeps science honest by acknowledging their biases researchers and helps preventing hidden influences.
2. It encourages ethical research.
3. It brings more voices to science. Science benefits when researchers recognize their own perspectives and make space for others.
4. It builds public trust. When scientists share where they are coming from, people can better understand and assess their work.

How It is Used in Science:

1. Researchers include self-location statements in studies to be transparent about their biases.
2. Scientists, when working with Indigenous Knowledges and communities, show respect and accountability.
3. Environmental researchers self-locate to disclose any personal or financial connection to their work. This is typically titled "Conflict of Interest Disclosure" statement. Researchers are required to declare financial, institutional, or personal interests that could influence their findings.
4. Medical professionals reflect on how their cultural background influences their approach to healthcare. For example, a scientist applying for a public health grant/money may need to explain how their lived experiences shape their understanding of health disparities in marginalized communities.

Ultimately, self-location makes science more fair, ethical, and inclusive.

Science & Self-Location/Self Reflexivity Lesson

Why Does a Self-Location Statement Matter in real life?

A self-Location statement in real life (IRL) can be:

1. part of your job interview presentation (e.g. A slide sharing which lens you use, what your privileges are, where you wonder who's voice you are missing, and where you can make change).
2. part of a University/College, Financial Aid, or Bursary application. Of special note for Indigenous people.
3. your professional "rudder".
4. part of a student auto biographical portfolio.
5. a personal growth plan.

Ultimately, self-location makes the world more fair, ethical, and inclusive.



Student Handout 1: Brainstorm Space: Self-location

Kovach cites Meyer (2004) and Hampton (1995) in her book *Indigenous Methodologies: Characteristics, Conversations, and Contexts* (2009), **"Situating self implies clarifying one's perspective on the world"** (emphasis added, p. 110).

Name/Nom: _____

Block: _____



Student Handout 2: **How to Write a Positionality Statement**

Writing a positionality statement helps you to intentionally reflect on your identity, life history, experiences, values and the things/issues that are important to you. This reflection can help you determine what aspect of your identity is of broader sociological interest, which can be useful in narrowing your research interests. Even if you already know what topic you want to research, a positionality statement can help you to focus your research on issues that are important to who you are or to your political/world views. Here are some things to include in your positionality statement:

- Identity characteristics (e.g., age, gender, sexuality, ethnicity, social class, disability status, citizenship, immigration status, religion, marital status etc.)
- Life experiences (previous or current job, volunteering activities, membership in advocacy groups etc.)
- Political, philosophical and theoretical beliefs (lens through which you view and interpret the world)
- Relationship to phenomena of interest (insider and/or outsider status)

(emphasis added, Robinson & Wilson, 2022)

Social Identity Map: A Reflexivity Tool for Practicing Explicit Positionality in Critical Qualitative Research (Jacobson & Mustafa, (2019).

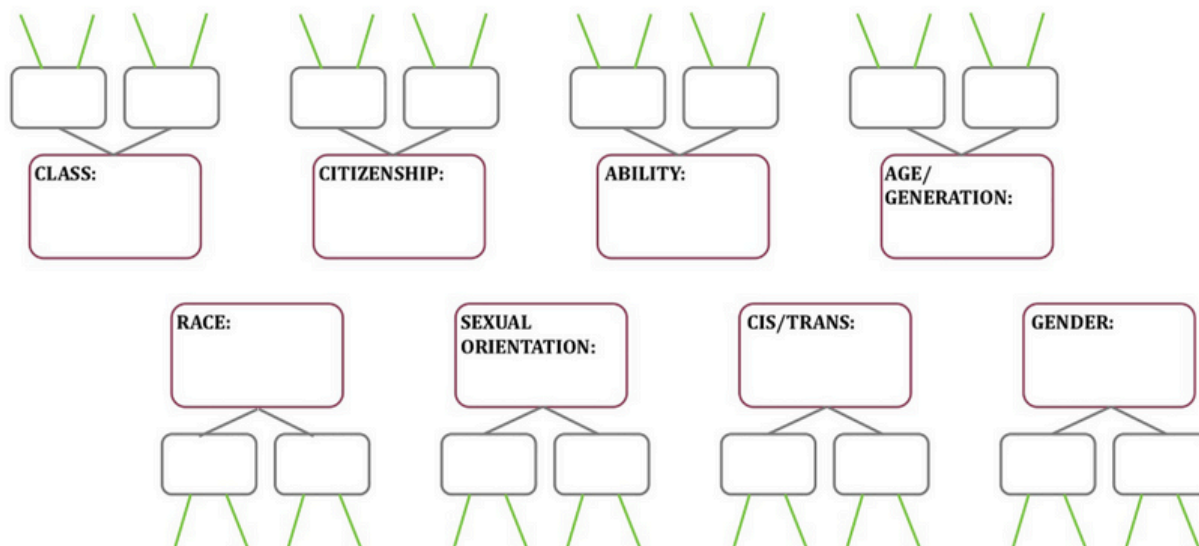


Figure 1. Blank positionality map.

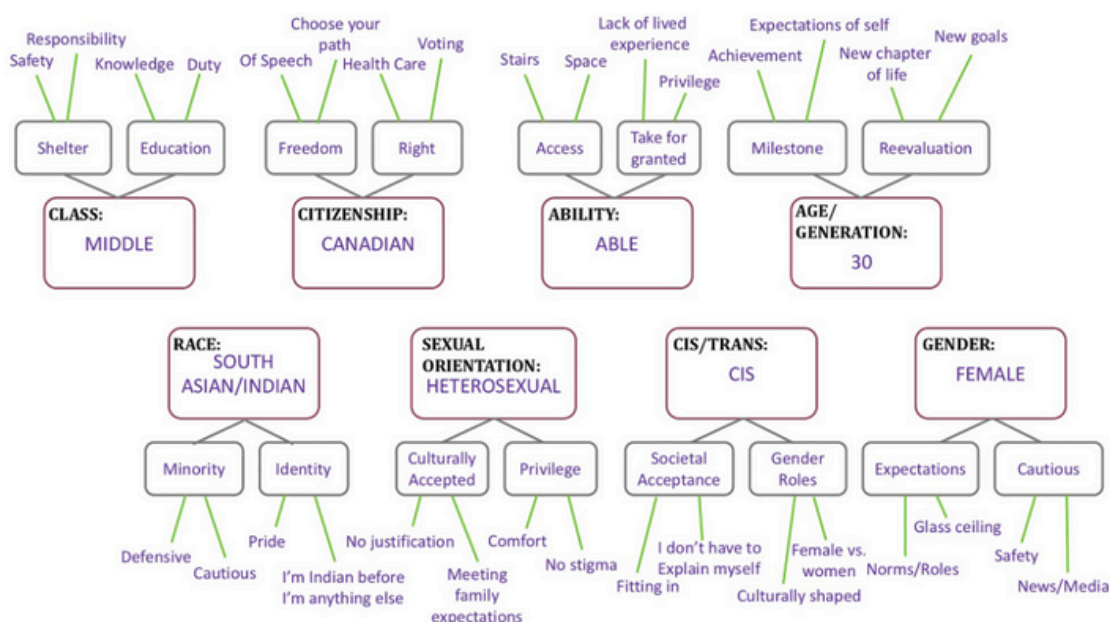


Figure 3. Completed positionality map (NM).

The third tier [in Figure 3. Completed positionality map (NM)] asks learners to reflect further and go into even more detail to identify emotions that may be tied to the details of their social identity.

WHEEL OF POWER/PRIVILEGE



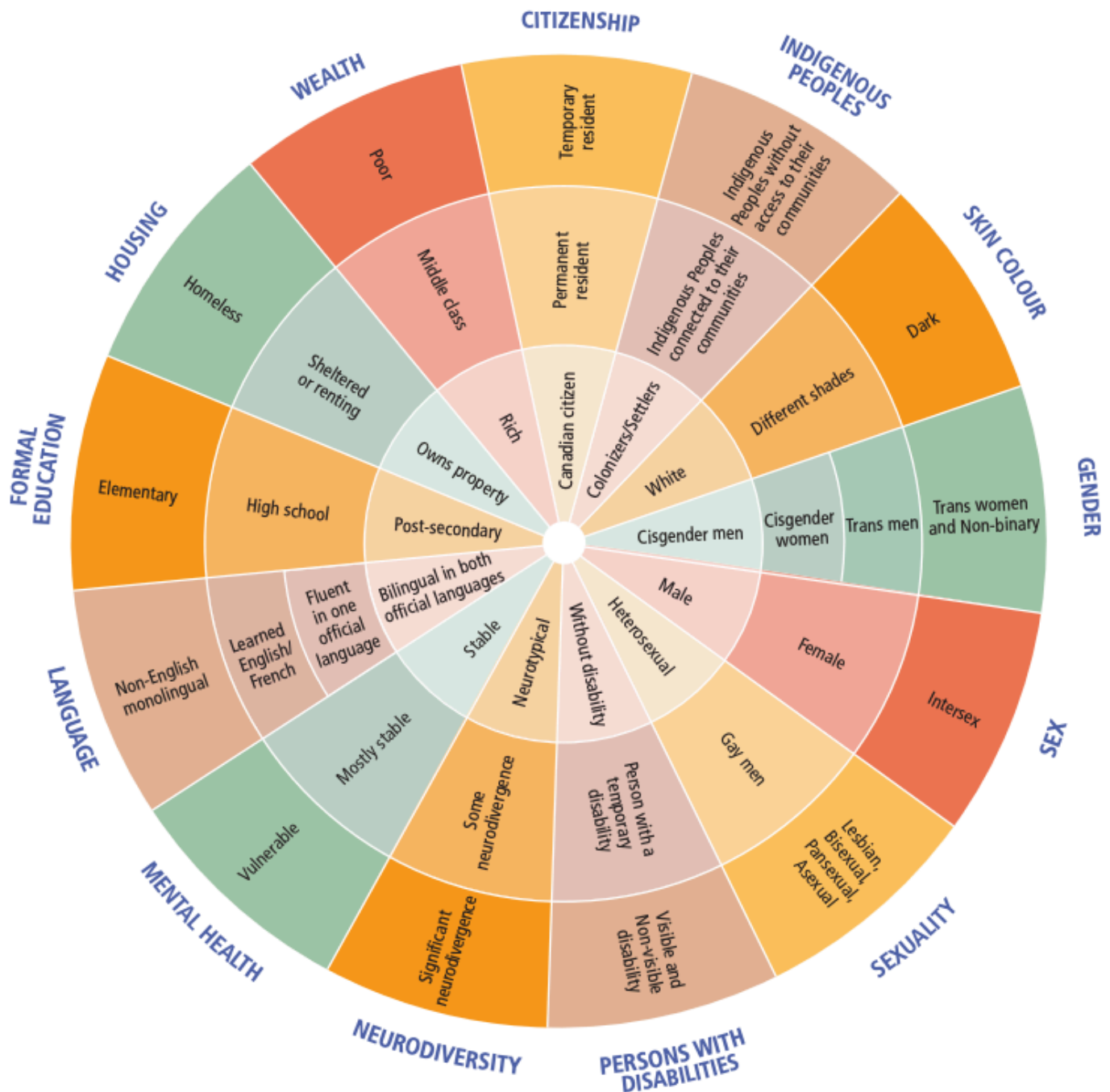
Adapted from ccrweb.ca

@sylvriaduckworth

(Duckworth, 2020)

WHEEL OF PRIVILEGE AND POWER

(the closer you are to the centre, the more privilege you have)



Note: the categories within this wheel are only examples in the Canadian context, and we should not limit ourselves to them. Intersectionality is a broad concept, and this tool is only a beginning point.

(Government of Canada, n.d.)

Student Handout 3: Autobiographical Essay

Essay format with the 5-R's of Indigenous Research: Your Self-Location Statement

Name/Nom:

Block:

Essay draft ideas:

Purpose: What is this paper for? What will it help you gain?

Self-location: Who are you? What connections do you want to honour in your story? Reference the Power Privilege Wheel. (Relational)

What responsibilities do you carry in your life, to others, to your community, to yourself? What does being a good relative, student, or community member mean to you? (Responsibility)

What parts of your life story feel most meaningful or connect to who you are now? What personal experiences help others understand your identity or background? (Relevance)

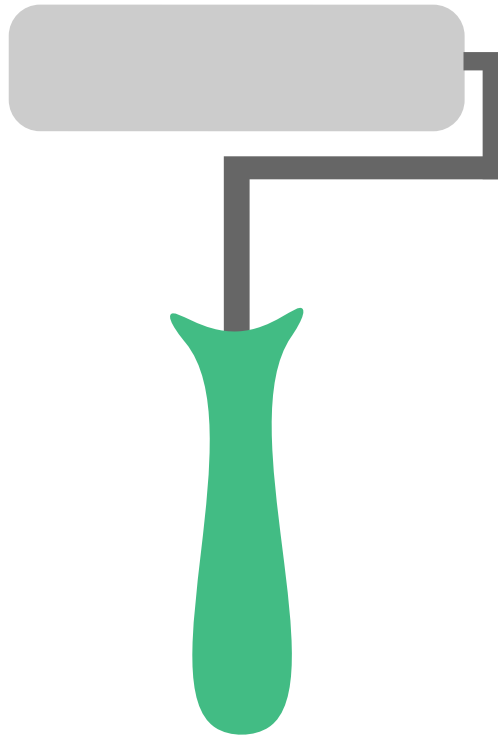
Who has helped shape you, and how do you give back or carry their teachings forward? How do you honour what others have taught or given you? What do you intend to do with your skills/knowledge once you reach your goals? (Reciprocity)

What people, teachings, places, or traditions do you hold deep respect for? How has respect shaped your choices, values, or relationships? (Respect)

Write a multi-paragraph essay about your experience, challenges, and goals for the future.

Your essay should meet the following criteria:

1. 1 page only (500 words)
2. 12 point font size
3. Multi-paragraphs
4. Writing demonstrates effort, thoughtful planning, revision and editing.
5. Free of grammar, spelling, punctuation, and capitalization errors.
6. Essay is organized in a logical way that enhances the reader's understanding and builds interest.
7. Student communicates their strengths, accomplishments, and experiences in a detailed and thoughtful manner.
8. Careful attention to detail & choice of words that contribute to the reader's enjoyment and understanding.



The Roller:
Indigenous Academic Resource List,
Themes for your deep dives &
paradigm shifts:

- 1.Theme: Land Back**
- 2.Theme: Why I do not use
“Braiding Sweetgrass”**
- 3.Resource List**
- 4.Roller: Appendix 3: Poster
quotes, original artwork, student
worksheets, 5 R’s of Indigenous
Research worksheet, & long
quotes, etc.**

Embed Indigenous Perspectives
into Your [Science] Framework

The Roller: Indigenous
Academia Resource List
and Leads for your deep
dives

Roller 1.Theme: Land Back

What is Land Back? by David Suzuki Foundation shares many videos and research. (April 5, 2021). Retrieved from <https://davidsuzuki.org/what-you-can-do/what-is-land-back/> (Article accessible via web with text content).



QR Code and link to David Suzuki Foundation's article "What is Land Back?"

CBC Article: Land back is complicated. Here's what we can learn from a B.C. island returned to Saanich people. (March 2, 2023). Retrieved from <https://www.cbc.ca/radio/unreserved/land-back-is-complicated-here-s-what-we-can-learn-from-a-b-c-island-returned-to-the-saanich-people-1.6761790> (Article accessible via web with text content).



QR Code and link to CBC's article "Land Back is complicated"

Embed Indigenous Perspectives
into Your [Science] Framework

The Roller: Indigenous Academia Resource List and Leads for your deep dives

Theme: Land Back, continued

#LandBack: What does it mean & how do you enact it? by Yellowhead Institute a 4min 5 second YouTube video. Retrieved from <https://www.youtube.com/watch?v=mouBKKNgAx0> (Video with captions, transcripts, or audio descriptions available).



QR Code and link to Yellowhead's YouTube video "#LandBack: What does it mean & how do you enact it?"

Hakai Magazine article: In Coastal British Columbia , the Haida Get Their Land Back. Retrieved from <https://hakaimagazine.com/news/in-coastal-british-columbia-the-haida-get-their-land-back/> (Article accessible via web with text content).



QR Code and link to Hakai Magazine's article "In Coastal British Columbia"

Briarpatch magazine has an article and a full issue on the topic: Four case studies of Land Back in action (September 10, 2020). Retrieved from <https://briarpatchmagazine.com/articles/view/four-case-studies-land-back-in-action> (Article accessible via web with text content).



QR Code and link to Briar Patch Magazine's article "Four Case Studies"

Theme: Land Back, continued

Land Relationships Super Collective. (n.d.). Activities. Retrieved February 24, 2025, from <https://www.landrelationships.com/activities> (Webpage with accessible text content and resources).

This page outlines various initiatives, including the Land Education Incubator and the development of the Land Education Dreambook, which provide resources for Indigenous community organizations to design land education programs for youth.



QR Code and link to website "Land Relationships Super Collections"

Tkaronto CIRCLE Lab. (n.d.). Land Education Dreambook. Retrieved February 24, 2025, from <https://www.landeducationdreambook.com/> (Webpage with accessible text content and resources)

The Land Education Dreambook offers guided activities to assist organizations in developing land education programs for youth, emphasizing the importance of fostering meaningful relationships with the land.




QR Code and link to website "Land Education Dreambook"

Roller 2. Theme: “Why I do not use ‘Braiding Sweetgrass’” (Dr. Zoe Todd, 2024).

Dr. Todd offers a great explanation why not to use the text, via social media and shared here with permissions.


1

 **Dr Fish Philosopher Todd** 🐟 🌱 (an archive) @ZoeSTodd
I gave away all my copies of Braiding Sweetgrass in 2021+stopped teaching it because I realized that if an Indigenous sister builds a body


of work without fulsome acknowledgment of Critical Indigenous Studies and the 4th World, it's for a settler audience, not for transformation.

5:06 AM · Apr 30, 2024 · 66.2K Views


2

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1 ..
When the spell was broken and I started to analyze the text for how it deals with whiteness, ‘white possession’ (Moreton-Robinson 2015) & ‘settler politics of recognition’ (Coulthard 2014), I realized it was another anthropological reimagining of pan-Indigenous life.


3

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1 ..
The real test for me though was in how white folks and folks aligned with whiteness were mobilizing this ‘braiding’ body of work above and over (and against) folks who are working in explicitly anti-imperialist registers & putting their bodies on the line against police states.


4

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1 ..
Took me a while to publicly critique the work tho, because as critical Indigenous scholars we are quickly labelled as ‘aggressive’ if we question reconciliation & other liberal larks. Even as the state arrests & brutalizes land protectors in one breath and ‘braids’ in the other.


5

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1
I hope my work is never ever used to justify occupation by the settler state.


6

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1 ..
The enduring lesson for me: everything, I mean everything, can be weaponized so long as ‘white possession’ (Moreton-Robinson 2015) and ‘settler politics of recognition’ (Coulthard 2014) are in place. And it was diffractive reading of all these texts together that changed me. 🐟

7

 **Dr Fish Philosopher Todd** 🐟 🌱 (an a... @ZoeS... · Apr 30, 2024 x1
Huge credit to Rowland Robinson for turning me towards Fourth World frameworks and David Parent for turning me towards Aileen Moreton-Robinson's work — our colleagues teach us what to read where settler disciplines (in my case biology and anthro) failed to!

8

 **Dr Fish Philosopher Todd** 🐟 🌱 (an arc... @ZoeST... · Apr 30, 2024 ...
Tweets can often feel ‘sharper’ than the underlying work. Here is my recent thinking through how the state is using ‘braiding’ where it ought to honour Indigenous sovereignties instead.

9

Here is a keynote talk by Dr. Todd , for a contextual note.

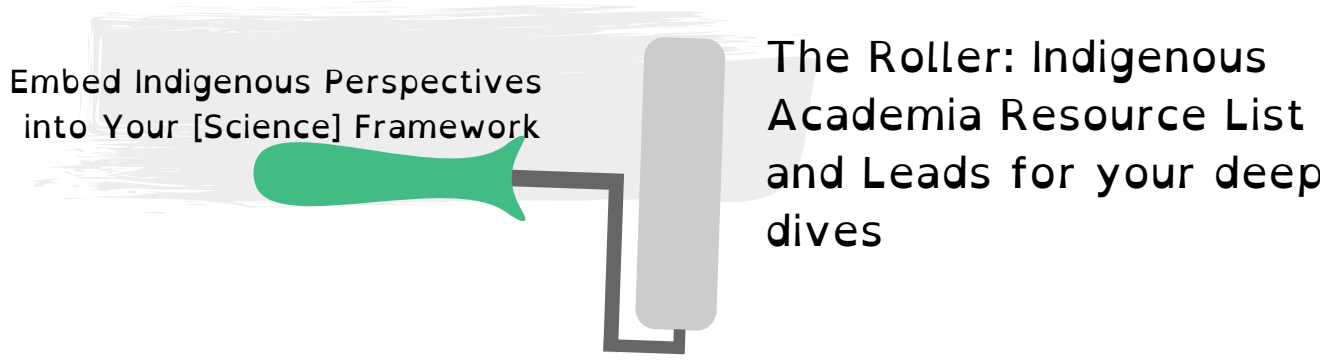


QR Code to YouTube video “Zoe Todd keynote talk recording”, retrieved from <https://www.youtube.com/watch?v=ofcn95DmKUs> a 52 min 33 second UBC Centre for Climate Justice talk.

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<https://x.com/ZoeSTodd/status/1785279528056791182>





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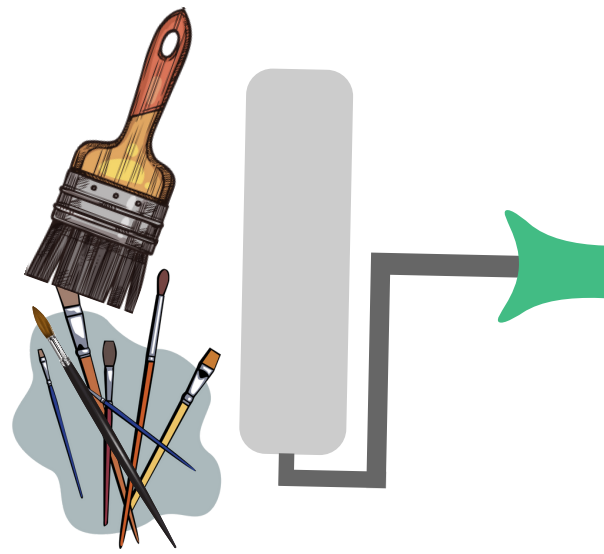
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Roller: Appendix 3

Additional student worksheets,
poster quotes, original artwork,
5 R's of Indigenous Research
worksheet, & long quotes, etc.





Stó:lō Story Sequence

Story _____

Name/Nom: _____

Block: _____

Sequence the story by drawing and writing about the beginning, middle and end of it:

beginning



middle



end



Sto:lō Story

Name/Nom: _____

Block: _____

What did the story teach you?

Draw it

Write it

“Stories have the power to make our hearts, minds, bodies, and spirits work together. Only when our hearts, minds, bodies, and spirits work together do we truly have Indigenous education (Archibald, 2008, p. 12).





Created by
Peggy Janicki
Indigenous
Mentor Teacher
March 9,
2025
version

5. Reciprocity

Reciprocity

Reciprocity considers the following:

- Does your project, idea, approach have a two-way process for learning and research exchange with Indigenous people?
- Are you co-creating with Indigenous peoples?
- Are Indigenous people also benefiting?
- How do you give back to Indigenous peoples or communities once your project is complete?

5.

Related articles and websites:

1. Sqéw'lets First Nation has attached Knowledge Labels to their Knowledge, for example, "the verified label acknowledges that this knowledge was produced through " 'correct work' in our language,...". (<http://digitalsqewlets.ca/traditional-knowledge-connaissances-traditionnelles-eng.php>, link goes to website)
2. Simon Fraser University (SFU) has created a document "THINK BEFORE YOU APPROPRIATE: A Guide for creators and designers" (https://www.sfu.ca/linch/sites/default/files/resources/teaching_resources/think_before_you_appropriate_jan_2016.pdf, PDF download, 23 pages)
3. Stó:io Nation has a Heritage Policy, found at: <https://www.srmcentre.com/files/File/Stoio%20Heritage%20Policy%20Manual%20-%20May%202003%20-%20v1.2.pdf> (PDF download, 43 pages)

5-R's of Indigenous Research

Are you creating a project for your class or school?
Are you looking to incorporate Indigenous Knowledge and/or project-based learning?

1. Go through the 5 levels of questioning and see if your project/idea meets the rules of Indigenous Research (also known as research ethics).

by Peggy Janicki, M.Ed. Indigenous Mentor Teacher



1. Relational

2. Relevance

3. Respect

4. Responsibility

Relational

"People want to know who you are, what you are doing and why" (Riddel, Salamanca, Pepler, Cardinal, & McIvor, 2017).

A RELATIONAL approach considers:

- The context in which this work is being developed
- Self-location tells who you are in relation to Indigenous peoples and this project
- Acknowledges territory or local Indigenous peoples

1.

Relevance

To ensure relevance ask yourself:

- # 2.
- Is this project relevant to Indigenous peoples?
 - What motivations do you have for this project?

Respect

To be respectful in your approach a project should:

- # 3.
- Draw from Indigenous knowledges in accurate and meaningful ways.
 - Portray Indigenous peoples, their knowledges, traditions, values, and practices in a respectful way.
 - Acknowledge Indigenous peoples and communities that have contributed to your work.

3.

Responsibility

Your approach/project takes up responsibility by:

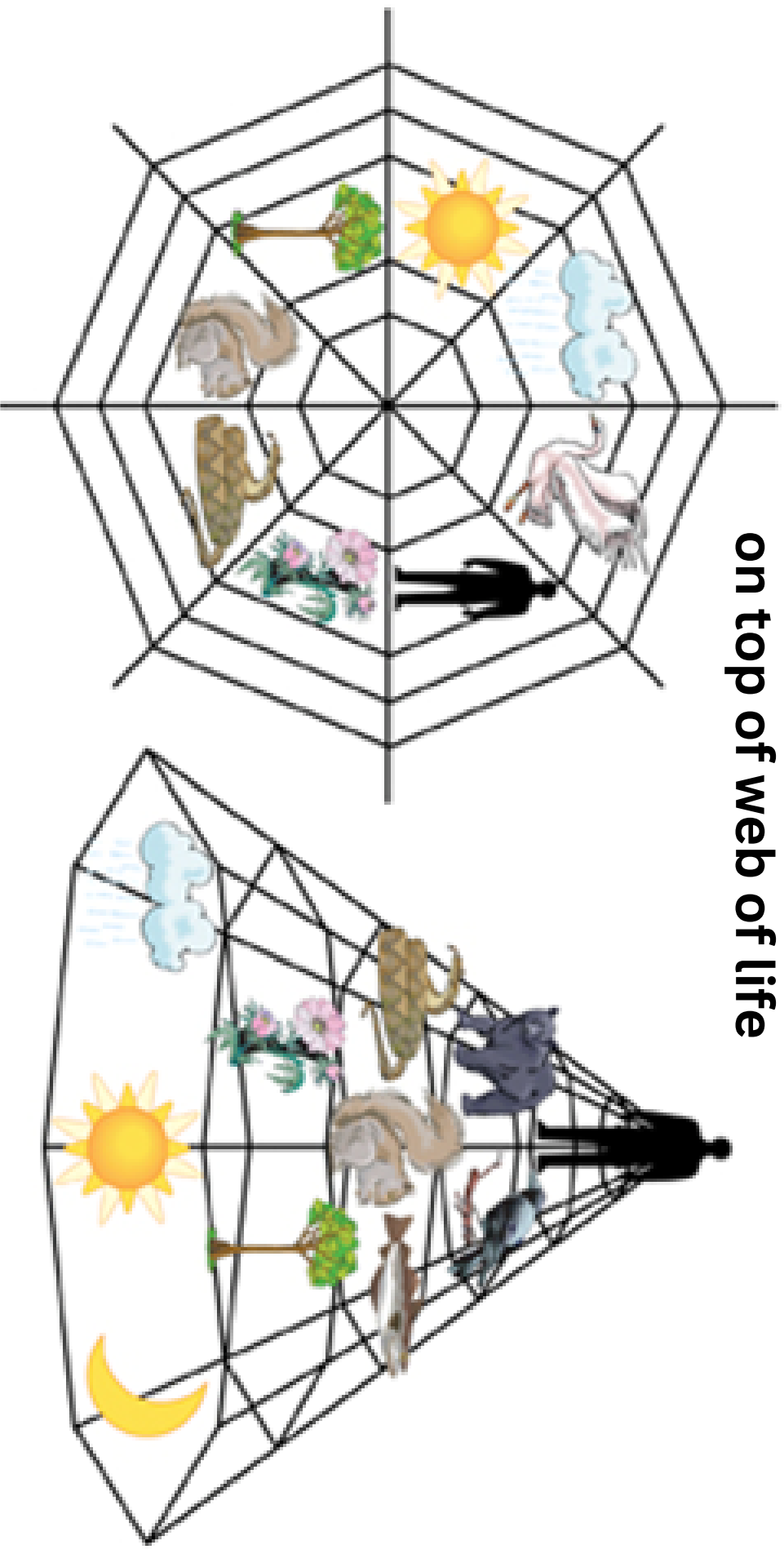
- # 4.
- Ensuring attention to protocols
 - Evaluating your process using reflection tools, similar to this one. Consulting with Indigenous peoples
 - Contributing to productive outcomes (e.g. policy, pedagogy, curriculum, learning)

4.

References

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3. Photo credits: Peggy Janicki

Humans as part of web of life VS Humans at top and centred on top of web of life



Dr. Mashford-Pringle's image highlighting the different views of human positioning in the web of life.

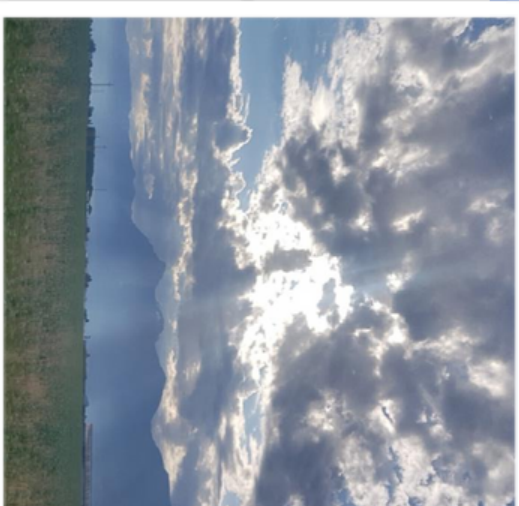
image, Ahsford-Pringle, no date n.d., shared with permissions.

Link goes to University of Toronto article about Dr. Mashford-Pringle

<https://www.dlsph.utoronto.ca/2023/09/26/incorporating-indigenous-knowledges-into-academia/>

Stó:lō TEK*

*Traditional Ecological Knowledge



Shxwél' is all around

Shxwél' means the “life force” or “spirit” connecting all things, including plants, air, earth, water, animals, and people within S’ólh Téméxw (means “our world; our land.”)



Photo Credit & drawing: Peggy Jarrick, Indigenous Mentor, Huxley SD75 Mission School District

Halq'eméylem pronunciation here: <https://www.firstvoices.com/explore/FV/section s / Data/Salish/Halkomelem/Halq'em%C3%A9ylem/search/shxwel/10 / 1> (link to website)

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S'ólh téméxw te íkw'el. Xyólhmet te mekw' stám ít kwelát.

This means “[T]his is our land. We have to take care of everything that belongs to us”

Halq'eméylem pronunciation here: téméxw - [https://www.firstvoices.com/explore e / FV/sections/Data/Salish/Halkomelem/Halq'em%C3%A9ylem/learn/word s / dbd48018-9e6b-4 ff -9c11-421babebbb3 f](https://www.firstvoices.com/explore / FV/sections/Data/Salish/Halkomelem/Halq'em%C3%A9ylem/learn/word s / dbd48018-9e6b-4 ff -9c11-421babebbb3 f) (link to website)

Our Snoweyelh (Stó:lō laws of the land)

govern our relationships with our Sxexó:mes (gifts of the creator), our land and resources, and everything that belongs to us.



Photo credit: Peggy Janicki Indigenous mentor Teacher SD75 Mission School District

7 - 6 - 5 - 4 - 3 - 2 - 1 - x - 1 - 2 - 3 - 4 - 5 - 6 - 7

Tómiyeqw

“Xwélmexw people therefore, are informed by the lessons of the past and the requirements of the future when making decisions in the present”
(Carlson, 2001, p. 28)

Tómiyeqw means all generations from great-great-great-great-grandparent to great-great-great-great-grandchild, expressing the relationship connecting people **seven generations past with those seven generations in the future** and establishing a connection between the past and future residing in those Stó:lō living today (emphasis added).

Halq'emýel'm pronunciation here: <https://www.firstvoices.com/explore/FV/sections/Data/Salish/Halkomelem/Halq'em/C3%A9yelm/sear h/t%C3%B3miyeqw/10/1> (link to website)



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