

LET'S LEARN ABOUT

Winter solstice



OVERVIEW

Thanks for learning about the winter solstice with us! In this document you'll find seasonal activities, stories and teachings to support connection with the lands, skies, waters and beings we share our home with. While we invite learners of all ages to engage with this resource, the lessons are ideal for those in **Grade 3 and older**.

This curriculum has been developed to celebrate a significant seasonal event observed this year in our Northern hemisphere on December 21: the winter solstice. The solstice reminds us of the interconnection between the Sun, the Earth and the web of life. This resource is intended to support learners in understanding the impact of the winter solstice from cultural and scientific perspectives.



WHAT TO EXPECT FROM THIS CURRICULUM

We've broken this resource into 4 different lessons, with suggested activities aligned with the BC Curriculum:

1. Sun Stand Still - The Physical Science of the Winter Solstice
2. Hibernial Stories - Exploring Culture through Story and Tradition
3. Rhythms and Patterns - Animals, Humans, Plants and Earth Cycles
4. Sustainability & Celebration of Learning

Each of these **lessons is comprised of 3 components** to explore:

- Introduction to build context and give background information
- Related media to use with questions and activities
- Suggested activities to engage with content and build understanding

ACKNOWLEDGEMENTS

While the energy and time of intentionally curating this curriculum is ours, the stories and supporting media are not. The information we have gathered comes from public domains, and still we acknowledge that there is some knowledge that is sacred and only intended to be shared with permission and/or in certain situations. We own the responsibility to include and honour Indigenous voices and to ensure that unique Nations and worldviews are respectfully acknowledged.

This curriculum invites learners to align exploration with the First Peoples Principles of Learning, a set of principles published by the First Nations Education Steering Committee and the BC Ministry of Education. These Principles thoughtfully alchemize the teachings of Indigenous Elders, knowledge keepers, and scholars to highlight relationships rather than capture the processes of a singular First Peoples' society.

We encourage folks to reach out with any questions or feedback in regards to the content shared in this curriculum. You can connect with us at education@sierraclub.bc.ca. **Huy ch' q'u, thank you, merci for witnessing this work.**

LESSON 1 • SUN STAND STILL

The physical science of the winter solstice

INTRODUCTION

Phenomenally speaking, what is winter solstice? How does it work? Winter solstice is the shortest day of the year, the day here on earth that we experience the least amount of daylight. This is because of how the earth travels around the sun.

The earth spins on an axis, a tilt, as it rotates around the sun. Around December 21st the Northern hemisphere (the half of the earth above the equator) is tilted away from the sun and, therefore, we experience less daylight. For our friends in the Southern hemisphere it is the longest day of the year because they are tilted toward the sun.

During the days around the winter solstice, the sun is so low on the horizon that it can appear to rise and set in the same place. The word solstice is of Latin origin and translates to “sun stands still”.

Lesson 1 explores the physical event of the winter solstice.



This next section includes website links for deeper learning. To explore these resources, please visit sierraclub.bc.ca/winter-solstice-resource



RELATED MEDIA RESOURCES TO EXPLORE

First Peoples Principles of Learning

<https://www.fnesc.ca/first-peoples-principles-of-learning/>

W̱SÁNEĆ 13 Moons Curriculum

<https://racerocks.ca/13-moons-acknowledgement/>

Newgrange Winter Solstice

https://www.newgrange.com/winter_solstice.htm

Time Lapse in Fairbanks Alaska

<https://thekidshouldseethis.com/post/a-winter-solstice-time-lapse-in-fairbanks-alaska>

Equinox and Solstice Demonstration

https://www.youtube.com/watch?v=W-J2kue2ca8&ab_channel=StarWalk

Equinox Quiz

<https://starwalk.space/en/quiz/equinox-solstice>

Activities

Here are some suggested activities to engage with the content and build understanding!

ACT

Act out the earth's rotation around the sun and describe what is happening using materials you have available. Watch the Solstice and Equinox [demonstration video](#) and try the [quiz](#).

APPLY

Based on what you know about the earth's position during the winter solstice, *how do you think beings in Russia, New Zealand and Uganda experience this time of year?*

REFLECT

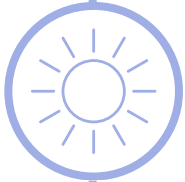
Notice what time the sun sets over the next 5 days. *Was it easy to keep up with this practice?* Pay attention to places around your school or home that receive the most natural light. Consider 3 reasons why understanding the sun's rotation would benefit humans or other beings.

FIRST PEOPLES PRINCIPLES

One of the First Peoples Principles of Learning states that learning “involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.” Read the [WSÁNEĆ 13 Moon's Acknowledgement](#) in preparation for lesson 2.

EXTEND

Watch the [video of the Newgrange monument](#). Cut a hole in a box and position it so that the sun passes through at a particular time of day. Test the box and adjust the location as necessary over the next 5 days. *What did you notice? Why do you think the builders of Newgrange chose to position the chamber in such a way?*



LESSON 2 • HIBERNAL STORIES

Exploring culture through story and tradition

INTRODUCTION

Here in the Northern hemisphere, December 21st marks the date of this year's winter solstice. It is a time to turn inward and has inspired traditions around the globe. This is a day of rest and a time to learn from loved ones. The solstice reminds us of the deep interconnection between the Sun and the Earth and all the beings which inhabit it.

Beings throughout the planet are entering into their winter forms and are beginning to display different seasonal behaviors. For example, many animals are entering hibernation. There are tons of stories shared that celebrate these community members. As we turn inward and spend more time with our families during the cold season, there are plenty of lessons to be learned from our more-than-human community members and through stories passed on over generations.

Lesson 2 explores stories and cultural teachings of the winter solstice.



This next section includes website links for deeper learning. To explore these resources, please visit sierraclub.bc.ca/winter-solstice-resource



RELATED MEDIA RESOURCES TO EXPLORE

How Grandmother Spider Stole the Sun

https://www.plt.org/wp-content/uploads/2016/08/PLTPreK-8_Activity-18_Tale-of-the-Sun_Student-Page_How-Grandmother-Spider-Stole-the-Sun.pdf

Mouse Celebrates Winter Solstice: A Lesson Plan from SD 71

<https://www.comoxvalleyschools.ca/indigenous-education/wp-content/uploads/sites/25/2021/05/Mouse-Celebrates-the-Winter-Solstice-Lesson-Plan.pdf>

Ant & Grasshopper: Aesop's Fable

<https://www.longlongtimeago.com/once-upon-a-time/fables/from-aesop/the-ant-and-the-grasshopper>

What does Solstice mean to you? Ask an Elder

<https://www.cbc.ca/news/indigenous/ask-an-elder-cbc-indigenous-1.4459582>

WSÁNEĆ 13 Moons Curriculum

<https://racerocks.ca/13-moons-acknowledgement/>

Activities

Here are some suggested activities to engage with the content and build understanding!



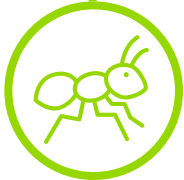
ACT

Read the story about Grandmother Spider. Find a story from the place you live about sun or light. *What does your story have in common with the Muskogee Creek story? What elements are different?*



APPLY

What stories does your community tell this time of year? What lessons are found in these stories? Create your own story using the themes of the winter solstice, what characters did you use and why?



REFLECT

Read the story of the Ant & the Grasshopper. In some versions of this fable, the ants share their food and shelter with the grasshopper. *Do you think the ants should have shared? How do you prepare for the winter? How can you help others during the coldest and darkest times of year?*



FIRST PEOPLES PRINCIPLES

One of the First Peoples Principles of Learning is “learning involves generational roles and responsibilities”. Consider the generational roles involved in preparing for winter festivities in your community. *What responsibilities do you share this time of year?*



EXTEND

The sun isn't the only celestial object we can witness this time of year! Explore the WSÁNEĆ 13 Moons Curriculum. *Which moon will be visible shortly after the winter solstice this year? What are the WSÁNEĆ teachings of this moon?*

LESSON 3 • RHYTHMS AND PATTERNS

Animals, humans, plants and Earth cycles

INTRODUCTION

There is much to learn from how other beings adapt and problem-solve to cope with seasonal changes. Many animals slow their heart rate during the winter or enter a state of deep rest.

Freshwater fish and amphibians enter deep pools or lakes to hibernate. Here, they are protected by the warm layer below the ice.

Despite popular belief, bears don't truly hibernate during this time. Instead, bears enter a state called torpor which is like light hibernation. This allows them to wake up during warmer days. Bear's winter habits could change dramatically in the north in response to a changing climate.

Plant species also respond to seasonal changes. For example, did you know that carrots taste sweeter in the winter? In the colder months, plants (like carrots) produce more sugar as protection from freezing. Deciduous trees produce a lot of energy in the long summer days and absorb it back from their leaves through a process called senescence. The thick bark of these trees provides insulation for them to survive throughout the whole winter!

Lesson 3 explores the biological experiences of winter and invites learners to observe their surroundings.



This next section includes website links for deeper learning. To explore these resources, please visit sierraclub.bc.ca/winter-solstice-resource



RELATED MEDIA RESOURCES TO EXPLORE

How Canadian Wildlife Survives Winter

<https://naturecanada.ca/discover-nature/land-wildlife/how-canadian-wildlife-survives-winter/>

How do Animals Survive Winter in Canada?

<https://blog.cwf-fcf.org/index.php/en/how-do-animals-survive-the-winter-in-canada/>

Why Carrots Taste Sweeter in Winter

<https://www.youtube.com/watch?v=W8isLHTZN-Q>

A Forest Year (Timelapse Video)

<https://thekidshouldseethis.com/post/a-forest-year>

Nature's Signals

<https://www.fnesc.ca/wp/wp-content/uploads/2020/11/1-4-BLM-Science-5-9.pdf>

How do Trees Survive the Winter?

<https://www.nationalforests.org/blog/how-do-trees-survive-the-winter>

LESSON 3 • RHYTHMS AND PATTERNS

Activities

Here are some suggested activities to engage with the content and build understanding!

ACT

Think of a routine or practice you could adopt if you wanted to become more aware of nature's cues. Try adopting the practice for 1 week.

APPLY

Choose your own way of documenting your observations of seasonal changes (journal, vlog, sketch book, etc.) *What did you choose to include? How did you decide?*

REFLECT

Here are some questions to reflect on. *What are some changes you have noticed around your home, school or community this month? How might paying attention to seasonal changes be important for species survival?*

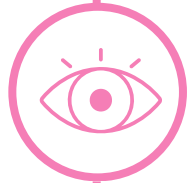
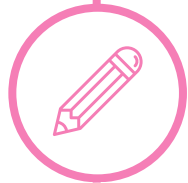
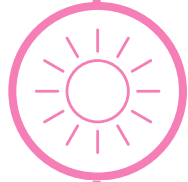
FIRST PEOPLES PRINCIPLES

One of the First Peoples Principles of Learning is "learning recognizes the role of Indigenous knowledge". Read "Understanding Nature's Signals". Try connecting with a Knowledge Keeper or Elder in your community to learn some of the traditional names and uses of the plants in your region, try to find ways to recognize them without their blooms or berries. First Voices is a language resource to support your learning:

<https://www.firstvoices.com/languages>

EXTEND

Choose a plant in your community, one you can see most days. Document their change over the course of the season, or challenge yourself to notice how the being changes over the course of a school year! Synthesize your findings as a poster, video or digital presentation. We invite you to share your creations with us at education@sierraclub.bc.ca — we'd love to see what you come up with!



LESSON 4 • SUSTAINABILITY

Sustainability and celebration of learning

INTRODUCTION

While the winter solstice is a time of turning inward, hibernating and adapting, it is also often associated with another type of sociocultural phenomenon; celebration!

From Turtle Island (a name used by some Indigenous communities to describe North America) to Europe, Asia and Oceania, Central America, Africa and Antarctica, communities the world over gather during this time of year to share the bounty preserved in the warmer months, and to exchange stories and gifts to celebrate the return of the light.

Lesson 4 explores cultural expressions of the winter solstice. It also offers suggestions for festive practices that are mindful of our connection with (and responsibility to) the web of life and future generations.



This next section includes website links for deeper learning. To explore these resources, please visit sierraclub.bc.ca/winter-solstice-resource



RELATED MEDIA RESOURCES TO EXPLORE

Iran - Yalda

<https://www.tappersia.com/yalda-night/>

Zuni and Hopi of United States - Soyal

<http://dev.ueat.utoronto.ca/12-days-of-celebrations-soyal/>

Peru - Inti Raymi

<https://www.spanish.academy/blog/what-is-inti-raymi-in-peru-and-why-was-it-banned/>

China - Dongzhi

<https://www.travelchinaguide.com/essential/holidays/dongzhi-festival.htm>

Vancouver - Lantern Festival

<https://www.secretlantern.org/about>

Guide to a Waste-less Holiday Season

<https://sierraclub.bc.ca/wp-content/uploads/WASTE-LESS-HOLIDAYS-Nov-2020.pdf>

Embracing Green Celebrations - Regional Recycling

<https://www.nationalforests.org/blog/how-do-trees-survive-the-winter>

Activities

Here are some suggested activities to engage with the content and build understanding!

ACT

Choose one of the winter solstice celebrations shared in the related media section, or another one you've heard of or found on your own. Create an invitation or poster that shows your understanding of the festivities.

APPLY

In your family, community or school, choose a way to celebrate the winter solstice in a way that responsibly uses resources and connects with nature.

REFLECT

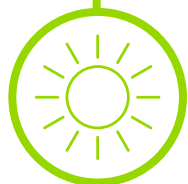
Here are some questions to reflect on. *Do you already celebrate the winter solstice? What traditions do you observe? What celebrations do you recognize in the winter?*

FIRST PEOPLES PRINCIPLES

One of the First Peoples Principles of Learning is "learning requires exploration of one's identity". Consider where your roots are from. *Does your lineage have any ways of celebrating this time of year?* Ask a family member or an older person that is close to you to share a story of winter time.

EXTEND

Try an attitude of gratitude! Make a list of 5 things from this year that you are grateful for. Creating space to acknowledge the good things in life helps cultivate personal resilience. Winter solstice can be a dark time (literally!) but getting outside and connecting with the lands and waters can help stave off the Winter Blues.



Keep learning with Sierra Club BC!

EXPLORE OUR LIBRARY OF EDUCATIONAL RESOURCES AND ACTIVITIES

If you enjoyed this curriculum, we invite you to check out our growing library of materials that can help learners in your community connect with the web of life. You can access those learning tools at sierraclub.bc.ca/teachers.

We also offer in-person environmental workshops for youth and professional development opportunities for educators to help bring place-based learning into the classroom. If you'd like to schedule a session with our facilitators of learning, [please request a workshop here](#).



ABOUT SIERRA CLUB BC

At Sierra Club BC we are creating a more inclusive movement, empowering new partners and local leaders to take positive steps in their communities that help restore balance to vital ecosystems in B.C.

As part of this work, we've facilitated environmental school workshops and educational resource development for over 20 years. Our programs use a place-based approach that centres ecological and cultural knowledges. They facilitate a shift to respectful, reciprocal relations with the land, water and all living beings.

We believe that education, especially for children and youth, is key in ensuring future generations are well-versed in stewarding abundant ecosystems and a stable climate. After all, they're the decision-makers of tomorrow!

We are so grateful that you're on this journey with us. **Together, we can build a brighter future for all.**



HAVE QUESTIONS?

It's a pleasure to connect with you and the learners in your community. Please don't hesitate to contact us if you are looking for ideas, other supports, or just to chat!

You can reach us via email at education@sierraclub.bc.ca.