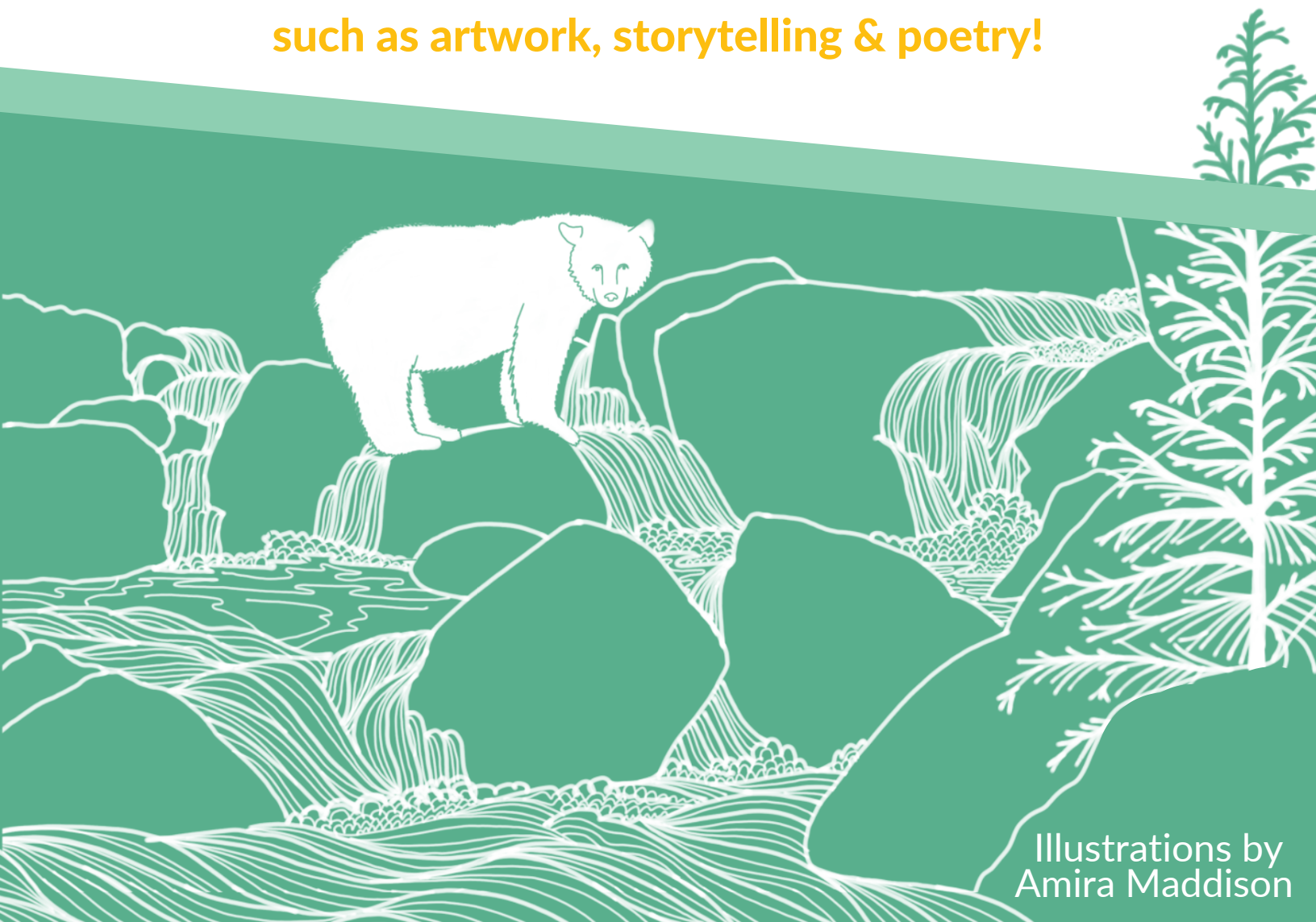




SIERRA
CLUB BC

COASTAL TEMPERATE RAINFOREST

Explore B.C.'s rainforest with fun activities
such as artwork, storytelling & poetry!



Illustrations by
Amira Maddison

HOW TO USE THIS GUIDE

BUILD YOUR OWN ADVENTURE

This booklet will help you discover the story of the coastal temperate rainforests in British Columbia. The content is designed primarily for students in Grades 3-5. Use this booklet as a guide to explore forests in your area and prompt questions about their history and current use.



Colour in the pictures as you go along.

Printing: If you don't have access to a printer, simply follow along on a device and complete the activities on blank paper or in your own nature journal.

Take the time to **acknowledge** that the land you live on has been stewarded by Indigenous peoples for millennia before the arrival of Europeans and other immigrants. Indigenous peoples around the world continue to steward the land and waters, benefiting all lifeforms. If you don't know the names of the Indigenous Nations who have traditionally called the area you live home, take the time to read about them online. Learn about territories, language and treaties in your area at native-land.ca/

Fill in the blank to write the names of the Indigenous peoples who have traditionally called the area you live home:



TAKE ONLY MEMORIES LEAVE ONLY FOOTPRINTS

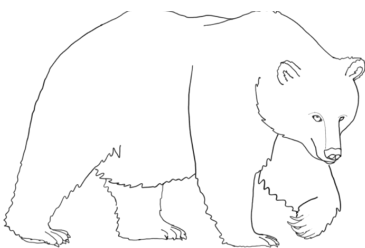


Leave no trace. What does the three-word slogan really mean? Simply put, it is the best practice to follow to enjoy and respect our natural spaces. It means a lot more than just packing out your garbage.

Leave What You Find: Make sure everything from nature stays in nature. Even the smallest flower plays an important role in the ecosystem. Try using a camera to document your favourite treasures during your time outside. Create a nature journal or slideshow with your pictures to preserve your memories. Let “take only memories (and nowadays pictures or photographs) and leave only footprints” be your mantra.

Respect all beings: Animal encounters can be exciting and a great learning opportunity. Know before you go which animals you’re likely to encounter and any safety concerns. Observe from a distance and never approach or feed beings. It is best to only observe small beings such as insects and worms, but if you do pick them up, treat them with extreme care and place them gently back where you found them.

Stay on designated paths and trails: Your feet can have a big impact on the surrounding habitat. In some parks, you may come across restoration areas (designated by signs) where it is especially important to only walk on designated paths. Check out these areas and read about the species that traditionally live in that particular ecosystem.



Be Considerate of Others: We share these outdoor spaces with each other. Be courteous to other users and let the sounds of nature prevail. Follow all physical distancing guidelines such as a 2 metre separation between yourself and other people.

INTRODUCTION TO THE COASTAL TEMPERATE RAINFOREST

About the coastal temperate rainforest in B.C.:

The coastal temperate rainforest in B.C. is part of a larger coastal temperate rainforest that stretches along the coastal regions of BC as well as to the north (in Alaska) and to the south (in Washington, Oregon and northern California). This combined area is the largest temperate rainforest on earth! B.C.'s coastal temperate rainforest mostly includes coniferous trees like the Western Red Cedar, Yellow Cedar, Douglas fir, Sitka spruce and Western hemlock.

Why is it called a rainforest? A rainforest is a forest with high levels of continuous rainfall. The coastal temperate rainforest in B.C. is one of the wettest non-tropical places in the world. These temperate rainforests receive lots of rain throughout the year — approximately 2-5 metres of rain falls per year!

Why is it called temperate? Temperate refers to a region or climate with mild temperatures, meaning it doesn't get extremely hot or extremely cold. The average temperature in the winter is 0 degree Celsius and the average summer temperature is 20 degree Celsius.

Why is it called coastal? Thanks to being close to the ocean, or the coast!

Temperate rainforests have moderate temperatures and a wet, cool climate.

1.8% of Canada's forests are coastal temperate rainforests. That's approximately 74,000 square kilometres!

B.C. is also home to one of very few inland temperate rainforests, stretching from the Cariboo Mountains east of Prince George to the Rocky Mountains close to the Alberta border.

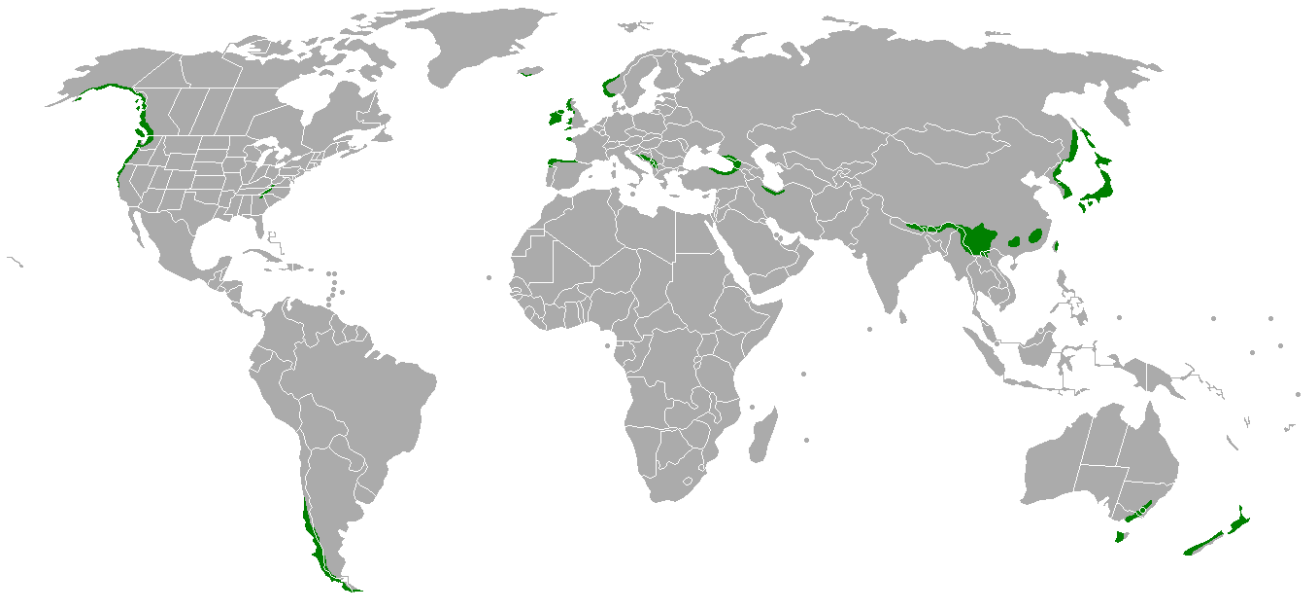
TEMPERATE RAINFORESTS AROUND THE WORLD

DID YOU KNOW?

Temperate rainforests are found in small regions around the world in places such as the west coast of North America, New Zealand, Tasmania (Australia), Japan, Chile and Norway.

DID YOU KNOW?

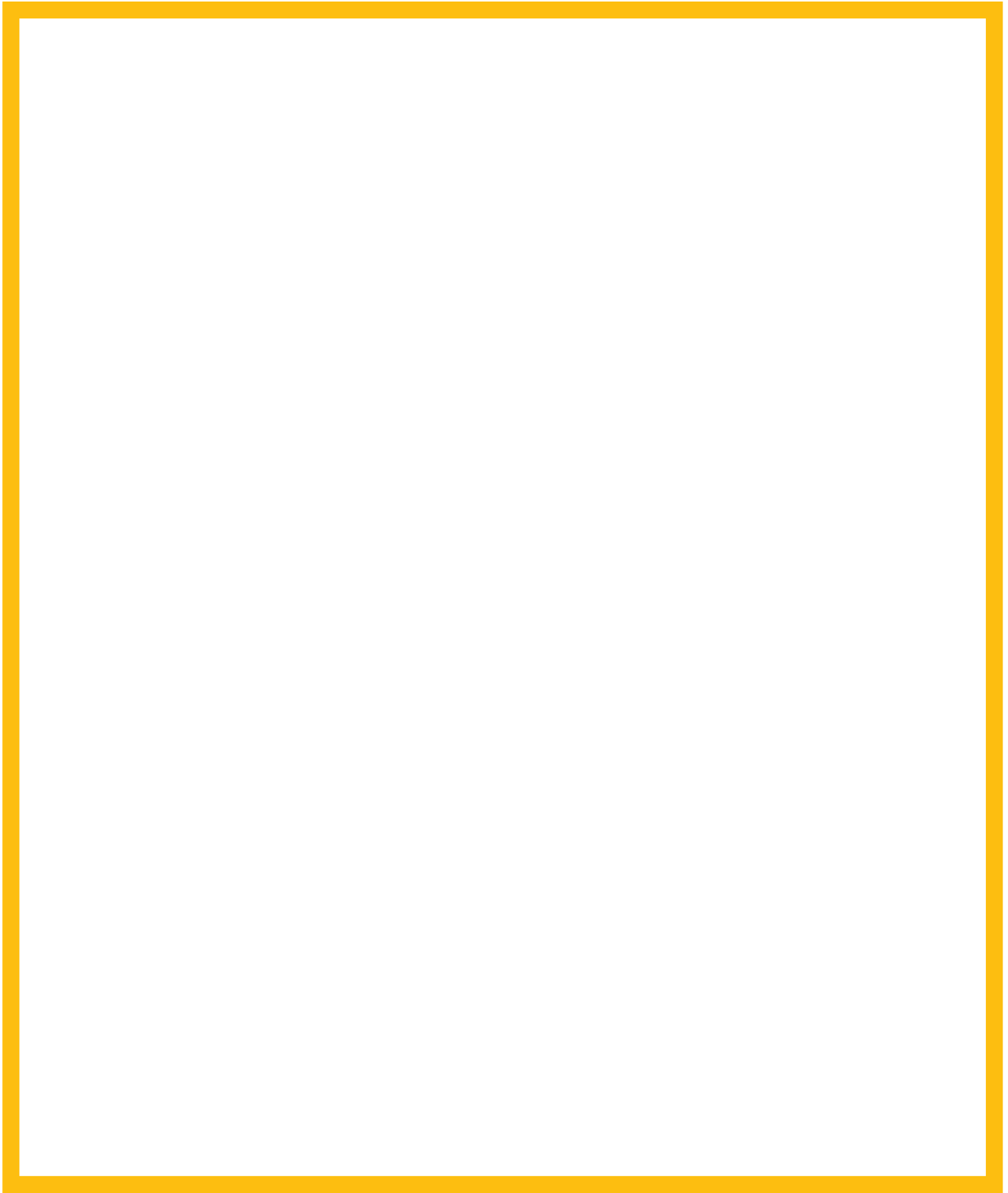
Only about 0.5% of landmass worldwide was originally covered by intact temperate rainforest. Today most of the areas have been logged and converted into younger forest under intensive forest management.



- Where is British Columbia located on this map? Circle it!
- Have you ever visited the temperate rainforest in B.C.?
- Have you ever traveled to a temperate rainforest somewhere outside of B.C.?
- What kinds of plants, animals, trees, amphibians, reptiles and fungi did you see living in that forest?

IDEA: Interview members of your family and see if they have ever visited a temperate rainforest in B.C. or anywhere else in the world! Draw a picture or share your photos with us!

DRAW A RAINFOREST BEING



Send us a photo or a drawing from the temperate rainforest to education@sierraclub.bc.ca or share a picture on Instagram at tag @SierraClubBC and #SierraClubBCEd OR Post a photo on the Google Classroom!

MATCH RAINFOREST BEINGS

Check your answer with the key on the last page

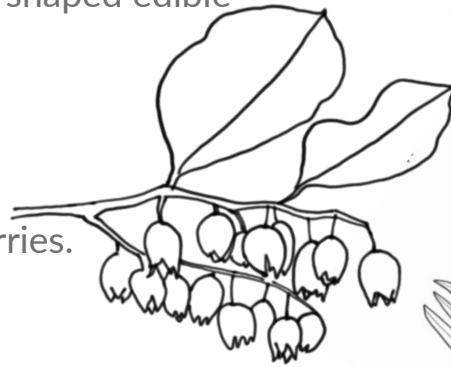
Western Red Cedar

Called the Tree of life by the Coast Salish people, its branches droop in a J-shape and it has fibrous, stringy bark. The leaves look like small scales.



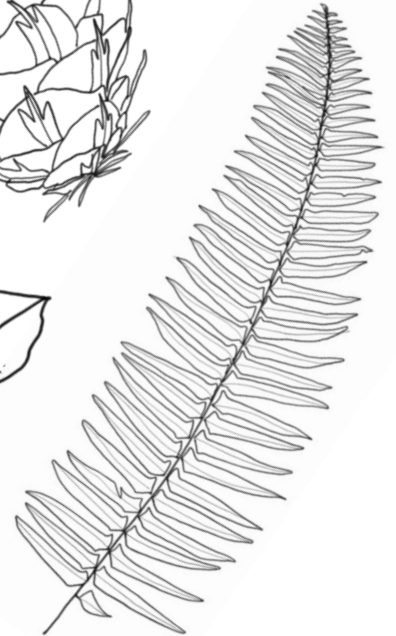
Salal

Larger, broad , waxy leafy ground-cover plant. In summer salal has large clusters of bell shaped edible dark blue to purple berries.



Red Huckleberry

Shrub with small, bright, oval-shaped leaves and small, red, round edible berries.



Douglas Fir

It's cones have pointed bracts between each woody scale. Look for a three pointed bract on it's cone.



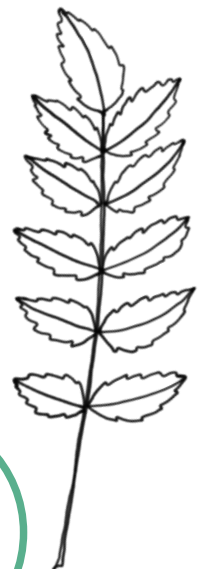
Sitka Spruce

Stiff, sharp needles point out on all sides and are prickly to touch. The cone has smooth scales like a fish.



Sword Fern

Blade is lance-shaped and each blade has alternating leaflets that grow out of a central stipe (stem).



Oregon Grape

Leaves are egg-shaped with spiny teeth; looks like holly. Be careful! My pointy leaves can poke you.



RAINFOREST RAINFALL CHALLENGE

This activity will give you a better idea about the amount of rain that falls in different communities here in B.C.

Materials needed:

- Minimum of 2 metres of ribbon/rope/string (that you can easily cut)
- Ruler or measuring tape
- Scissors
- Tape (if you can hang up the string on a wall)

Step 1: Measure and cut string for the average rainfall in the village of Bella Coola, located in the Great Bear Rainforest on the coast of Northwestern B.C.

Step 2: Measure and cut string for the average rain and snow fall in your own community.

Suggestion:

Using a small piece of tape, hang the strings on a wall side by side of each other to make a comparison. Just make sure the tops of the strings are at the same level!

Average Precipitation Chart

Conversion 10mm = 1 cm

To convert mm to cm, divide by 10: For example, 1500mm / 10 = 150cm

Tip: Converting the measurements will make measuring the string easier!

Abbotsford 1538 mm

Vancouver 1457 mm

North Vancouver 2522 mm

Courtenay/Comox 1154 mm

Nanaimo 1165 mm

Victoria 705 mm

Kelowna 345 mm

Penticton 246 mm

Bella Coola 1199 mm

Salt Spring Island 987 mm

Tofino 3271 mm

Kamloops 345 mm

Cranbrook 385 mm

Fort St John 445 mm

Prince Rupert 3060 mm

RAINFOREST RAINFALL CHALLENGE

Compare how much precipitation falls in Bella Coola versus where you live in your home community!

If you have enough string, you can compare the average rain and snow fall for a variety of communities with where you live.

Which community receives the most precipitation?

Which community receives the least?

Why do you think it's so different?

How does the annual precipitation level effect the species of plants and trees that grow in a particular area?

After this activity, save the string and use it for other activities.

DID YOU KNOW? The Ponderosa pine tree is found in southern BC in the rolling hills and the Okanagan Valley grassland. It can survive in the hot dry climate with minimal rainfall because it has a large taproot that can grow up to 46 metres into the ground to retrieve water. Using the string you already cut, visualize how deep 46 metres is—that is impressive!

DID YOU KNOW? Hucuktlis Lake located in Uchucklesaht Territory on Vancouver Island is considered the wettest place here in North America! Average rainfall is over 6,000 mm/year. Hucuktlis is pronounced "Who Chook-tlis". This lake is also known as Henderson Lake; it was renamed Hucuktlis Lake in 2018 to recognize the lake's significance to Indigenous peoples since time immemorial.

PROTECTING THE COASTAL TEMPERATE RAINFOREST

The remaining temperate old-growth rainforests in B.C. represents the largest remaining tracts of a globally rare ecosystem that covers just half a percent of the planet's landmass.

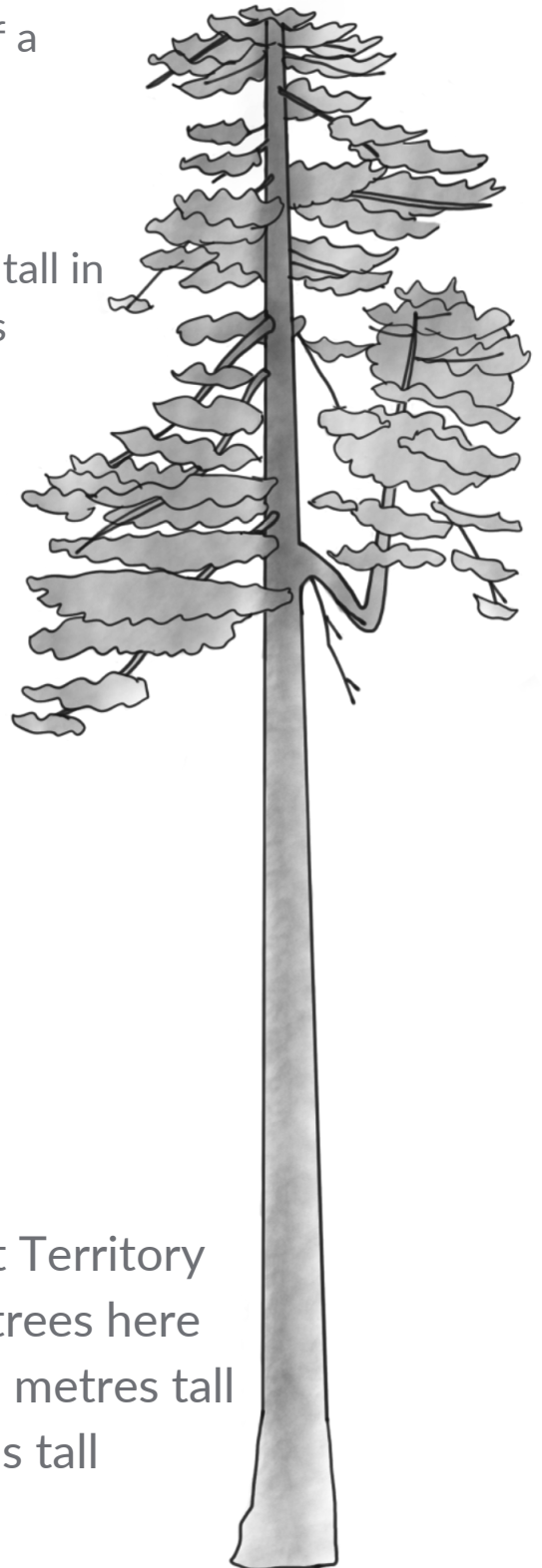
In tropical rainforests, trees can grow big and tall in just decades while in temperate zones it takes centuries for trees to become big and tall.

DID YOU KNOW?

Coastal rainforests are in a state of ecological crisis across many parts of Vancouver Island and B.C.'s south coast. Why? High rates of logging and the impacts of climate change such as drought and storms are putting additional pressure on the future of B.C.'s forests. On the coast, less than 15 per cent of the forest is protected. Check out the old-growth forest activity package to learn more about how to estimate the age of a tree!

DID YOU KNOW?

Big Lonely Doug, located on Pacheedaht Territory near Port Renfrew, is one of the largest trees here in B.C. This Douglas Fir Tree stands 70.2 metres tall and is 11.91 metres around! That's just as tall as many skyscraper buildings!



BIODIVERSITY IN THE RAINFOREST

Biodiversity means variety of life! Many of the species that live in the coastal temperate rainforest don't exist anywhere else on the planet. It's home to enormous biodiversity; thousands of beings live in the rainforest including cougars, squirrels, bald eagles, black-tailed deer, crows, black bears, lichen, Pacific salamanders, moss, Douglas Fir trees, banana slugs, tree frogs, wolves, ravens and MANY MORE!

ACTIVITY: BIODIVERSITY IN YOUR OWN COMMUNITY

Take this survey with you when you go outside into your own backyard or a local natural space in your community, adhering to physical distancing requirements.

Draw pictures under the different categories of what you see!

- How many different living beings can you spot in your nature space?
- Is there more of one thing than another?
- Can you find the home for any of these beings (ex. nest, hive, den)?
- If you can, observe and draw the home from a safe distance but be sure not to disturb it!

ACTIVITY: THE SEARCH FOR BIODIVERSITY

This is the time for you to practice your observation skills. You do NOT need to collect anything in this search. Use only your senses to make these observations. Look! Smell! Listen! If you touch, be gentle. Please ensure you are adhering to physical distancing guidelines of 2 metres or more between yourself and other visitors to the area.

Send us your photos of what you found on your search for biodiversity! Send a photo to: education@sierraclub.bc.ca or share a picture on Instagram at tag @SierraClubBC and #SierraClubBCed and post a photo on the Google Classroom!

BIODIVERSITY SURVEY

Birds	Reptiles (example: snake)	Insects
Coniferous trees	Fungi (mushrooms and lichen)	Grasses
Deciduous trees	Amphibians (example: frogs)	Worms and slugs
Mammals	How would you rate the biodiversity? 1-none 2-some 3-good 4-very good 5-excellent	Other plants

THE HUNT FOR BIODIVERSITY

GRADES 3-5



Listen. How many birds can you hear?



Find 2 decomposers



Touch the needles from 2 different conifer trees



Find a home for an animal



Smell the needles from 2 different conifer trees



Touch 3 different leaves



Touch 4 trees that have rough bark



Find something blue



Examine soil. What is in it?



Find an earthworm



Find 4 things in nature smaller than your thumb



Smell a flower or bush



Find 5 different pieces of evidence of wildlife here



Find seeds



Find 3 different producers



Find 3 cones off a tree



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LUNGS OF THE EARTH

DID YOU KNOW? The rainforest is sometimes called the lungs of the earth because of its oxygen production. The trees and the plants in rainforests around the world are responsible for approximately one-third of the world's oxygen.

ACTIVITY: LUNGS OF THE EARTH

Step 1: Stand beside a plant or a tree.

Step 2: Take a BIG breath in. Try to take in as much air as you can! ...

KEEP BREATHING IN! Hold your breath for 3 seconds. You are breathing in oxygen.

Step 3: Next....**BREATHE OUT!** You are now releasing carbon dioxide.

Step 4: Imagine how the plant or tree next to you is breathing in your carbon dioxide. It will later release oxygen that you can breathe in again!

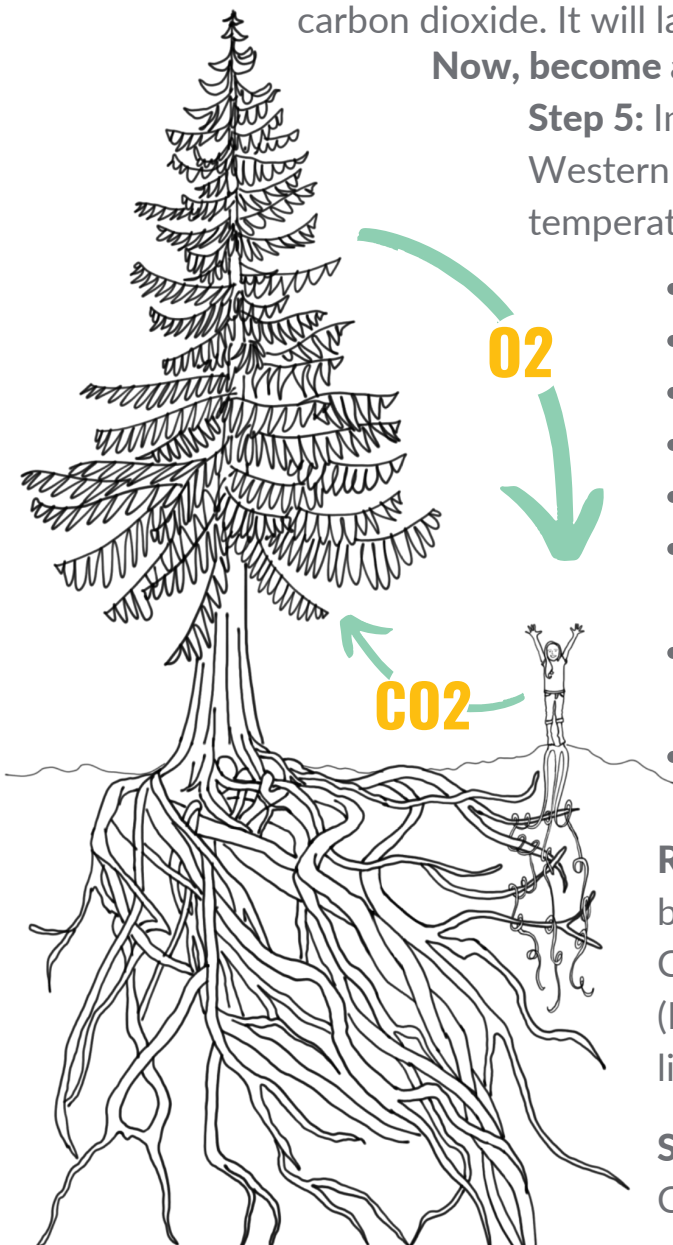
Now, become a tree!

Step 5: Imagine you are a big tall old-growth Western Red Cedar tree that stands tall in the coastal temperate rainforests on western Vancouver Island.

- Stand tall.
- Be strong.
- Reach and stretch out your branches to the sky.
- Plant your roots and stand firm to the ground.
- Feel the moss that grows on your bark.
- Breathe in. As you breathe in, you're taking in carbon dioxide for yourself.
- Breathe out. As you breathe out, you're releasing oxygen into the atmosphere.
- Try this breathing activity 5 times!

Reflection: How does it make you feel to become a big, tall cedar tree? What role does the Western Red Cedar tree for the other living beings in the forest? (Hint: Relate your ideas to the 5 basic needs of all living things: sunlight, water, air, habitat, food)

Storytime idea! "A Tree in the Ancient Forest" by Carol Reed-Jones

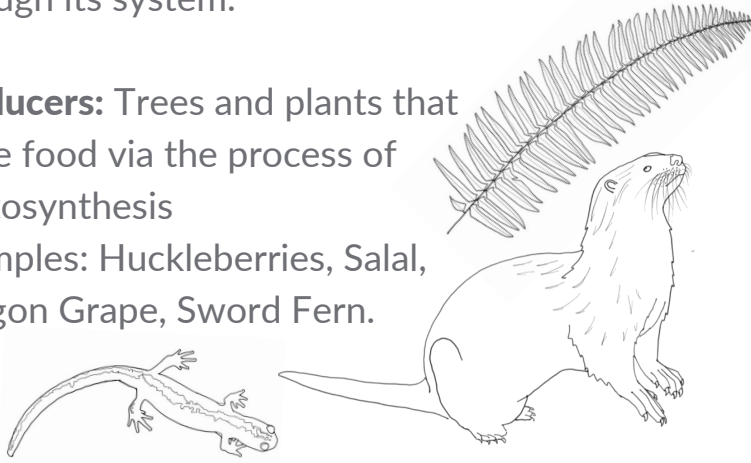


RAINFOREST RECYCLING

How are nutrients recycled through the temperate rainforest? The temperate rainforest is like a big living machine that is constantly recycling energy and food through its system.

Producers: Trees and plants that make food via the process of photosynthesis

Examples: Huckleberries, Salal, Oregon Grape, Sword Fern.



What is photosynthesis?

A process where sunlight activates chlorophyll (the green cells in a plant) and converts it into starches and sugars which the plant can use for food.

Consumers: Animals that either eat plants or animals. Examples: Black-tailed deer, River otters, Brown bears, Big brown bat, marten.



Decomposers: Break down dead material and recycle it into soil which creates nutrients for trees and other producers. Examples: Fungi, bacteria, worms, slugs

Some beings such as bald eagles, wolves and bears take salmon from rivers into the forest where parts of the salmon such as the bones decompose, providing nutrients to the trees. Check out our **Salmon resource package** to learn more about the role that Salmon play in providing nutrients to the forest!

DID YOU KNOW?

There is a subspecies of black bear called the Kermode bear, also known as the Spirit Bear. It has a rare recessive gene that makes its fur white or cream coloured. Spirit Bears can only be found in the Great Bear Rainforest on BC's north and central coast. The Great Bear Rainforest is the world's largest intact ancient coastal temperate rainforest!

Story time ideas! "The Salmon Bears. Giants of the Great Bear Rainforest" by Ian McAllister and Nicholas Read
"We are all Connected. Coast Salish, Coastal Rainforests and Cougars" by: Celestine Aleck, Brenda Boreham and Terri Mack

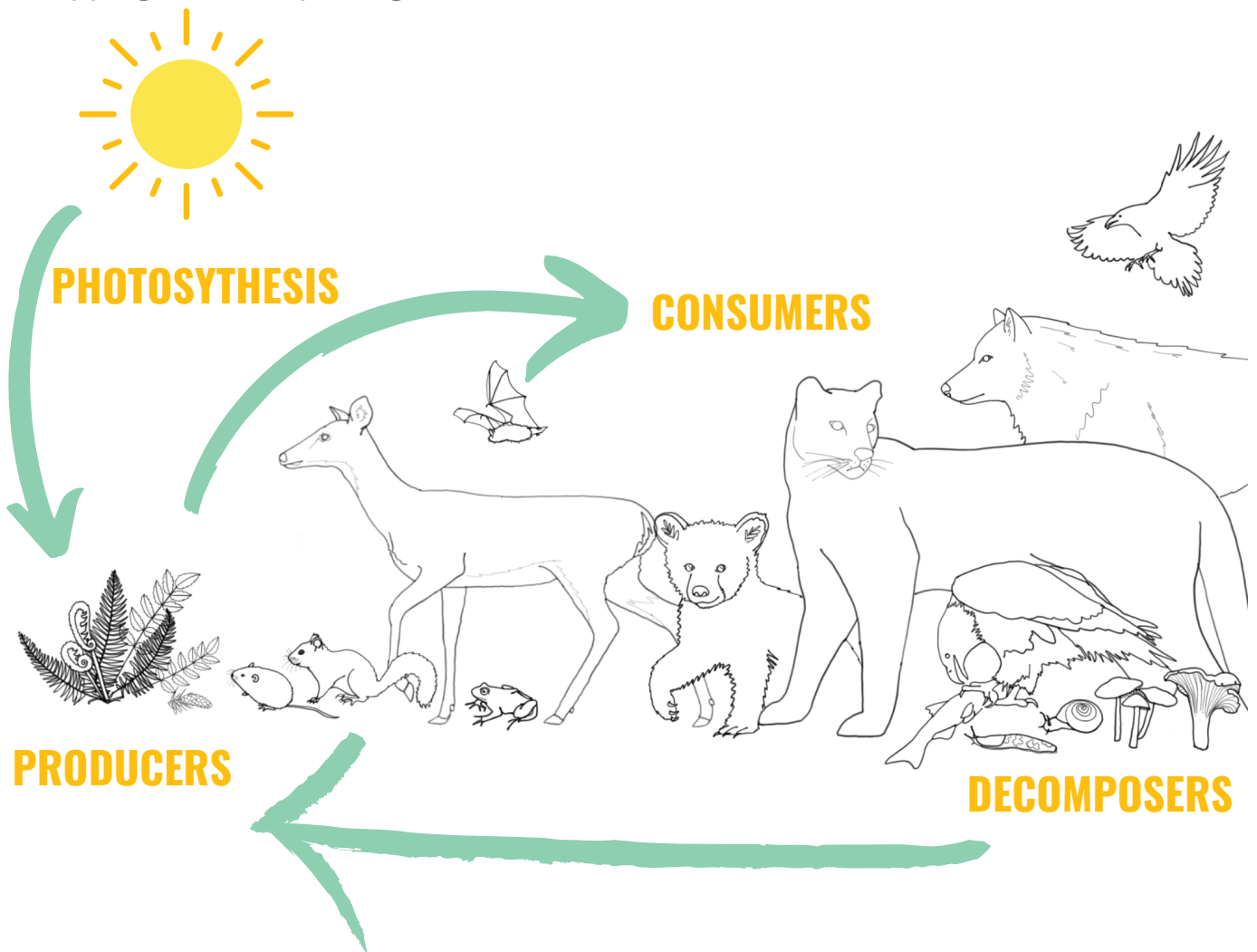


POSTER MAKING

Draw a picture of the temperate rainforest. Make sure to include a variety of living beings (producers, consumers and decomposers).

Draw arrows to show the cycle of nutrients as they work through the plants and animals in the rainforest. Show more than just 1 cycle taking place.

For example, while a plant such as salal is being eaten by an animal such as a bear, some salal leaves are likely dropping on the ground. These leaves are then munched on by decomposers such as slugs. Then, bacteria break them down even more by bacteria and turned back into soil. Don't forget the bears' droppings are also putting nutrients back into the soil!



CREATE A POSTER!



RAINFOREST POET-TREE

Haiku is a Japanese form of poetry. A haiku uses just a few words to capture a moment and create a picture in the reader's mind. It is like a tiny window into a scene much larger than itself. Often focusing on images from nature, haiku poems emphasize simplicity, intensity, and directness of expression. Traditionally, a haiku is written in three lines, with five syllables in the first line, seven syllables in the second line, and five syllables in the third line. These poems typically do not rhyme.

Line 1: 5 syllables

Line 2: 7 syllables

Line 3: 5 syllables

Example:

Rainforest is wet.

Bears, eagles, salamanders.

Cedar trees stand tall.

Step 1: To begin, visualize an outdoor scene that you would like to describe. Think of all the beautiful life living in the coastal temperate rainforest. What are the most important elements? What would you like your poem to bring to the reader's mind? Choose key words.

Step 2: Write your poem and try reading it aloud to yourself to see how it sounds. Change words or word order to see what works well.

Step 3: Try writing a few haiku poems based on different ecosystems or focused on particular characteristics of beings in the coastal temperate rainforest.

Step 4: Find a time to share these poems aloud with your family and friends. This can easily be done on a phone or video call. Ask them to visualize what you are reading as you share your poems.

LINKS AND RESOURCES

Visit our EcoMap. This tool will help you learn about the fascinating beings that live in BC's various 'Ecoprovinces', including traditional Indigenous uses of and connections to these lifeforms. There is even a glossary with vocabulary specific to nature. sierraclub.bc.ca/ecomap/

Seeing Through Watchers' Eyes (STWE) – Between the Worlds is an online interactive learning tool built using the Prezi platform by tSouke member kQwa'st'not (Charlene George). It tells the story of the land where the mural lives, on the territory of the Lekwungen speaking peoples (Songhees and Esquimalt Nations). This learning tool is based on the thirty-two foot collaborative mural Through Watchers' Eyes, housed at Spencer Middle School (School District 62), as designed by kQwa'st'not (Charlene George).

Built using the Prezi platform with support from Sierra Club BC, this tool is a publicly shareable, culturally rich Indigenous learning tool to support community learners of all ages and backgrounds to see through another's eyes. The mural and online tool help to open our eyes to new perspectives and answer many questions including where to begin in addressing the climate crisis. This tool invites learners into a new way of seeing and relating to the natural world while offering opportunities for learning using various modalities. sierraclub.bc.ca/watcherseyes/

Check out the **BC Bird Atlas** for ID and bird calls birdatlas.bc.ca

iNaturalist – This is a cool app! You can post a photo of a being if you are not sure what species it is, and other people can write back to you. Have fun exploring and sharing your observations. Download the app onto a phone or tablet. inaturalist.org.

Recommended reading & stories:

"Nowhere Else on Earth: Standing Tall for the Great Bear Rainforest" by Caitlyn Vernon (online version available through the Victoria Public Library)

"We are all Connected. Coast Salish, Coastal Rainforests and Cougars" by Celestine Aleck, Brenda Boreham and Terri Mack

"A tree in the Ancient Forest" by Carol Reed-Jones

"The Salmon Bears. Giants of the Great Bear Rainforest" by Ian McAllister and Nicholas Read

Answer key from Rainforest beings matching activity:

Douglas Fir



Salal



Western Red Cedar



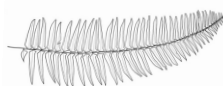
Oregon Grape



Red Huckleberry



Sword Fern



Sitka Spruce

