

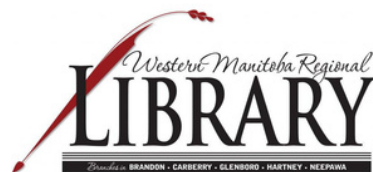
NATURE DISCOVERY BACKPACK
ACTIVITY BOOK

CONNECTING WITH NATURE

A PROGRAM OF:



DELIVERED WITH:



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ACKNOWLEDGEMENTS

This activity book was created with the goal to educate students and families about the benefits of healthy waterways, lakes, and the surrounding environment for our collective future. This book is linked to the Manitoba curriculum for grades K-8. Photography in this book is provided by Watersheds Canada unless otherwise labelled.

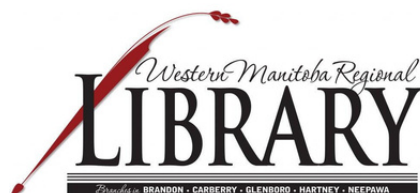
Founded in 1967, the Western Manitoba Regional Library system provides public library service to the communities of the City of Brandon, the Towns of Carberry and Neepawa, the Municipalities of Glenboro South Cypress and Grassland and the Rural Municipality of North Cypress – Langford.

The mission of the Western Manitoba Regional Library is to enrich lives and strengthen communities by providing universal access to broad and diverse collections of resources relevant and responsive to community needs. As focal points in our communities, our libraries are a valuable and evolving community resource, providing places of escape and discovery that foster new perspectives and life-long literacy.

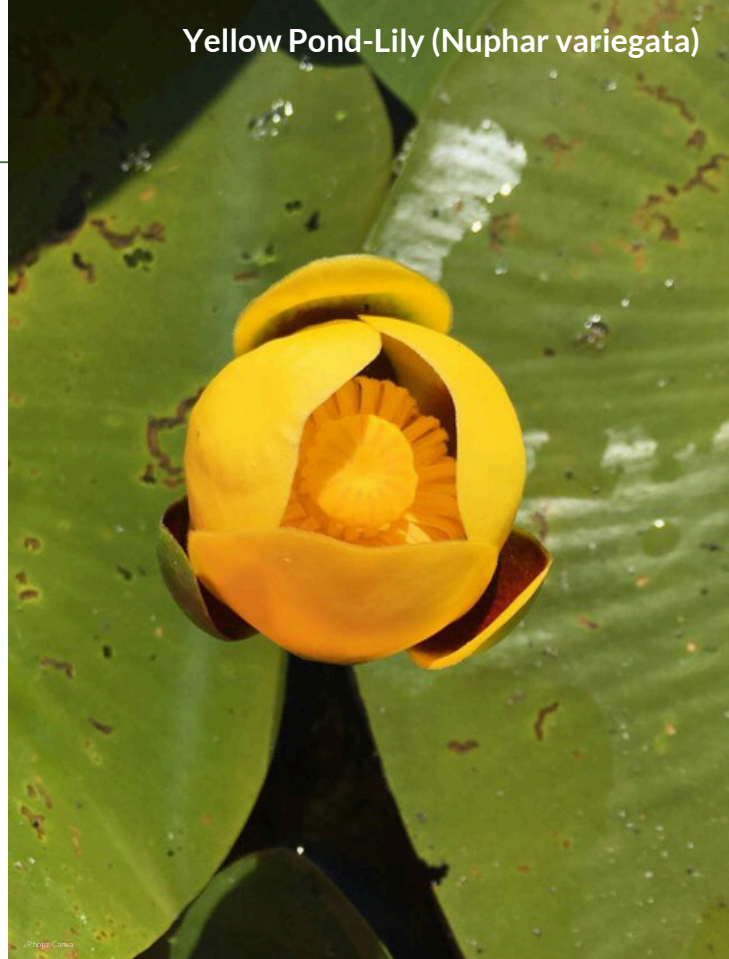
The Western Manitoba Regional Library's facilities are located on Treaty 1 and 2 Lands. These are the traditional homelands of the Dakota, Anishinaabe, Oji-Cree, Cree, Dene and Metis people. Western Manitoba Regional Library respects the treaties that were made on these lands.

Watersheds Canada is a federally incorporated non-profit organization and registered Canadian charity (863555223RR0001). Watersheds Canada builds and delivers habitat restoration and education programs that engage and equip waterfront property owners, families, Indigenous communities, waterfront associations, municipalities, schools, and community groups so they can enhance and protect the health of their lakes, rivers, shorelines, and wetlands.

This Nature Discovery Backpack program is made possible because of support from:



GETTING READY TO EXPLORE NATURE



We are so excited for you to explore the Western Manitoba region. You will learn about different local species and how to protect the health of our local rivers, lakes, and beyond!

You can keep this activity book! This book will give you tips to safely explore nature, as well as information about different animals and plants that are found in this region. You will learn about watersheds and understand the role of the riparian zone. This book will teach you what you can do to help nature, with fun activities along the way!

**Please return to all field materials and the backpack to the Library.
You keep this activity book!**

If you are interested in learning more about Watersheds Canada, please visit watersheds.ca or scan this QR code!



STAYING SAFE



Things to remember when outside:



Pack a hat, reusable water bottle, snacks, bug spray, and sunscreen.



Make sure to bring back your garbage to get rid of it at home.



Tell someone where you are going and when you will be back home.

Wear long sleeves and pants when in a forest or tall grass to protect from tick bites.



Let everyone enjoy nature! Do not pick plants, mushrooms, or flowers.



Watch wildlife from a safe distance. Do not try to touch or hold wildlife.



WHAT'S INSIDE THIS BACKPACK?

Exploration Tools

2 pairs of binoculars

- What do the numbers of binoculars mean? For example, if binoculars are 8x21mm, they will help you see things 8 times closer and each lens is 21mm wide.
- Turn the knob to make it clearer to see. The knob should be pointing to the sky when you look through the binoculars.



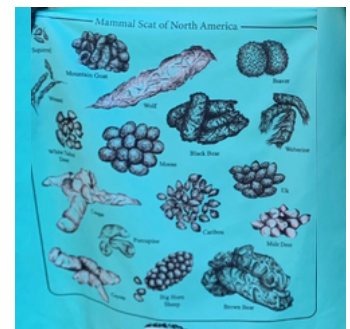
Compass

- Learn how to use a compass and navigate yourself around in nature using the cardinal directions: north, east, south, and west.



Scat bandana

- Take this bandana with you when hiking or exploring to identify scat (poop) you spot in nature.



Observation Tools

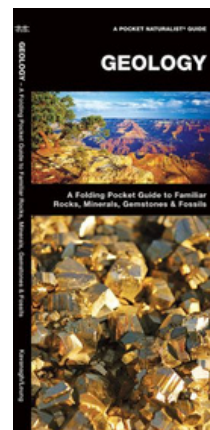
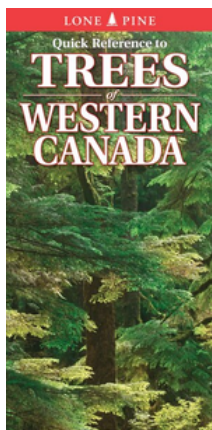
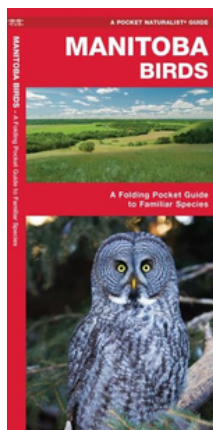
- 2 collection jars
- gardening set
- 2 pocket microscopes

Use these tools to closely look at critters in the dirt!



Identification Guides

Use the identification guides and books to learn more about different types of local biodiversity, like trees, birds, and mammals (and even their poop!). Each type of guide shows photos and information about each species like their size and where they live (their habitat).



Looking for even more fun tools to explore nature with? Check out books and equipment from your local Western Manitoba Regional Library branch!

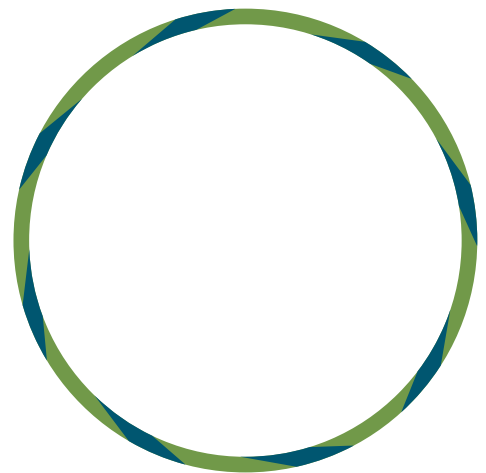
ACTIVITY #1:

LIFE IN A HULA HOOP

In this activity, you will discover the diversity of living (biotic) species and non-living (abiotic) factors in a specific spot.

Find an area that seems to have a lot of biodiversity present. Your area should be about the size of a hula hoop.

On the next page, draw a top view of the area. Draw in any plants, rocks, insects, pollution, leaves, and other features you find.



Kneel next to one side of your spot, and look around carefully. Use your identification guides to label what you have found.

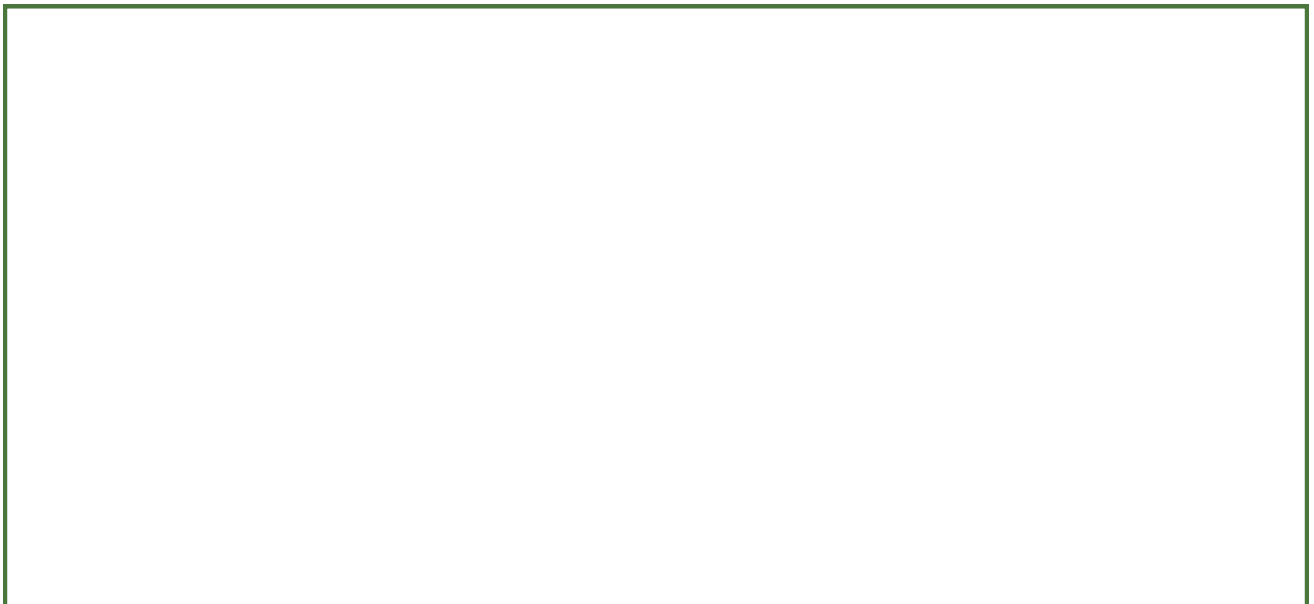
If you do not know the name of a species or rock, snap a picture and try to find it online using a website like [iNaturalist](#), or ask a trusted adult.

Date: _____

Time: _____

What's the weather link? _____

Location: _____



Follow-up questions:

1. How would you describe the diversity of your spot: high or low? Did you find LOTS of different things (high diversity), or just a few (low)?
2. What non-living (abiotic) factors might affect what lives in this spot (e.g., rocks, water, slope, pollution)?

ACTIVITY #2: BECOME A COMMUNITY SCIENTIST

You can upload what you find in nature to one of the many free and open access community science programs.

When you enter your animal or plant observations online, it can help scientists and nature groups keep track of different populations over time as they see local and regional impacts from climate change, increased human development, and pollution. Here are just a few community science programs you can pick from:



Merlin Bird ID



The Canadian Lakes Loon Survey is a program of Birds Canada, delivered in partnership with QuébecOiseaux.

ACTIVITY #3: POETRY

List 6 things that describe what you love about animals using the first letter of each line. This will make an acrostic poem, where the first letter of each line spells out the word 'nature' when read vertically. Lines do not have to rhyme.

N _____

A _____

T _____

U _____

R _____

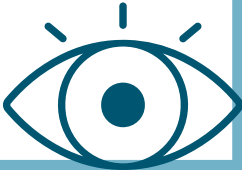
E _____

ACTIVITY #4:

SENSES CONNECTION

Find a spot in nature. What do you find? What can you see? What other senses can you use while spending time in nature?

Use your senses and write or draw what you see, hear, smell, and touch.

SEE	SMELL
	
HEAR	TOUCH
	

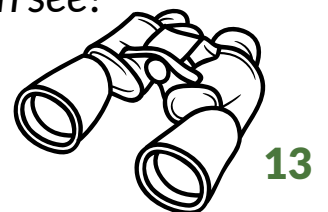
ACTIVITY #5: I SPY

*Using your binoculars, how many different colours can you spot outside?
Write what you see next to the pencil crayon matching its colour.*

I spy, with my little eye and binoculars something that is...

LIGHT GREY		_____
GREY		_____
BROWN		_____
TAN		_____
PINK		_____
PURPLE		_____
NAVY BLUE		_____
BLUE		_____
LIGHT BLUE		_____
DARK GREEN		_____
GREEN		_____
LIGHT GREEN		_____
YELLOW		_____
ORANGE		_____
RED		_____

CHALLENGE! *What is the furthest thing alive that you can see?*



WHO LIVES HERE?



Downy Woodpecker



American Mink



Common Milkweed



Ruby-throated Hummingbird



**Monarch Butterfly
Caterpillar**

Yellow Pond-Lily



Common Loon



Common Green Darner



Northern Leopard Frog



Snapping Turtle



ACTIVITY #6: MAKE FRIENDS WITH A TREE

Using your tree guide, find 4 different types of trees and draw them. Describe the trees in words and write what you love about each tree.

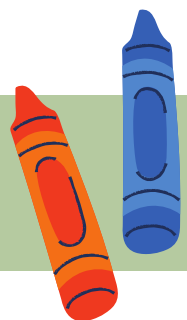


- 1 TREE NAME: _____
- 2 TREE NAME: _____
- 3 TREE NAME: _____
- 4 TREE NAME: _____

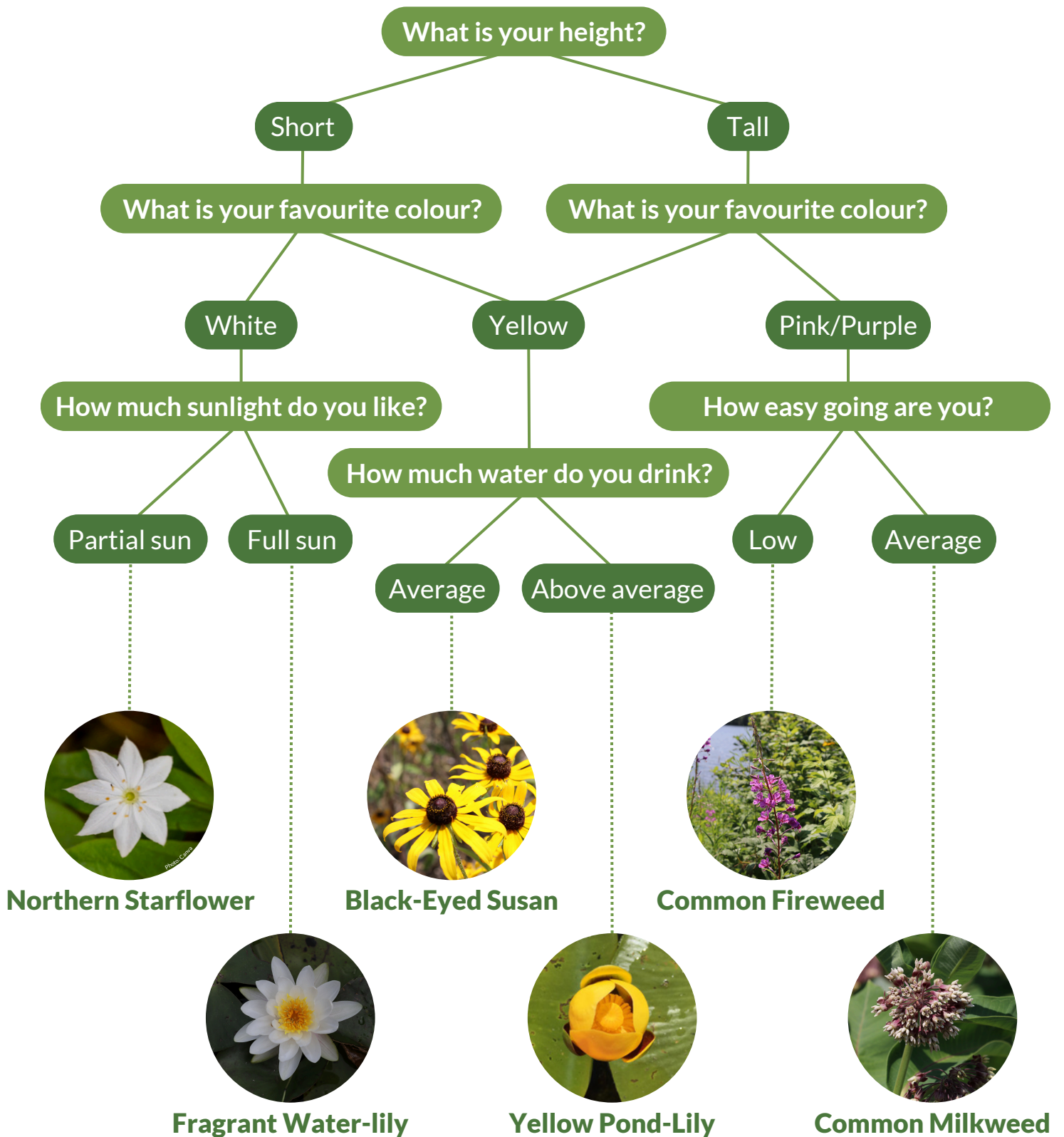
Give the trees a hug and try out tree leaf and bark rubbings!
Holding your paper tightly, gently rub a crayon or pencil on its side over the surface of your paper on the tree leaf or bark.
With just enough pressure, the texture will begin to show on the paper. The first one is done for you!



Tip: Try rubbing different tree barks and leaves to reveal new textures and compare patterns using different colours!



Which Native WILDFLOWER are You?



My native wildflower is _____ !

ACTIVITY #7: WILDFLOWER DETECTIVE

Using the “Popular Wildflowers of the Canadian Prairies” book, match the wildflowers with the correct species name by drawing a line.



Flodman's Thistle

CIRSIIUM FLODMANII

Water Smartweed

PERSICARIA AMPHIBIA

Elephant's Head

PEDICULARIS GROENLANDICA

Dotted Blazing Star

LIATRIS PUNCTATA

Red Columbine

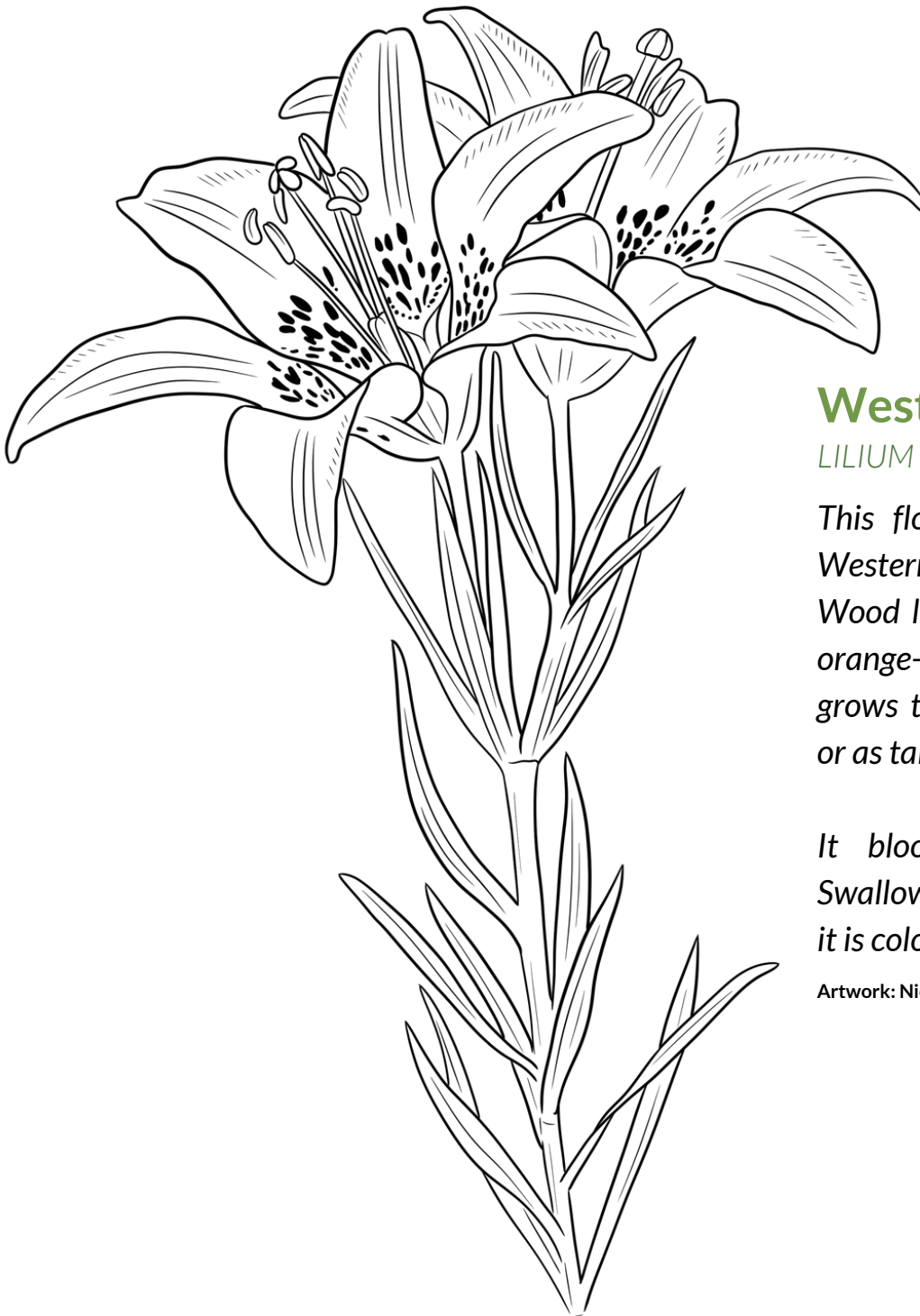
AQUILEGIA CANADENSIS

ACTIVITY #8: STEEP A WILDFLOWER TEA

Using the “Laura Reeves’ Guide to Useful Plants: From Acorns to Zoomsticks” book, draw wildflower species in the tea cup below and write what medicinal benefits your tea recipe has!



ACTIVITY #9: COLOURING TIME!



Western red lily

LILIUM PHILADELPHICUM

This flower goes by many names: Western red lily, Prairie lily, or the Wood lily. The flower is pretty with orange-red petals and dark spots. It grows to be 20-76 centimeters tall, or as tall as a dining room table.

It blooms in July and August. Swallowtail butterflies like it because it is colourful and has sweet nectar.

Artwork: Nicole Dubé

American White Pelican

PELECANUS ERYTHORHYNCHOS

The American White Pelican is one of the largest North American birds and can be spotted in lakes or coastal shores. This bird feeds from the waters surface, dipping its beak into the water to catch its favourite food: fish!

Artwork: Amy Deboer

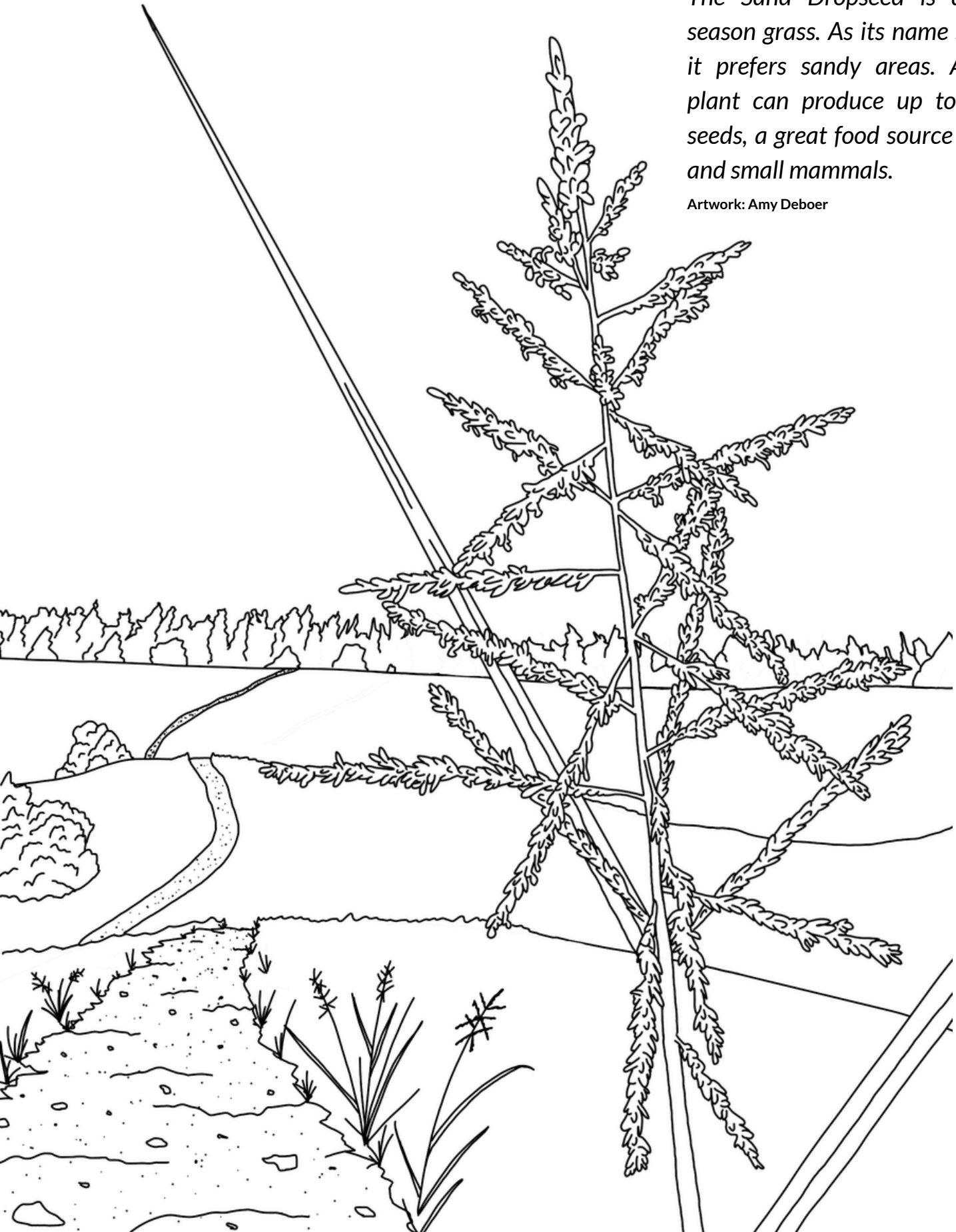


Sand Dropseed

SPOROBOLUS CRYPTANDRUS

The Sand Dropseed is a warm-season grass. As its name suggests, it prefers sandy areas. A single plant can produce up to 10,000 seeds, a great food source for birds and small mammals.

Artwork: Amy Deboer



ACTIVITY #10: TALK TO THE BIRDS

You may hear birdsong in a forest or your backyard, but have you ever tried to have a conversation with a bird? Try to whistle, sing, and mimic (copy) their noises and then use your binoculars to see if anyone comes to see you!

Get these
out!



Three different ways you can do this activity:



1

Go outside and listen to the sounds you hear, but don't make any sounds back.



Merlin Bird ID

2

Play bird calls in a free mobile app like Merlin Bird ID.

- Bird a bird in the app, play a sound recording, and see who sings back to you!



3

Go to the next page and learn some bird noises.

- Make the sounds yourself and see what bird friends you can make!

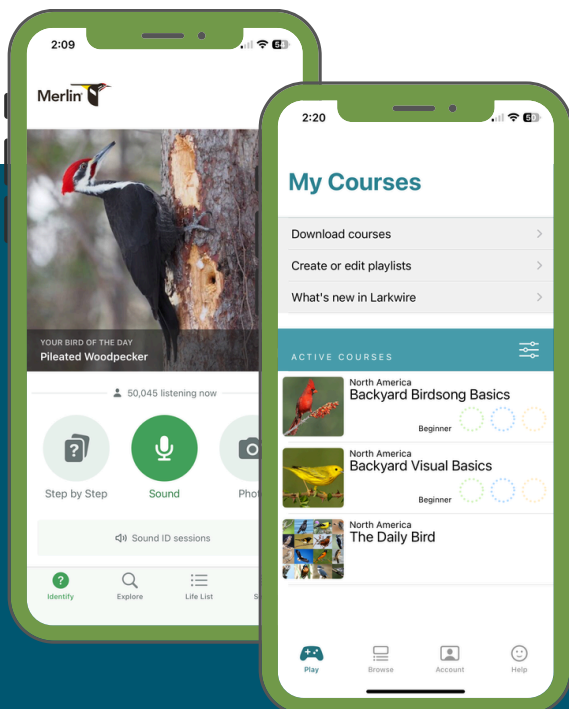
Blue Jay

- Bright blue body with a pale gray underside, and black and white marking on their wings and tails. Distinguishable by its “black necklace”.
- Habitat: found in mature deciduous or coniferous woodlands, and frequents bird feeders.
- Calls: most heard call goes jeer-jeer, mimicking hawks.



Mourning Dove

- Slender brown body, with a pointed tail and dark spots on their wings.
- Habitat: a variety of ecosystems from agricultural fields, to lightly wooded areas, as well as urban suburbs. A bird feeder visitor!
- Calls: soft coo-oo followed by two or three louder coos, or a coo-OO-oo call.



Keep practicing your bird call identification skills with these Apps:



Merlin Bird ID



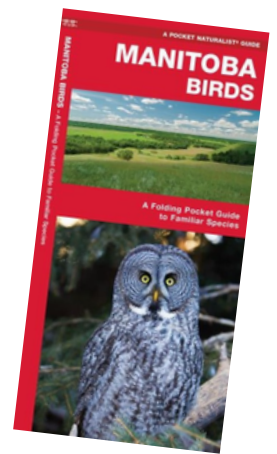
Larkwire

ACTIVITY #11: BECOME A BIRD NERD!

Using your binoculars and bird guide, spot four different kinds of birds and identify them with your bird guide. Draw their picture and write their species name below. Can you call to them?

When identifying a bird, consider its...

- Beak (what does it eat?)
- Feet (where does it live?)
- Wing type
- Colours
- Possible adaptations

A blank white rectangular area with a green border, intended for drawing a bird. It is hanging from a black line with a wooden clothespin.

NAME:

A blank white rectangular area with a green border, intended for drawing a bird. It is hanging from a black line with a wooden clothespin.

NAME:

A blank white rectangular area with a green border, intended for drawing a bird. It is hanging from a black line with a wooden clothespin.

NAME:

A blank white rectangular area with a green border, intended for drawing a bird. It is hanging from a black line with a wooden clothespin.

NAME:

ACTIVITY #12:

BIRD BINGO

				
American Robin	Black-throated Blue Warbler	Song Sparrow	Sharp-shinned Hawk	Northern Cardinal
				
House Wren	Red-winged Blackbird	Northern Flicker	Ruffed Grouse	Black-capped Chickadee
		FREE SPACE		
Turkey Vulture	Eastern Kingbird	FREE SPACE	Baltimore Oriole	Blue Jay
				
Tree Swallow	Rose-breasted Grosbeak	American Goldfinch	Eastern Phoebe	Gray Catbird
				
Black-billed Magpie	Barred Owl	Bald Eagle	White-breasted Nuthatch	Downy Woodpecker

ACTIVITY #13: THE ROCK CYCLE

Find a rock outside to study.

Using your senses, investigate your rock up close to see how it feels (its texture), what it looks like, and what it smells like.

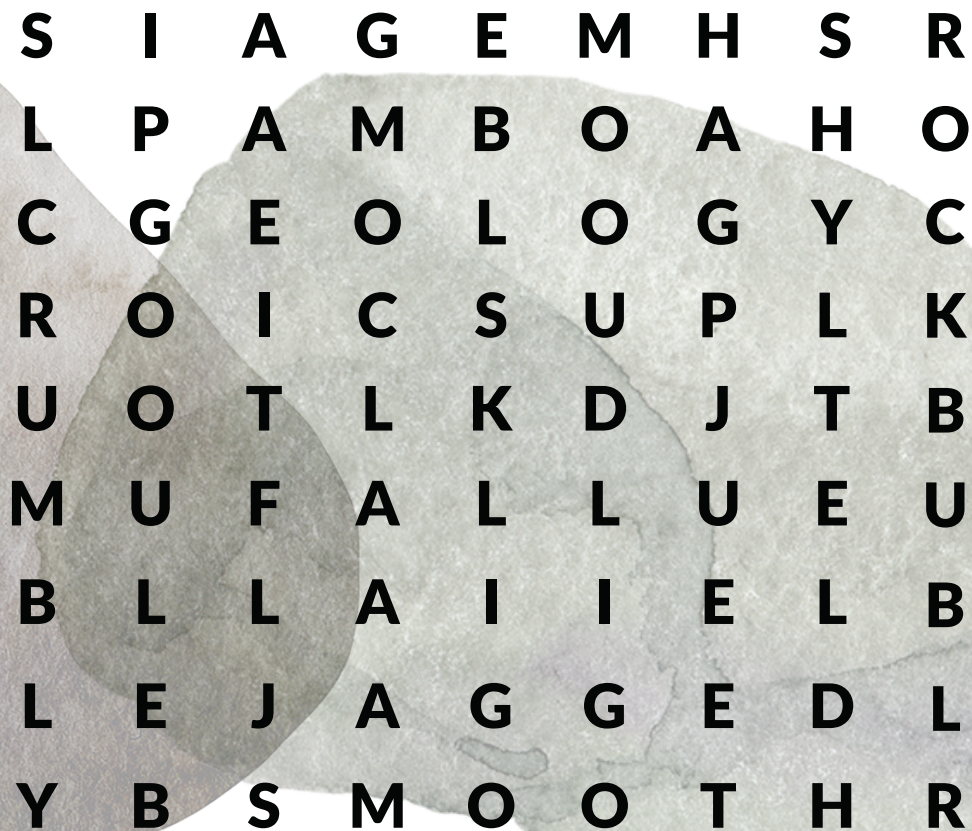


Then, describe the adventure of your rock!

Draw a timeline of your rock's life so far with key milestones including where it has travelled over time and how it got there.

ACTIVITY #14: GEMS AND ROCKS

*In this activity, learn new vocabulary (words) that
is used to describe gems, minerals, and rocks!*



S I A G E M H S R
L P A M B O A H O
C G E O L O G Y C
R O I C S U P L K
U O T L K D J T B
M U F A L L U E U
B L L A I I E L B
L E J A G G E D L
Y B S M O O T H R

Geology
Jagged

Speckled
Gem

Rock
Crumbly

Dull
Smooth

ACTIVITY #15: COMPLETE THE GEOLOGICAL FORMATION

Draw the rest of the rock face the way you think it would look!



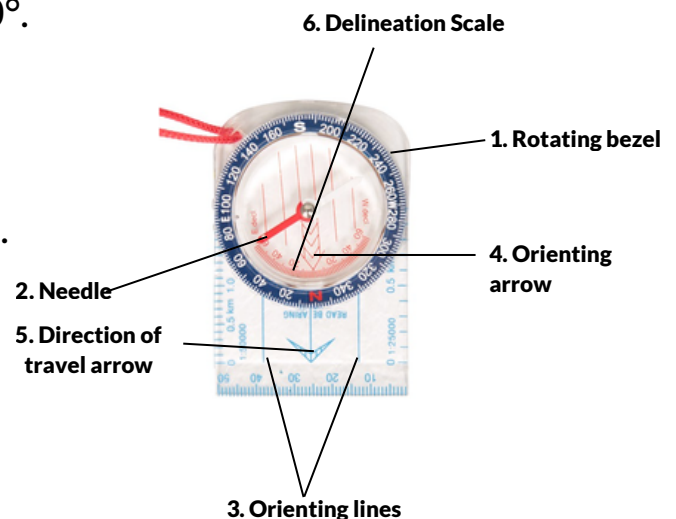
WHAT IS A COMPASS?

The magnetic compass has been used for navigation for hundreds of years. At one time, it was the only reliable means of direction-finding on days when the sun and stars were not visible. Using a compass will help you:

- Know which direction you are travelling in. This is called your **heading**.
- Align your map with your surroundings. This is called **setting the map**.
- Work out which direction an object or destination is from you. This is known as its **bearing**.
- Walk in a straight line. This is called **following a bearing**.

Understanding Your Compass

1. **Rotating bezel/compass wheel:** shows four main compass points N-E-S-W. It also has a mark every two degrees up to 360°.
2. **Magnetic needle:** the red end indicates north and the white end for south.
3. **Compass lines:** on the bottom of the baseplate; also known as orienting lines.
4. **Orienting arrow:** fixed and aligned to north within the dial.
5. **Travel arrow:** the direction is the big arrow at the end of the baseplate.
6. **Delineation scale:** used to adjust the difference between magnetic north and true north, known as "magnetic declination".



ACTIVITY #16: MAKING A MAP

*Until very recently, maps were the main tool for navigation.
It is still an important skill today to be able to read a map!*

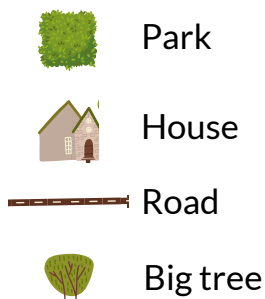
In this activity, you will make a map of your surroundings. Your map can be of any place you like, like your classroom, school, schoolyard, house, or backyard. You want to pick a place where you can draw lots of details so someone using your map will be able to find their way around.

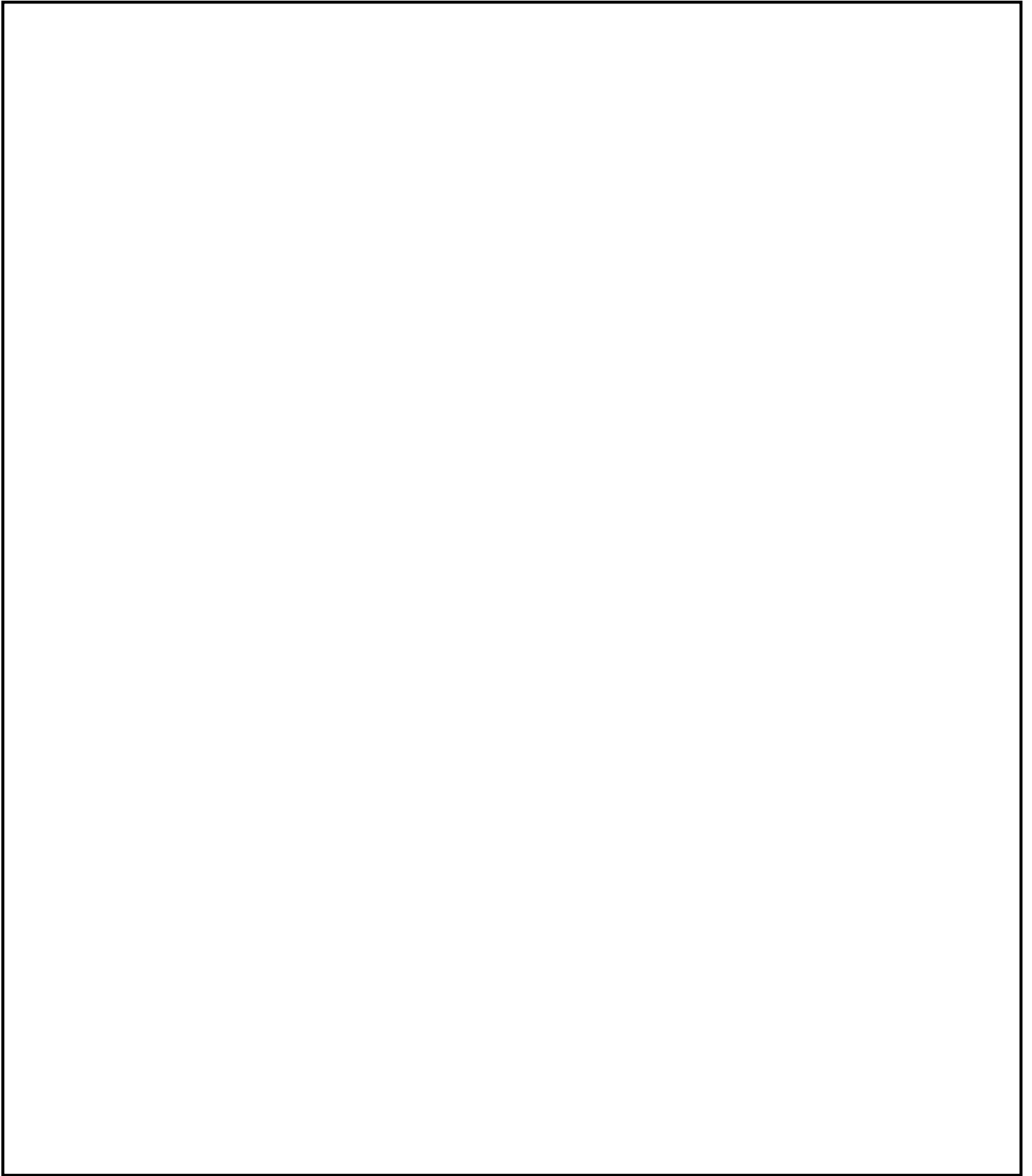
Draw your map on the next page. Your map should have a:

- Title
- Compass (ensure each element of your map is facing the right way)
- Key that lists all of the different things on your map

Example:

Key:





ACTIVITY #17: NAVIGATE USING A MAP

In this activity, you will be using the map you made in Activity #16 to explain how to get to different places by using compass directions (example: take 2 steps north-east to get from a couch to the kitchen).

Give 5 examples of routes you can take using your map. These directions should be detailed enough that someone else who is unfamiliar with the area could follow them.

1. _____
2. _____
3. _____
4. _____
5. _____

ACTIVITY #18:

Not seeing any wildlife? You may have just missed them!

Here are some tips for finding animal scat:

- [illegible]

Always remember:

Animal scat can contain bacteria and other icky thing. When looking at and identifying scat, do so without directly touching it.

Want more practice before you go in the field?

Try this Scout Life animal scat quiz: scoutlife.org/quizzes/153553

ACTIVITY #19: BECOME A SOIL SCIENTIST

Using your pocket microscope and gardening set, collect and learn about 2 soil samples from your backyard or local park!



Step 1

Use your gardening set and dig up soil from two different spots in your backyard or local park.



Step 2

Use your pocket microscope and draw what you see in the circles below.



Soil Sample 1

Soil Sample 2

Wet or dry?

Smooth, sticky
or gritty?

Dark or light in
colour?

Anything living
or moving?



Step 3

What differences did you notice between the two samples?

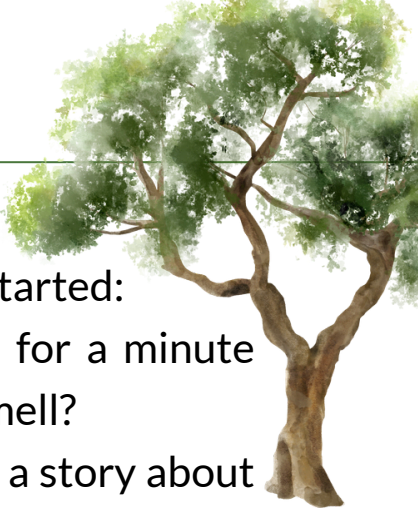
ACTIVITY #20: NATURE JOURNALING

Nature journaling is a way for you to document and organize what you see, smell, and hear while outside. You will collect your observations, explanations, and questions using words, drawings, and numbers (data). You do not need to be a professional artist to journal!

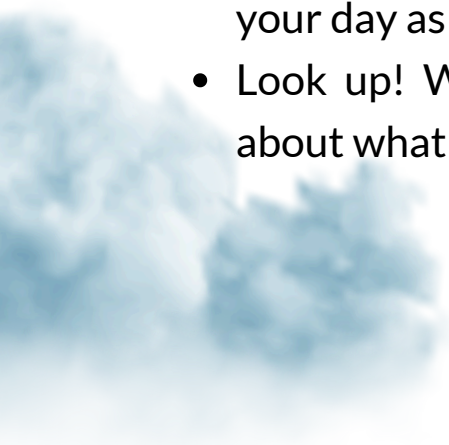


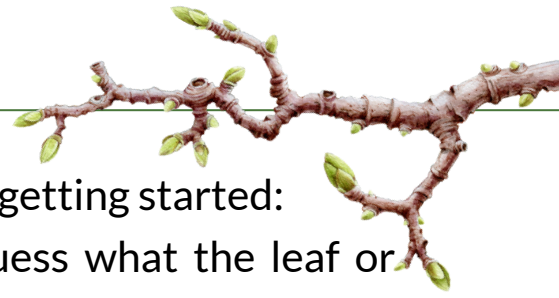
You can journal anything that is interesting to you. Add diagrams, maps, numbers, or sketches.

Count the number of species you see, and add the time, weather, and date.



Here are some writing prompts if you want help getting started:

- Find a comfortable spot in nature. Close your eyes for a minute and listen. What sounds do you hear? What do you smell?
 - Sit beside a tree. Imagine you are that tree and write a story about your day as a tree.
 - Look up! What shapes do you see in the clouds? Write a story about what you see.
- 



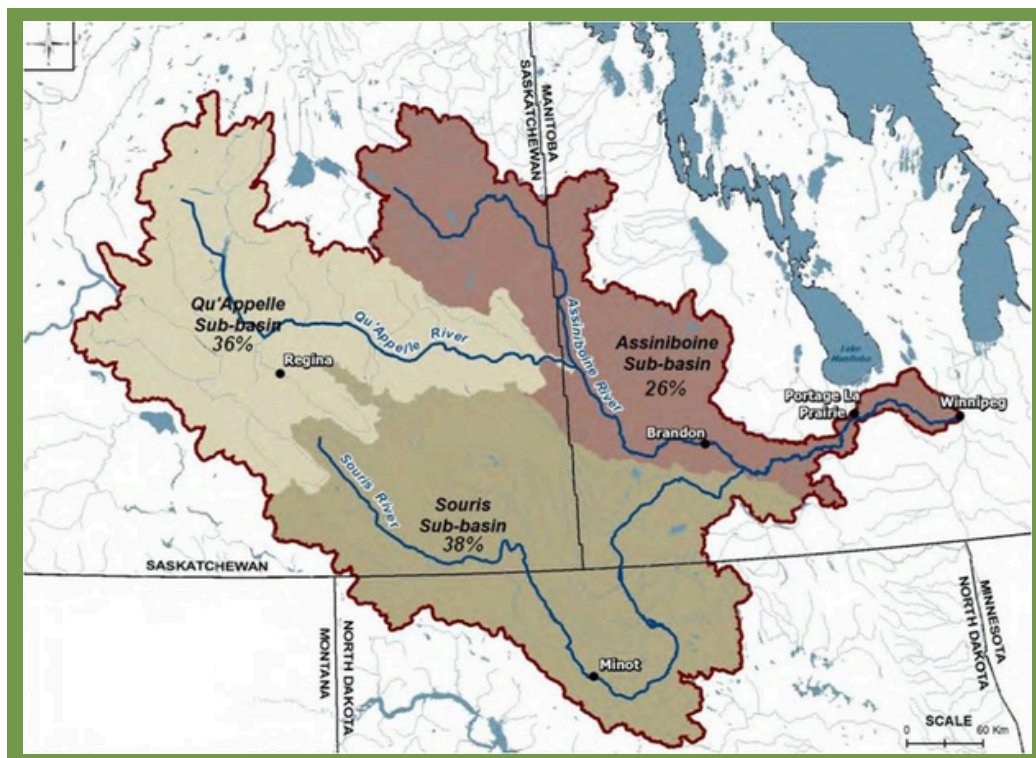
Here are some drawing prompts if you want help getting started:

- Find a plant starting to bud and draw it. Guess what the leaf or flower will look like in full bloom - draw a picture and write a description.
- Draw a comic strip about the animals and plants you see around you.
- Find a wild mushroom and draw a detailed picture of it. Write any interesting features it has and label your drawing.



ASSINIBOINE RIVER BASIN

- The Assiniboine River is a 1,070km long watercourse in South to Western-Central Manitoba, part of the larger Assiniboine River Basin. A river basin is a specific area of land where all surface water from rain, melting snow, and ice converges and drains into a single, specific point like a river, lake, or ocean.
- The name originates from the Assiniboine First Nation, standing for Stone Enemy. This river continues into Manitoba from Saskatchewan and connects to the Red River in Winnipeg. It drains a large fertile plain across Canada, making this area one of Canada's most successful wheat-growing regions!



Source: "Assiniboine River Basin Map". Assiniboine River Basin Initiative, <https://assiniboinerbi.weebly.com/>

WAYS TO HELP NATURE

- ☐ **Gather data.** Take photos and observations of different animals and plants you see in nature and submit them to an online database like [iNaturalist](#), [eBird](#), [MonarchWatch](#) or [Water Rangers](#) to become a community scientist.
- ☐ **Get involved.** Volunteer with a local lake association or nature group to learn more about local wildlife and spend time in nature with like-minded people.
 - Discover the Assiniboine Food Forest: assiniboinefoodforest.com/
 - Volunteer at the Brandon Riverbank: riverbank.mb.ca/annual-events/
 - Volunteer with the Westman Naturalists: westmannaturalists.ca/
 - Get involved with your local watershed conservation district: whitemudwatershed.ca/programs/
- ☐ **Learn.** Become a Brandon [4R Waste](#) youth ambassador. Or, sign up for the [Manitoba Envirothon](#), an annual hands-on environmental education competition for high school students.
- ☐ **Be natural.** Consider adding native plants to provide habitat, food, and stabilization to your property for pollinators, mammals, and birds. Learn more about native plants: naturaledge.watersheds.ca/plant-database/
- ☐ **Keep it clean.** Prevent invasive species like giant hogweed from spreading by cleaning all equipment after boating, and staying on trails while hiking.
- ☐ **Explore.** Manitoba Habitat Conservancy (MHC) offers open recreational use of MHC-owned lands for hiking, birdwatching, photography, and more. Remember to leave no trace! Learn more: mbhabitat.ca/land-access/
- ☐ **Be respectful.** Encourage the people around you to care about the earth!

RESOURCES FOR PARENTS

Growing Native Plants

Native vegetation is naturally suited to withstand the climate and soil types of local and regional areas. Native trees, shrubs, and wildflowers are beneficial to your property and local wildlife. Find native plants that are suitable to your land and preferences, and learn how to maintain and care for native plants: naturaledge.watersheds.ca/



Pollinator Gardens

A wildflower garden is a visually spectacular, self maintaining, low-cost garden that truly brings the beauty of nature to your backyard. Learn how to build your own pollinator garden to attract and protect native pollinator species with free guides: library.watersheds.ca/

Urban Habitats

Wildlife that live in urban spaces need to find places where they won't be disturbed and provide shelter, food, and water. You can create these spaces in your backyard by planting native vegetation, installing bird and bat boxes, and creating brush and log piles. Learn how to create urban habitat with free habitat guides: library.watersheds.ca/

RESILIENT SHORELANDS

The **Littoral Zone** extends from the water's edge to where sunlight no longer penetrates to the bottom of the water. This is where docks are built and people swim. However, we share this area with an incredible array of biodiversity as up to 90% of lake species (e.g., pike, ducks, otters and turtles) are born, raised, fed, or live in the littoral zone.

The **Shoreline** is the edge where the land and water meet. The mix of plants, shrubs, and trees form an intricate web of roots, foliage, and fallen limbs that hold the waterfront together and fend off erosion from wind, rain, boat wakes and ice.

The **Riparian Zone**, also known as the Ribbon of Life, extends inland from the shoreline for at least 15 metres and may be flooded during high water periods. It is a natural buffer protecting the shoreline, water quality, and natural habitat both on land and in the water. It is made up of trees, shrubs and grasses that absorb excess nutrients (e.g., fertilizers) and pollutants (e.g., seepage from septic systems, oil, gas and pesticides) before they can contaminate the water.

The **Upland Zone** is a drier forested area with better drainage compared to the riparian zone. The deep roots of trees stabilize the slope, the foliage buffers the effects of wind, the canopy cools its surroundings, and plants provide habitat for deer, birds, porcupines, grouse, rabbits, and many other creatures.



Watersheds
CANADA



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