

NATURE DISCOVERY BACKPACK
FOREST ACTIVITY WORKBOOK

CONNECTING WITH NATURE

A PROGRAM OF:



DELIVERED WITH:



Addington Highlands Public Library
More Than Just Books!

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ACKNOWLEDGEMENTS

This workbook was created together by Watersheds Canada and Addington Highlands Public Library with the common 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 Ontario curriculum for grades K-8. Photography in this book is provided by Watersheds Canada unless otherwise indicated. Cover photo: Getty Images.

Addington Highlands Public Library believes in the value of education to learn and expand knowledge about nature and express creative imaginations by strengthening our community.

Watersheds Canada is a federally incorporated charity (863555223RR0001) committed to providing education and stewardship programs to communities and individuals across the country to enhance and protect the health of their lakes, rivers, and shorelines.

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



**TD Friends of the
Environment
Foundation**

GETTING READY TO EXPLORE NATURE



We are so excited for you to explore your local forests. You will learn about different local species and how to protect the health of our local natural spaces and beyond!

You can keep this workbook! This workbook 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 forests and how you can help protect nature. The workbook will teach you what you can do to help nature, with fun activities along the way!

Please return all field materials in the backpack.

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



STAYING SAFE



Here are some things to keep in mind when exploring outside:

- Bring a hat, snacks, reusable bottle with water, sunscreen, and bug spray. Make sure to bring back your garbage so that you can properly get rid of it at home. With the help of an adult, you can also pick up any garbage you find in nature and bring it home for disposal!
- Tell someone where you are going and when you will be back.
- Watch wildlife from a safe distance. Do not try to handle wild things!
- Please leave nature for everyone to enjoy. Do not pick any wildflowers, fungi, or plants.
- **There are ticks in the area. Wear long sleeves and long pants if walking in a wooded area. Learn more about tick safety: <https://www.ontarioparks.com/parksblog/how-to-protect-yourself-from-ticks/>**

WHAT IS IN MY BACKPACK?

Observation Tools

- Use the collection jar and magnifier to closely look at insects and small aquatic invertebrates (fun fact: they have no backbone!).
- To find invertebrates, try dragging the net along the surface of the water or just below the surface (not through the mud bottom).



Water Rangers tiny test kit

Look inside this blue bag to find:



1

A thermometer to measure how hot or cold water and the air is



2

Small white test strips to measure pH (how acidic or basic the water is)



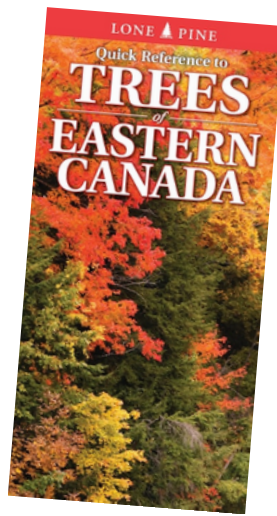
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An information book



Identification Guides

Use the identification guides and books to learn more about different types of local biodiversity, including trees, bugs, slugs, and mushrooms. Each type of guide shows photos and information about each species like their size.

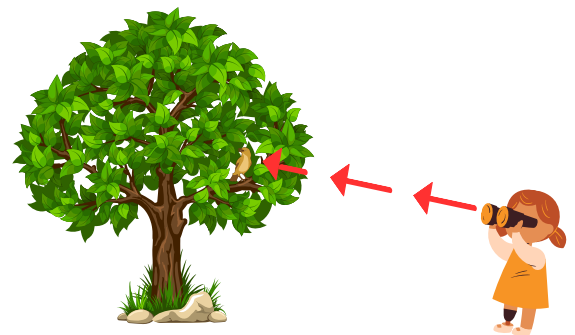


Binoculars



Help you see things that are far away from you!

Turn the knob on the binoculars to make it easier to see.



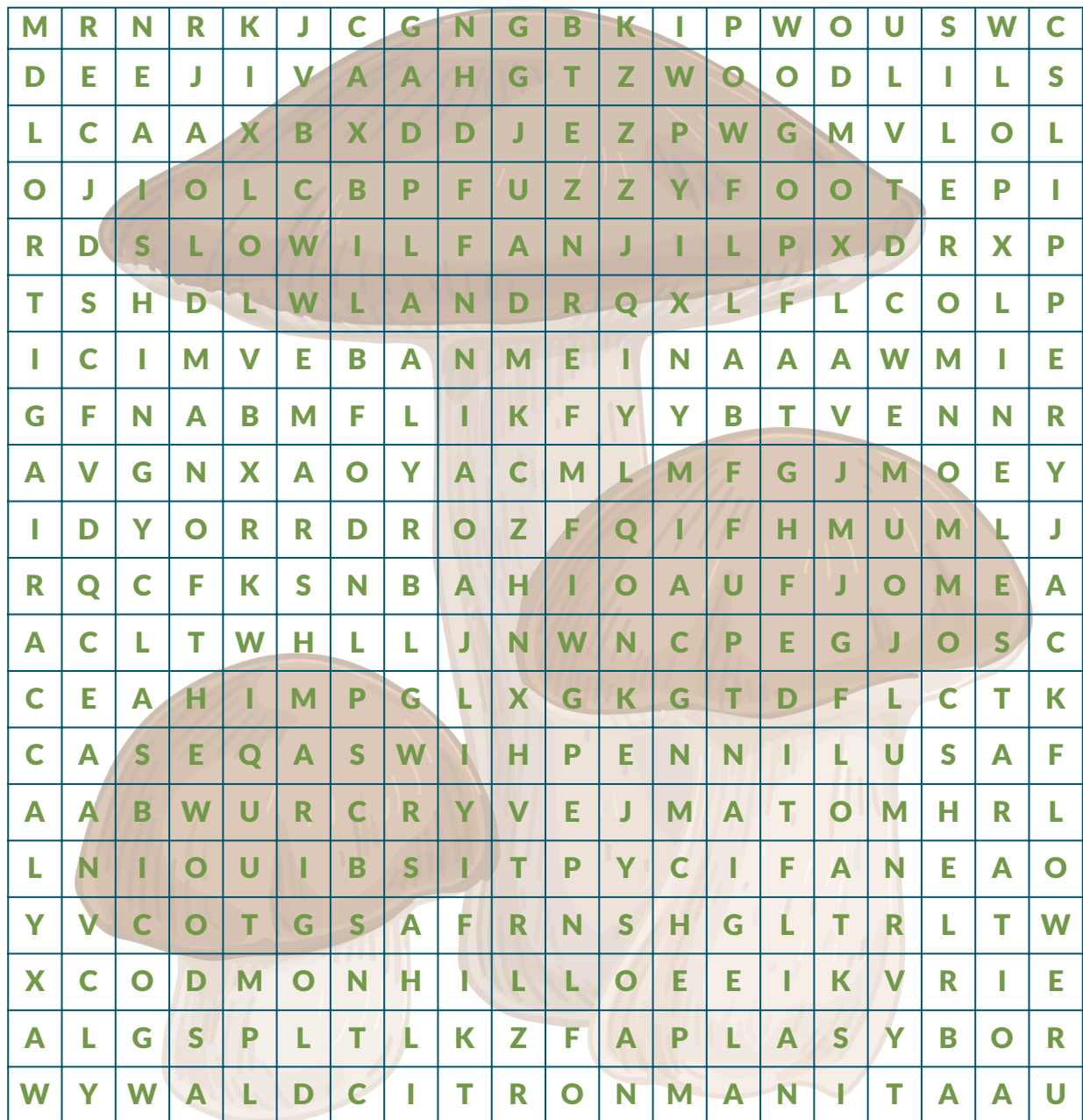
ACTIVITY #1: FUNGI AND LICHEN DETECTIVE



Fill in the blanks with an adjective that describes the fungi and lichen in the photos below. Then, head outside and see what types of fungi and lichen you can find in your own backyard. Remember: do not pick or eat them!



ACTIVITY #2: WORD SEARCH



Mushroom illustration: Brown Birch Bolete Mushrooms (by Nicole Dubé)

Orange Milky

Fuzzy Foot

Waxy Laccaria

Common Morel

Citron Manita

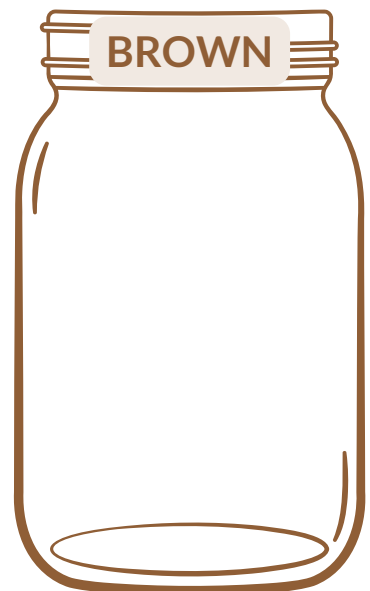
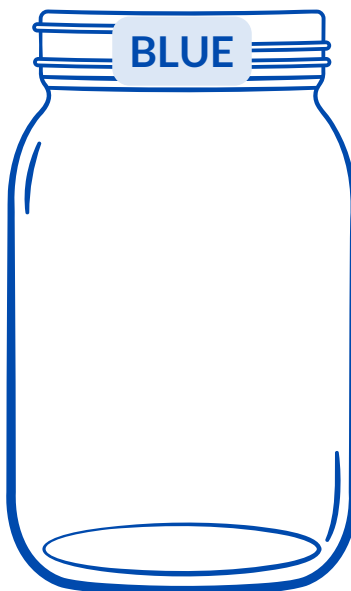
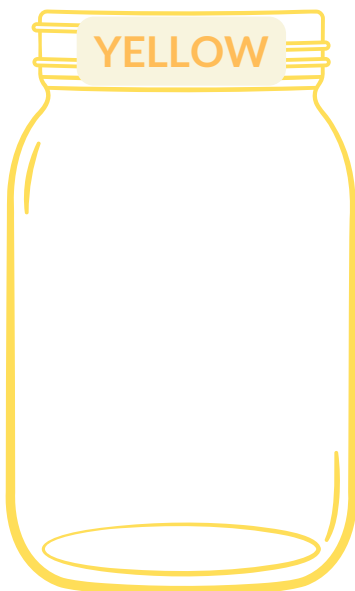
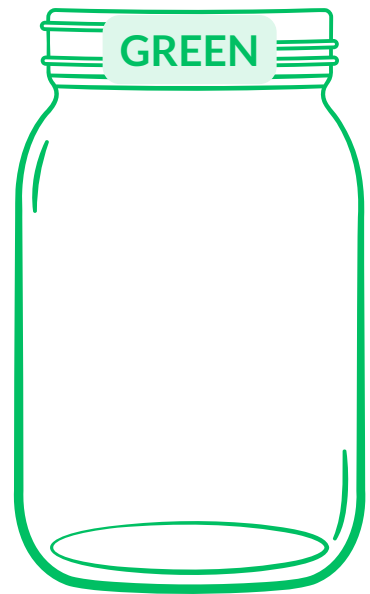
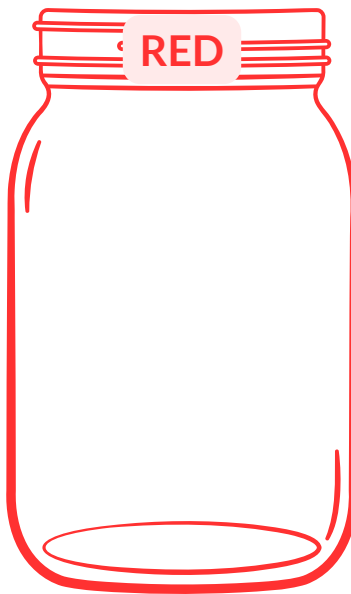
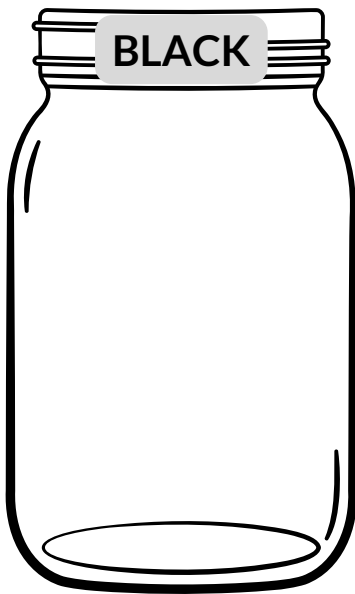
Slippery Jack

Old Man of the Woods

Giant Puffball

ACTIVITY #3: BUGS AND SLUGS

Watch the bugs and slugs around you and draw them or write their names in the jar that matches their colour. Can you find one of each colour?



WHO LIVES HERE?



Photo: Simon Lunn

Pileated Woodpecker



Photo: Cylita Guy

Big Brown Bat



Photo: Getty Images

Gray Treefrog



Photo: Getty Images Signature

Ermine



Photo: Getty Images

Spotted Salamander

ACTIVITY #4: WHO AM I?

Meet some new forest friends! Look at the photos and clues and then write the name of the species living in Ontario.



When they sense danger, they raise their white tail to alert other members of their herd.



In June and July, you can find me flying in forests. I drink nectar from flowers and sap from rotting plants!



This small blue-gray bird looks like it has a black cap on its head. Its belly is rusty-brown in colour.



This animal has a distinct rusty-red fur coat and is known for its energetic behaviour, darting through trees.

?



This caterpillar is easily recognized by its vertical stripes of black, white, and yellow-green. They only eat milkweed plants as they grow.

?



I am covered in ~30,000 quills that protect me. I am the second largest rodent in North America, and my two front teeth never stop growing!

?



The sound of their hammering travels a long distance through the woods where they live.

?



Unlike its larger cousin, the wolf, this canid species typically is more slender and has a bushier tail. It eats fruits, insects, and small mammals.

?

ACTIVITY #5: MAKE A PLANT FRIEND

As you explore in the forest, identify and sketch four different plants. Then describe the plants in words and write what you like about each one.

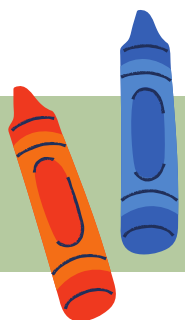


- 1 PLANT NAME: _____
- 2 PLANT NAME: _____
- 3 PLANT NAME: _____
- 4 PLANT NAME: _____

Give a tree a hug and experiment with leaf and bark rubbings! Holding your paper tightly, gently rub a crayon on its side over the surface of your paper on the 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!



ACTIVITY #6: POETRY

List 6 things that describe what you love about nature using the first letter of each line. This will make an acrostic poem. Lines do not have to rhyme.

N

A

T

U

R

E

HOW ARE PEOPLE IMPACTING NATURE?



As shorelines become more developed, humans are changing the way shorelines look and the species that can live there.

Some threats to wildlife and water health include: plastic pollution, introducing non-native (invasive) species, road mortality, and habitat removal and fragmentation.

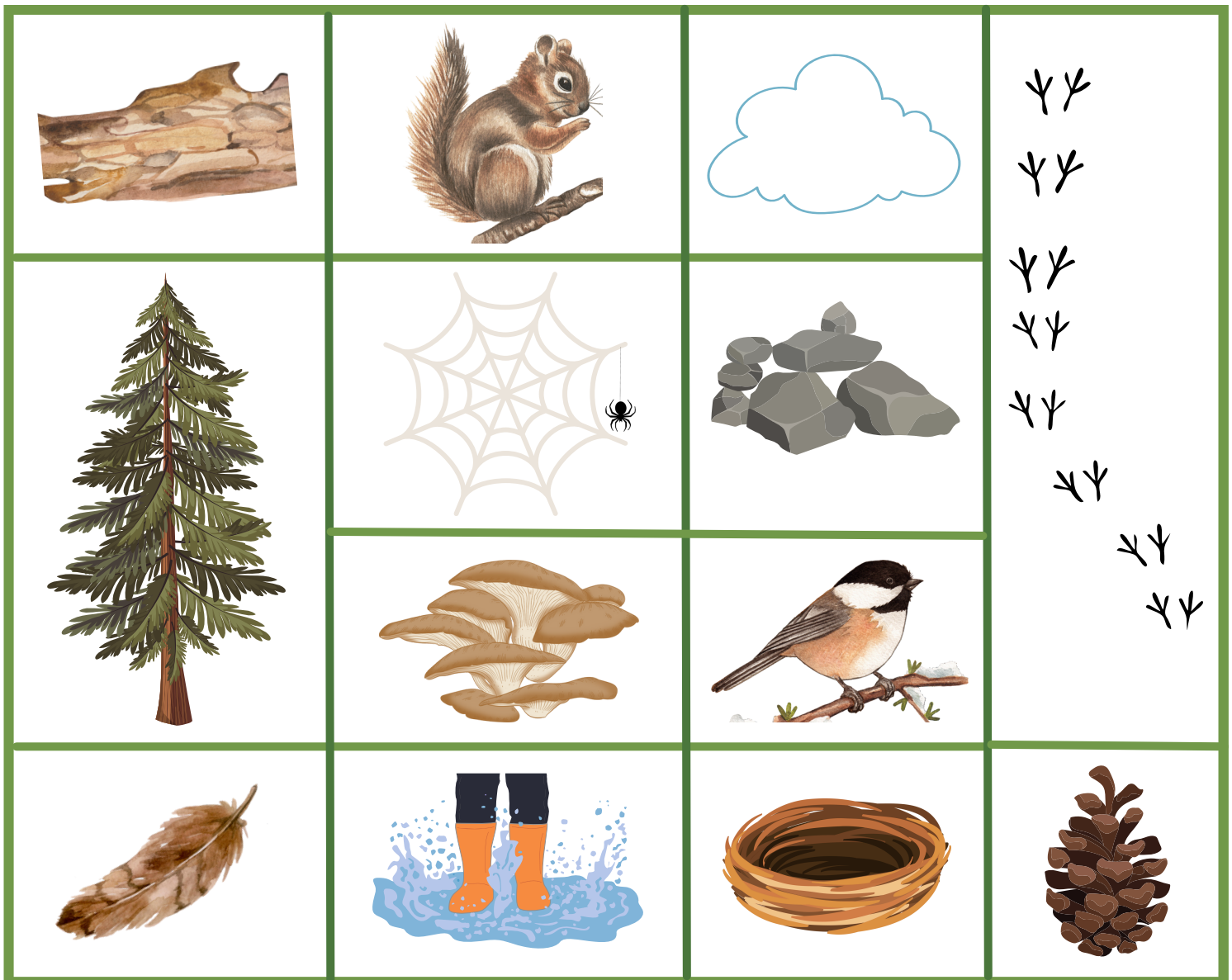
One way to help is to replant a shoreline with native plants along the edge. This buffer helps to filter and stop things like fertilizers and pesticides from entering the water. Plant roots also help keep soil together in heavy rainstorms which prevents erosion.



Photo: Stephany Hildebrand

ACTIVITY #7: NATURE SCAVENGER HUNT

Circle the items as you find them in a local nature area!

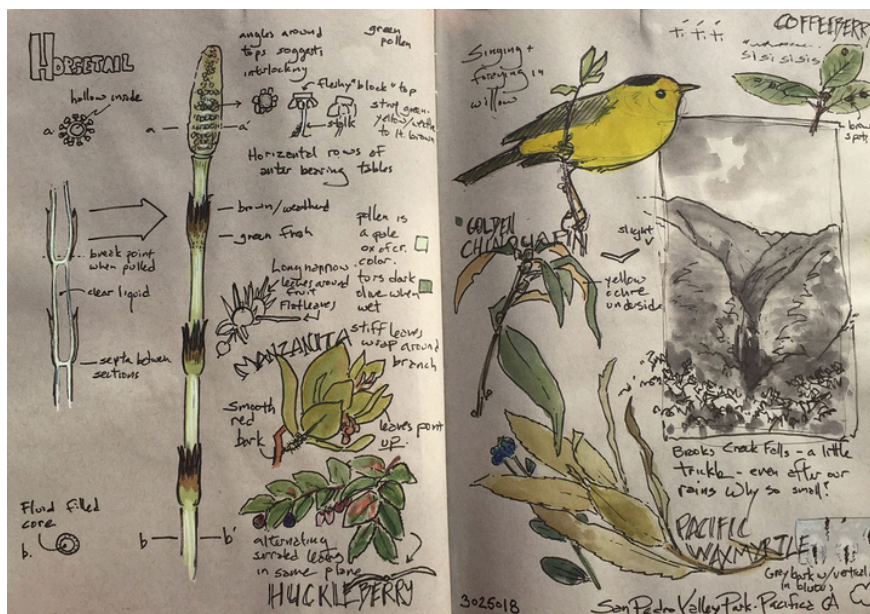


ACTIVITY #8: NATURE JOURNALING

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!



Photo: Canva

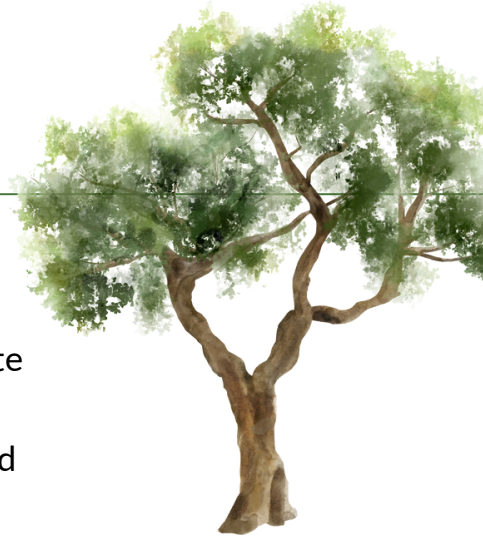



You can journal anything that is interesting to you! Add diagrams, maps, numbers, or even sketches. Count the number of species you see, and add the time, weather, and date.

Source: John Muir Laws

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?
- Spend time in a quiet place in nature. Write your thoughts and feelings about being there.
- 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.
- Imagine you are an inventor and you are making something to explore a lake in your area. Draw your invention and write how it works and what you will discover!
- Find a wild mushroom and draw a detailed picture of it. Write any interesting features it has and label your drawing.



Interested in learning more about nature journaling?

ACTIVITY #9: WATER QUALITY EXPERIMENT

The guideline for pH (potential Hydrogen) is a range of 7.0 to 10.5 in finished drinking water.¹ Generally, a range of 6.5 to 8.2 is preferred for most life in the water. Different things can affect the pH of the water like an algal bloom or increased pollution (e.g., road salt, car wash soap).

Some aquatic animals are very sensitive to changes in pH, and are often used as living indicators ("bioindicators") of an ecosystem's health. One example is dragonflies because they have a biphasic lifecycle, meaning they spend part of their life in the water as aquatic nymphs and part of their life in the terrestrial environment as adults.



Common Green Darner (*Anax junius*).



Band-winged Meadowhawk (*Sympetrum semicinctum*).

¹Health Canada (2015). Guidelines for Canadian Drinking Water Quality: Guideline Technical Document — pH. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. (Catalogue No H144-28/2016E-PDF).

Getting started

Open your Water Rangers test kit. Take out a water test strip. Look at the pH chart. Before you begin testing, guess the pH levels of your water sample (make a hypothesis - an explanation of what you think will happen). Do you think the sample will be preferred by life in the water?

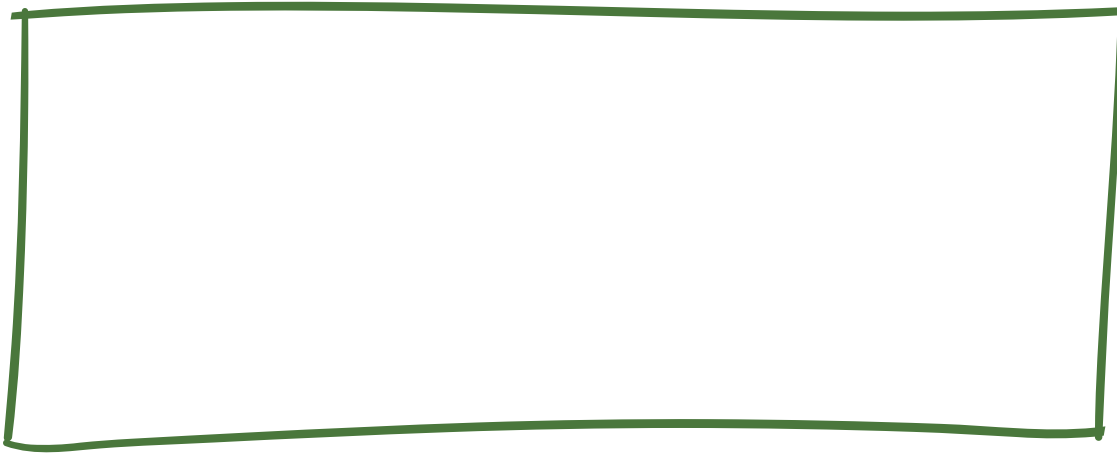


Where and why do you think you will find different conditions for air temperature, water temperature, and pH?

Record your findings each time on the Water Rangers data sheet in the test kit, or below on this page. What did you find?

ACTIVITY #10: CREATE A BUTTERFLY

Design your own butterfly! On the right, list 4 things your butterfly needs in its home.



1

2

3

4

FLYING INSECTS WITH SCALE COVERED WINGS



FOLD WINGS UP BEHIND THEIR
BACK WHEN RESTING



CLUB-SHAPED ANTENNAE



USUALLY OUT DURING THE DAY



BUTTERFLY

Monarch Butterfly



SPREAD WINGS OUT OR HOLD
AGAINST THEIR BODY AT REST



FEATHERED ANTENNAE



MORE ACTIVE DURING THE NIGHT



MOTH

Luna Moth



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](#).
- ☐ **Get involved.** Join a local lake association or nature group to learn more about local wildlife and spend time in nature with like-minded people.
- ☐ **Be natural.** If you have a shoreline property or live in town, 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 the spread of invasive species like Eurasian Milfoil by cleaning all equipment after boating, and staying on trails while hiking. Learn more about Eastern Ontario invasive species: <https://ontario.ca/page/invasive-species-fact-sheets>
- ☐ **Be respectful.** Take only photos and leave only footprints when exploring in the forest. This lets other people, animals, and plants use the space too.
- ☐ **Explore.** Visit Algonquin Provincial Park and Bon Echo Provincial Park to spend time outside and try new activities like canoeing, birding, hiking, and educational programs. You can also borrow a parking pass for Quinte Conservation Areas from the Addington Highlands Public Library!
- ☐ **Help local wildlife.** If you find a wild animal that you think is injured, sick, or orphaned, contact a licensed wildlife rehabilitator for advice and help: <https://ontariowildliferescue.ca/>

RESOURCES FOR PARENTS

Fireworks

Although fireworks create a spectacular show enjoyed by many, there are risks to this activity.

Noise and light from fireworks can have a negative impact on wildlife, including nest desertion. The particulate left in the sky after a firework explodes contains heavy metals which can land directly on the lake or be washed into the lake following a rain storm. This has harmful effects on the aquatic food chain. Fires and injuries to people and pets are also possible.



Be 'Wake-Aware'

Lakes and rivers are fragile environments. Fish, wildlife habitat, shorelines, and docks are vulnerable to damage from boat wakes.

- Be aware of the size of your wake while operating a boat. Adjust your speed and directions to minimize your impact on shorelines.
- Distribute passengers throughout the boat to reduce time spent in transition speed.
- Wakeboard and water ski away from shorelines.
- If boat shopping and a motor-free boat is not an option, opt for an outboard motor which gives the driver more control over the amount of water being forced downwards.

LIGHT POLLUTION

Many of us have likely sat out at night and noticed the lights at properties across the way or in the sky. Take a moment to reflect on how this makes you feel and consider if light from your property is also contributing to this. This doesn't mean we have to get rid of all our outdoor lights, though! Perhaps we do not need as many or they can be retrofitted to reduce the glare. Here are some questions to ask:

- Does the area on my property really need to be lit?
- Does it need to be this bright?
- Is the light transmitted further than it needs to be?

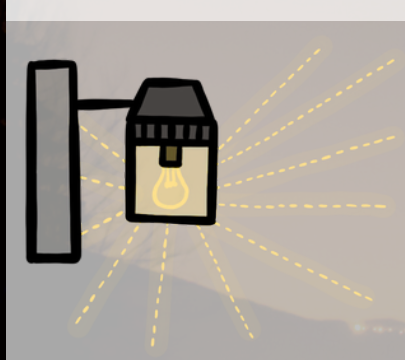
Learn more: <https://watersheds.ca/light>

Not Recommended: Glare Lights

Typical 'Wall Pack'



Typical 'Yard Light'

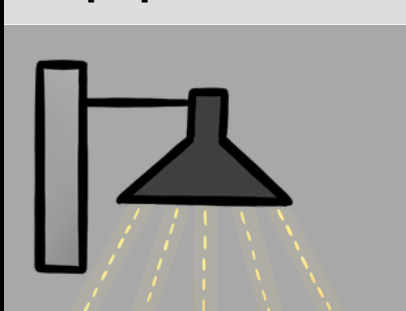


Flood Light



Recommended: Shielded Lights

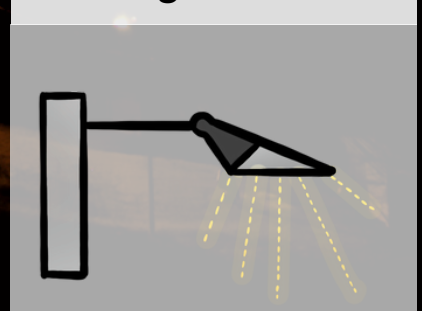
Opaque Reflector



Typical 'Shoebox'



Flood Light with Hood





Great Horned Owl

Bubo virginianus



Watersheds
CANADA

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