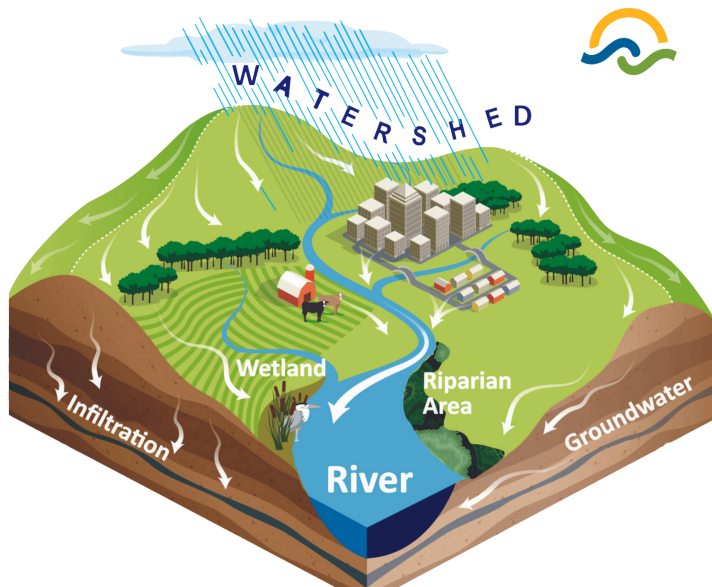


# WHAT IS A WATERSHED?

A watershed is the area of land that carries rainwater and snow melt through soil, wetlands, and streams to a common point, such as a lake, river, or ocean.

Water moves from high elevation areas to low areas. Both big and small differences in **elevation** shape how watersheds work.

Everything on the land can affect our shared water. Since all life on Earth relies on clean water, it is important we take care of our watershed!



**No matter where you are in the world, you are always in a watershed.**

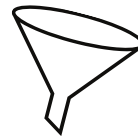
*So, what watershed do you live in?*

The **North Saskatchewan River watershed** is one of Alberta's major watersheds. The river begins in the Columbia Ice fields in Banff National Park before flowing downstream through communities like Rocky Mountain House, Devon, and Edmonton.

The North Saskatchewan River eventually flows into Lake Winnipeg and completes its journey in the Hudson Bay and the Arctic Ocean.

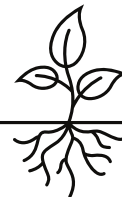
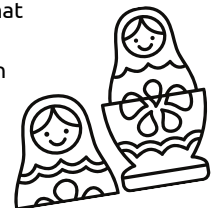
**Here are some familiar items that are kind of like a watershed!**

**Funnel:** The high parts of the funnel are like higher points of elevation on a landscape, like as hills or mountains. As water moves down the funnel, it collects to a common point before draining out the bottom. Just like a funnel, a watershed brings all water to a common point like a river, lake, or ocean!



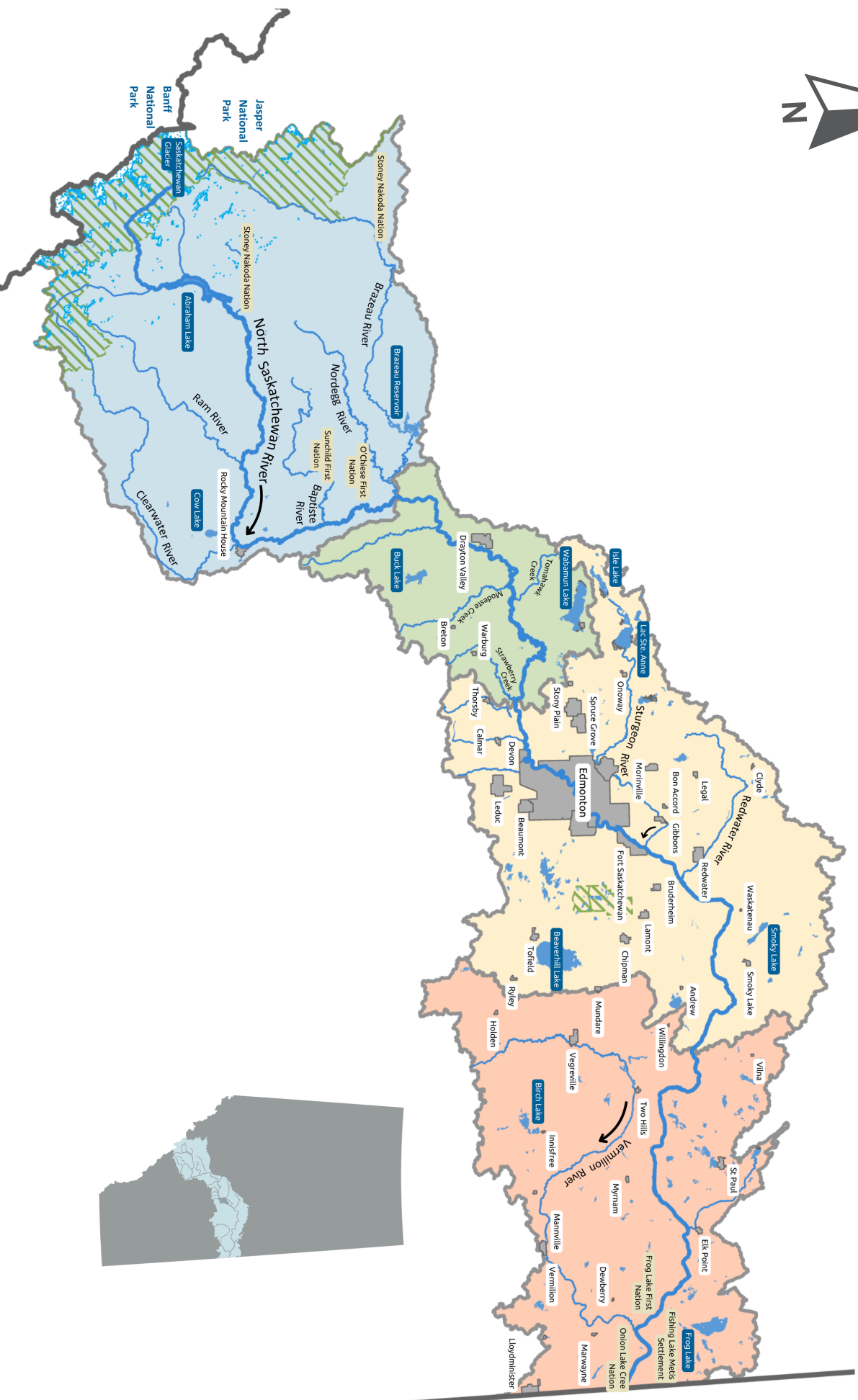
**Nesting doll:** There can be watersheds within watersheds! For example, the **North**

**Saskatchewan River watershed** is part of a larger watershed that drains into **Hudson Bay**. But within the North Saskatchewan River watershed, there are smaller watersheds, like the watershed of a single lake, or smaller river.



**Tree Roots:** Watersheds and the rivers within them, are like roots of a tree. Tiny creeks flow down the landscape into larger creeks, which all flow into a common river.

# THE NORTH SASKATCHEWAN RIVER WATERSHED IN ALBERTA



---

# WHAT IS A WATERSHED?

---

Can you think of three waterbodies (ponds, lakes, or reservoirs) or waterways (river, creek, or stream) near your home? Use a map to help!

1

---

2

---

3

---

What are some ways you can help keep your own watershed clean and help watersheds downstream?

---

---

---

---

## GLOSSARY

### **Watershed**

The area of land that carries rainwater and snow melt through soil, wetlands, and streams to a common point, such as a lake, river, or ocean.

### **Elevation**

The height of a landscape feature like a mountain, hill, or valley.

### **Precipitation**

Any water that falls from the sky, like snow, rain, or hail.

---

---

# GET TO KNOW THE WATER CYCLE: RAIN INTO RIVERS

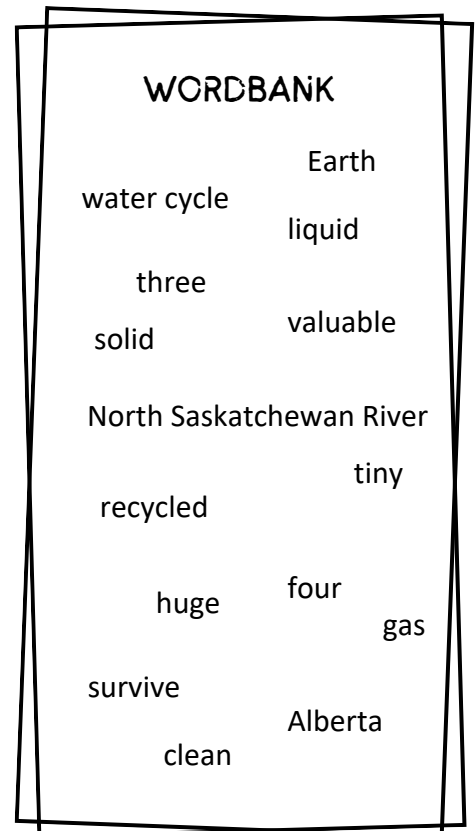
---

**Match the words in the wordbank to their correct spot:**

Have you ever wondered where the water you drink, swim in, and water your plants with come from? Water doesn't magically fall from the sky, it's actually \_\_\_\_\_ in a process: the \_\_\_\_\_!

Imagine you pour yourself a glass of water and take a sip. Did you know that the water you've just swallowed is the same water that woolly mammoths drank? That's because \_\_\_\_\_ has been recycling water for over 4 billion years! Every living creature, from \_\_\_\_\_ bacteria to \_\_\_\_\_ blue whales, needs water to \_\_\_\_\_, whether it's salty or fresh, warm or cold.

Did you know that most of \_\_\_\_\_ is pretty dry? That means water is very \_\_\_\_\_. From wetlands to fish, from the Peace-Athabasca Delta to the \_\_\_\_\_, all species depend on \_\_\_\_\_ water. If this cycle didn't happen, it would be disastrous!



As water travels through the water cycle, it transforms between \_\_\_\_\_ forms. It can be a \_\_\_\_\_ (like ice cubes), a \_\_\_\_\_ (like what you drink), or a \_\_\_\_\_ (like the steam that rises from boiling water)!

This cycle is constantly happening all around us. In fact, you have seen it in action! The cycle is made up of \_\_\_\_\_ stages: evaporation, condensation, precipitation, and collection. This process then repeats itself again, and again, and again!

# GET TO KNOW THE WATER CYCLE: RAIN INTO RIVERS

Imagine... You're a drop of water, sitting peacefully in the ocean. Suddenly, it gets super hot! You start to rise... up, up, up, to the sky. What is going on? You are experiencing \_\_\_\_\_. This stage happens when water in its liquid form transforms into its \_\_\_\_\_ form (water vapour). For example, if you've ever seen a puddle \_\_\_\_\_ after a hot, sunny day, that's evaporation in action. When the sun heats water, it gives water energy, and that energy helps water molecules escape into the \_\_\_\_\_.

Brrrr... now you're chilling up high in the sky. It's pretty \_\_\_\_\_ up there, and that's why you've now transformed back into a \_\_\_\_\_ through a process called \_\_\_\_\_. This happens when water vapour cools down and clumps together into tiny droplets. These droplets form \_\_\_\_\_.

Now you're surrounded by tons of other tiny droplets, hanging out in a big fluffy cloud. But guess what... it's getting \_\_\_\_\_. And suddenly, you're falling back to the Earth! This is \_\_\_\_\_, and it occurs when a cloud can't hold all the water anymore. That water falls back to the \_\_\_\_\_ as rain, snow, sleet, or hail!

Splash! You finally land back on Earth. Maybe you fall into a rushing \_\_\_\_\_, a calm \_\_\_\_\_, a muddy \_\_\_\_\_, or even right back into big blue \_\_\_\_\_. Wherever you end up, this part is called \_\_\_\_\_. From there, the sun might heat you up again, and the cycle begins once more.

Sometimes, when you land back on Earth, you might land on the \_\_\_\_\_. When that happens, gravity pulls you downhill, and you start \_\_\_\_\_. This is the process of \_\_\_\_\_, when water flows over the land to find its way into streams, rivers, and lakes.

## WORDBANK

cold	river	collection
	runoff	four
clouds		liquid
precipitation		pond
	disappear	
	evaporation	puddle
ground		heavy
	moving	
gas		air
		ocean
condensation		

---

# AT-HOME EXPERIMENT: WATER CYCLE IN A BAG

---

**This activity is best started in the morning, and on a sunny day**

## **You will need:**

- 1 plastic zip lock bag (sandwich size)
- 1 permanent marker (like a Sharpie)
- Clear tape
- 1 cup of water
- 1-2 drops of blue food colouring

## **STEP 1: PREPARE YOUR BAG**

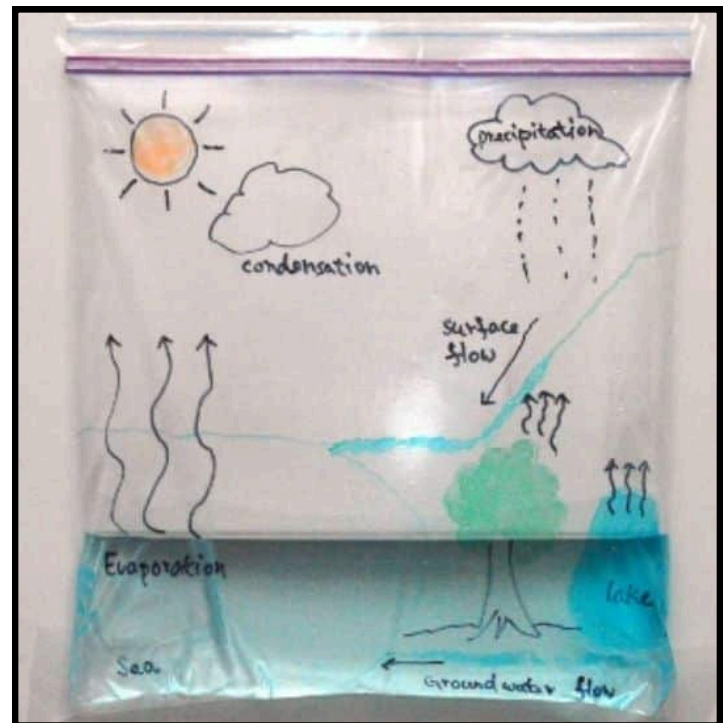
Flatten a plastic bag. Use a permanent marker to draw important parts of the water cycle. Don't forget to add labels.

### Things to draw:

- Sun
- Tree or plant
- A lake, pond, or river
- A hill

### Labels to add:

- Precipitation
- Evaporation
- Condensation
- Collection
- Runoff



via: <https://www.smorescience.com/water-cycle-in-a-bag-experiment/>

## **STEP 2: ADD WATER**

1. Fill a cup  $\frac{1}{4}$  full with water. Add 1-2 drops of blue food colouring.
2. Pour the blue water into the bag. Zip it closed.

## **STEP 3: OBSERVE CHANGES**

1. Use two strips of clear tape to hang the bag up on a window. If possible, use a window in direct sunlight.
  2. Wait for a few hours, and then check on your bag.
  3. Observe the water in the bag and record your observations:
    - Where is the water in the bag? What stages of the water cycle can you see?
    - What do you think would happen if the bag was placed in a dark or cool area?
-



# WORD SEARCH!



J	E	U	B	A	P	P	Q	F	T	A	V	T	L	C	T	V	Q	B	Y	C	I	A	A	U
I	U	W	L	N	J	Y	D	P	R	Y	T	E	R	D	K	U	N	W	X	U	H	N	W	V
Y	G	I	P	B	S	U	B	L	I	M	A	T	I	O	N	P	T	M	I	L	G	C	D	F
X	U	K	M	L	P	P	Y	H	G	H	V	N	F	U	K	E	L	N	I	E	M	H	U	U
O	W	W	A	T	E	R	V	A	P	O	R	F	C	Y	H	F	T	J	L	L	E	K	U	Z
N	T	R	R	R	I	E	R	T	Z	J	T	C	C	O	B	B	I	X	O	O	Z	C	C	T
K	B	F	Y	U	F	E	M	X	X	D	K	K	R	X	N	Z	I	E	R	M	F	S	B	B
S	A	G	D	R	N	E	J	L	S	G	W	Z	T	R	A	D	W	O	B	N	Z	S	H	O
T	T	W	P	E	W	O	V	Q	I	K	L	H	U	T	Y	Z	E	O	F	N	W	I	K	J
X	O	R	T	R	P	K	F	E	R	M	B	G	C	F	A	R	P	N	X	Z	X	U	V	X
Q	M	U	M	Y	E	O	V	F	P	Y	B	K	B	I	D	I	P	N	S	T	L	M	V	L
J	P	Q	S	K	U	C	S	V	F	H	Z	N	X	I	S	Q	X	Z	C	A	Y	Y	V	A
E	Z	R	X	I	D	M	I	I	G	E	F	V	F	U	Z	G	C	W	L	U	T	O	I	I
N	V	C	B	S	N	K	Z	P	T	H	X	W	T	Z	N	G	B	R	G	Y	R	I	I	X
F	T	A	E	C	K	N	W	U	I	I	B	U	R	J	W	Q	N	Y	C	X	H	F	O	N
Z	S	H	P	F	O	Y	G	O	H	T	O	H	Y	K	C	G	L	I	T	G	S	U	V	N
L	P	B	Z	O	V	L	Q	S	V	P	A	N	A	Y	H	R	N	G	J	L	S	C	Z	K
Y	E	C	O	E	R	O	L	J	X	F	N	T	R	D	Z	J	U	Q	W	L	Y	P	Y	A
G	K	K	I	Z	B	A	Y	E	P	H	S	C	I	B	I	L	H	T	H	Z	W	G	W	X
X	S	X	Q	J	C	S	T	P	C	S	F	E	U	O	O	T	Q	Q	T	S	K	H	F	F
M	W	T	Z	E	J	Y	N	I	Y	T	X	W	L	E	N	P	M	F	V	G	Z	T	D	O
C	G	I	Y	V	L	E	X	L	O	A	I	G	G	W	B	Z	K	H	P	I	A	V	Z	Q
V	P	D	L	H	W	U	J	G	K	N	D	O	F	X	P	N	N	I	Q	G	P	S	O	M
S	J	O	L	E	K	Q	R	W	E	S	G	K	N	O	M	H	W	C	K	S	S	W	F	B
B	B	X	N	Y	U	Y	J	P	Z	W	W	X	P	C	D	A	B	O	L	J	A	X	S	I

Find these words hidden in the grid.

Words may appear forward, vertical, or diagonal.

- |                 |                |              |
|-----------------|----------------|--------------|
| • Precipitation | • Deposition   | • Collection |
| • Condensation  | • Evaporation  | • Runoff     |
| • Sublimation   | • Water Vapour |              |

---

# READING GUIDE: RIVER TIME VORTEX EXTRAVAGANZA

---

- 1 Compare the drawings of the river on the bottom of page 2 with the drawing on the bottom of page 3.

**Write 3 things that are similar:**

---

---

---

**Write 3 things that are different:**

---

---

---

- 2 On page 6, the Indigenous Knowledge Keeper tells the siblings that water is sacred. What does the Knowledge Keeper say makes water so unique and special?

*If something is sacred, it means that it is something extremely important that must be treated with great respect.*

---

---

---

---

- 3 On the last page of the Comic, the siblings can be seen doing three different stewardship activities. Below, draw and explain one stewardship action you can take to improve the health of the North Saskatchewan River Watershed.

	<i>I can improve the health of the health of the watershed by:</i>

*Draw here*

*Write here*

---








---

## NATURE WALK: STUDENT FIELD NOTEBOOK

---

Circle the site conditions

Weather is:



sunny

some cloud

cloudy

rainy

snowy or other



snowy or other

Wind is: calm light breeze light wind strong wind

strong wind

Site type: ☐ School field ☐ Forest ☐ Wetland ☐ Other:

(Other:

FIELD NOTES

Use this space to record your observations during your nature walk. Include information like:

- **The specimen's name:** This can be the species name, or simply "bird" or "frog"
- **Its location:** For example, in a field, underwater in a pond, or flying
- **Noticeable characteristics:** Include colour, size, or something unique about it
- **Structural adaptations:** If an animal, note things like the number of legs it has. If a plant, describe or draw things like the leaves or plant size.
- **Behavioural adaptations:** Write down how it moves or sounds.

[illegible]

[illegible]

Use this space to add sketches to any observations:

## LEARNING TO LOOK FOR SIGNS OF WILDLIFE

During nature walks, even if you don't see animals, chances are there are signs that wildlife are nearby. Here are a few things you might want to watch for or add to your field notes.

## ANIMAL TRACKS

Check size, symmetry, and distance between steps. Sketch their shape.

Check size, symmetry,  
and distance between  
steps. Sketch their shape.

### BIRD NESTS OR FEATHERS

Record features like shape and size. For nests, check what it is made of and its location (high up, on the ground).

Record features like shape and size. For nests, check what it is made of and its location (high up, on the ground).

## OTHER SIGNS

Everything from eggshells, antlers, chewed twigs, or even scat (droppings) can indicate an animal is nearby.

Everything from eggshells, antlers, chewed twigs, or even scat (droppings) can indicate an animal is nearby.

---

# NATIVE PLANT WORD SCRAMBLE

---

Unscramble the letters to correctly spell the names of some common native plants in the North Saskatchewan River Watershed.



1. LTCTAAI \_\_\_\_\_



2. WEFDIREE \_\_\_\_\_



3. STKAANOSO BRERY \_\_\_\_\_



4. LLPGODEEO IENP \_\_\_\_\_



5. ODNOEDRLG \_\_\_\_\_



6. ILBRTNEMG PESNA \_\_\_\_\_



7. THIEW EUCSPR \_\_\_\_\_



8. WDIL SERO \_\_\_\_\_



9. RRAOYW \_\_\_\_\_

---

# LEARN YOUR LEAVES

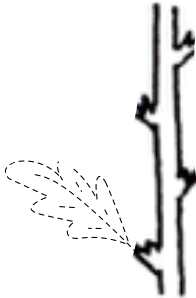
One of the best ways to identify plants is by the shape and size of their leaves.

Learn what common plant definitions are by completing the drawings below

Where are the leaves attached to the stem?

Add leaves to each stem to learn the difference between **Alternate**, **Opposite**, and **Basal Rosette** leaf arrangements.

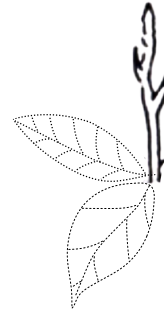
**Alternate**



**Opposite**



**Basal Rosette**



Are there many leaves on separate stems, or all together?

Copy the leaves to learn the difference between simple and complex (compound) leaves.

**Simple leaves**



**Compound leaves**

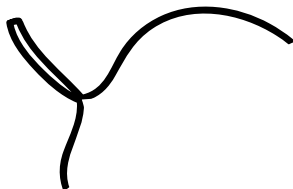
Sometimes called complex leaves



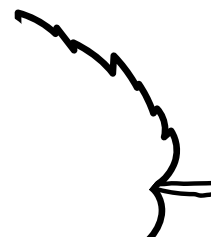
What do the edges of the leaf look like?

Finish the drawings to learn the difference between smooth and toothed leaf edge.

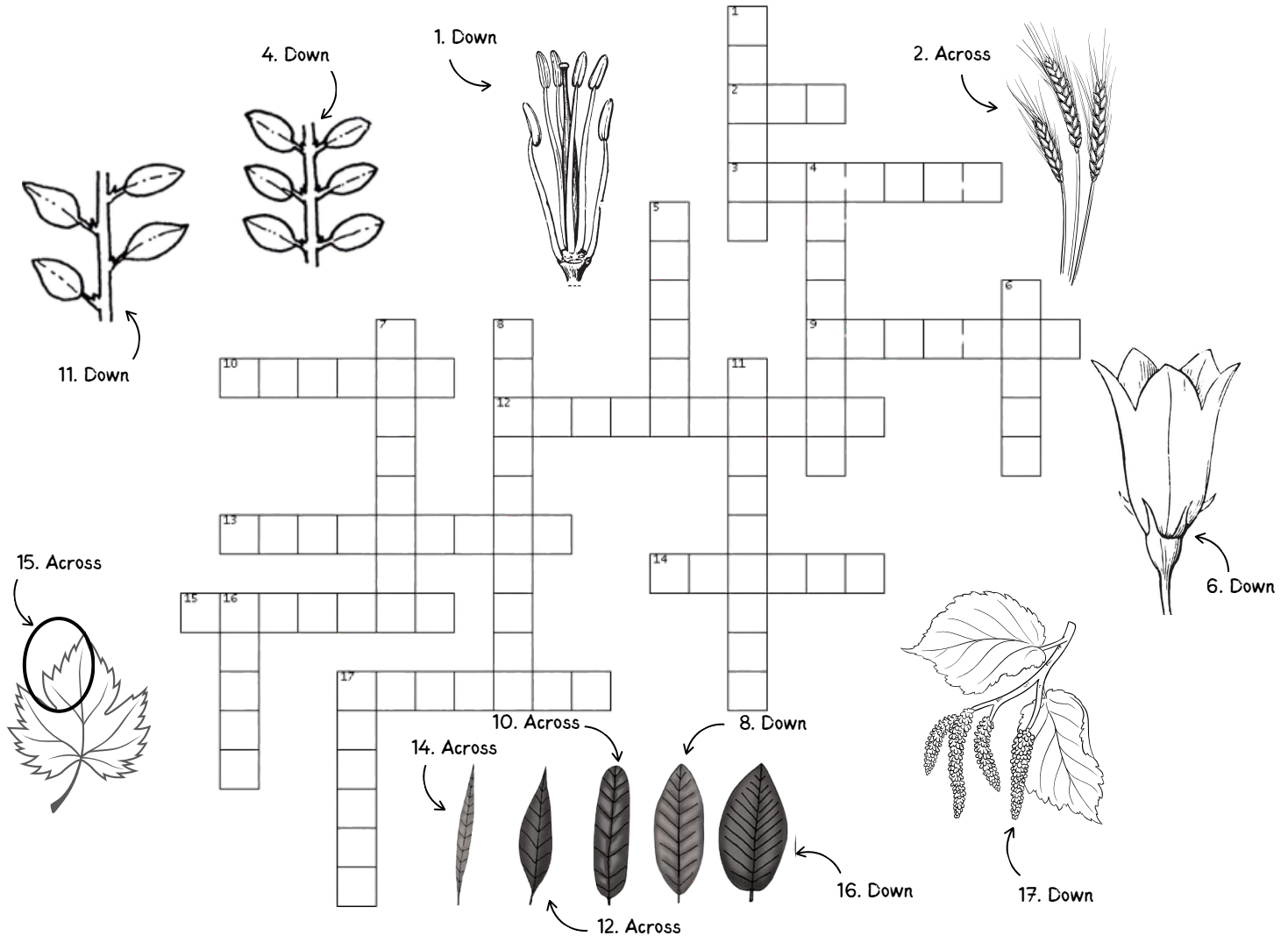
**Smooth**



**Toothed**



# NATIVE PLANT CROSSWORD



USE THESE CLUES TO COMPLETE THE CROSSWORD PUZZLE:

## ACROSS

2. Small hairs at the tips of some grass species seeds.
3. The study of ecosystems and their interconnected components.
9. A group of living organisms that have similar and exchangeable genetics.
10. Oval shaped leaves
12. A slightly triangularly shaped leaf. Gaining its name from the comparison to a lance weapon from medieval Europe.
13. The minerals found in soil that plants need to function.
14. The leaves are very thin and long. They are basically a line, both sides of the leaf are nearly parallel.
15. The leaves have serrations like the bumps on a steak knife along the side instead of being smooth.
17. A leaf growth pattern in which multiple leaflets are attached to the same stem and these leaflets as a whole comprise the leaf. Also called a compound leaf.

## DOWN:

1. The male part of a flower that holds the pollen of the plant.
4. Leaves grow so that both leaves on either side of the stem start at the same place.
5. Originally from a place and belonging there.
6. A modified leaf that makes up the outermost part of a flower. They tend to be green
7. Not originally from a place and causing it harm.
8. Oval shaped leaves with a slight point at the tip
11. Leaves grow so they are not side by side. After one leaf there is a space then the next grows on the opposite side of the stem.
16. The leaves are broad and rounded at the base but come to a point at the tip. They look similar to a spade in a card deck.
17. The flowers of many wind pollinated deciduous trees. They are a drooping cluster of flowers that can kind of look like a fluffy animal tail.

# ANSWERS

## READING GUIDE

### Question 1:

Similarities may include the shoreline, its location, colour, or that people can swim in it.

Key differences include litter in the water, shoreline vegetation, insects, fish, and clear water (note the sister's reflection)

### Question 2: Answers may include

- The Indigenous community follows the water (as do other animals)
- Water is alive
- Water is needed for live itself

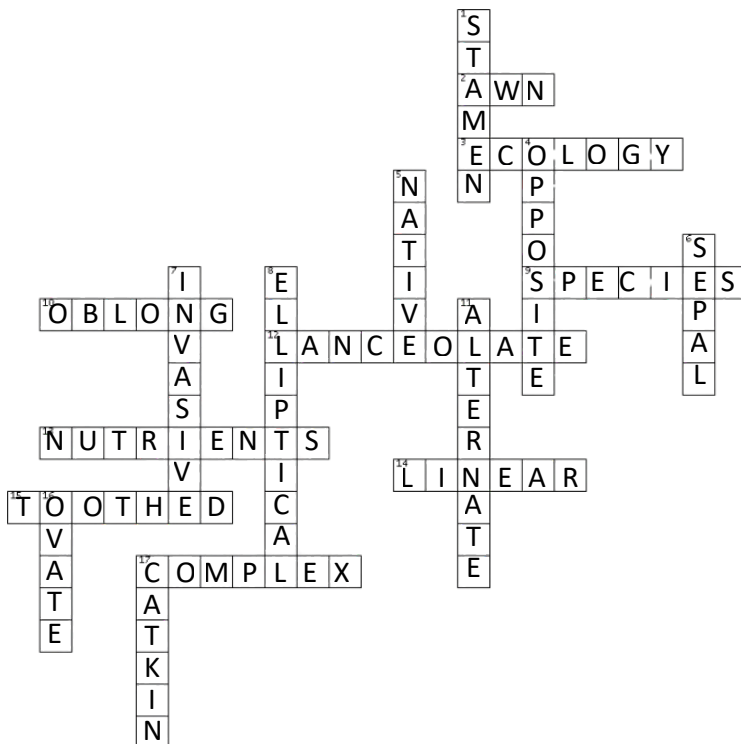
### Question 3: There are no right or wrong answers here! Ideas may include

- Not littering
- Picking up pet waste
- Planting a native garden
- Learning more about nature

## WATER CYCLE WORD SEARCH



## NATIVE PLANT CROSSWORD



## NATIVE PLANT WORD SCRAMBLE

1. CATTAIL
2. FIREWEED
3. SASKATOON BERRY
4. LODGEPOLE PINE
5. GOLDENROD
6. TREMBLING ASPEN
7. WHITE SPRUCE
8. WILD ROSE
9. YARROW