

GRADE

4

FOREST INVENTORY

Inside
education

MY COMMUNITY FOREST

A stylized illustration of a forest scene. The background is a deep blue with white outlines of clouds. In the foreground, there are several green trees of various shapes and sizes, some with dark trunks. A winding white path leads through the forest. The overall style is simple and graphic.

TEACHER'S GUIDE

KNOW BEFORE YOU GO!

TEACHER NOTES

Welcome to your very own forest field trip kit! Your kit includes the following materials, which will help you and your students complete a guided community forest inventory:

- **Student booklets** (class set)
- **Anemometer** (1)
- **Magnifying glasses** (class set)
- **Tally counter** (5)
- **Guide to Common and Native Trees and Shrubs of Alberta** (1)
- **Alberta Nature Guide** (1)
- **Pocket Guide to Animal Tracks** (5)
- **Pencil crayons** (2 per student)
- **Rulers** (class set)

The community forest inventory is an online survey that we are asking all schools to complete so we can create a database of forest inventories from across the province. The student responses that you need to compile are highlighted in the booklet, and are noted in the teacher's notes at the top of each activity.

This booklet will serve as an answer key for you, help you prepare by laying out the materials you will need for each activity and also suggest discussion questions to debrief the activities with your students.

For your forest exploration, choose an area within walking distance of your school; this can be the school yard or a nearby park/natural area. Look for an area with a few different kinds of trees/shrubs where you can set safe boundaries for outdoor exploration.



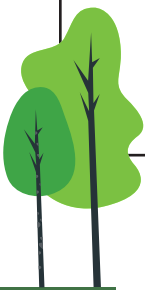
Scan the QR code to access the Community Forest Inventory survey

Think about what you already know and want to know about plants and your community forest. When you get back from the forest, write down what you learned!



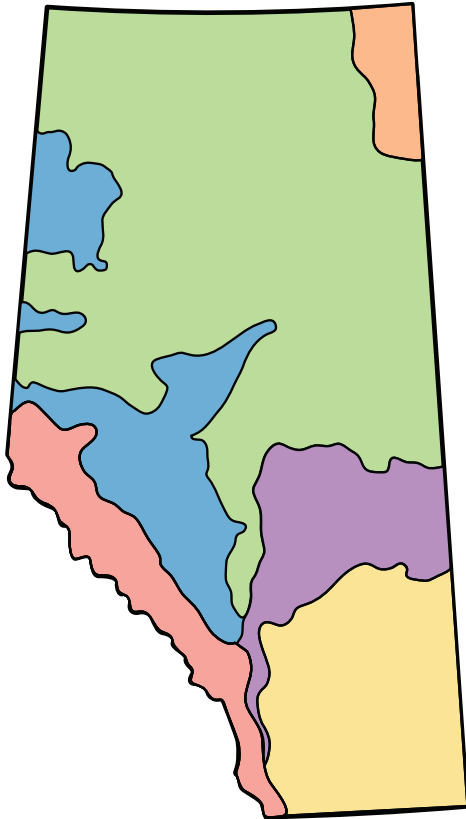
K What do I know?	W What do I want to know?	L What have I learned?

Why is your community forest special?



What ecoregion are you in?

Label the ecoregions and draw a star on the map to show where you are in Alberta.



Parkland

Canadian Shield

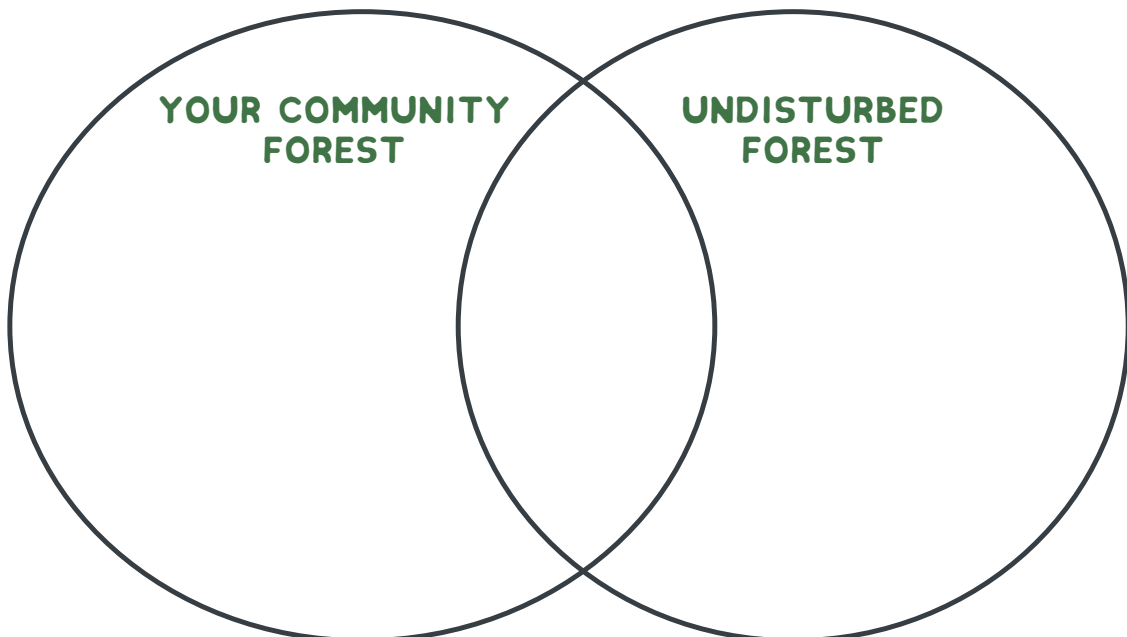
Boreal Forest

Foothills

Rocky Mountains

Grasslands

Make some predictions about the similarities and differences between the forest you are visiting and one that is away from human development.



SECTION 1

GET TO KNOW YOUR COMMUNITY FOREST

Teacher Notes

This activity is done individually.

TOTAL TIME: 10 - 15 minutes

MATERIALS FROM KIT:

- *Anemometer*

DISCUSSION QUESTIONS

- Are there more human-related or natural items? Why?

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- School Name
- Ecoregion
- 1 photo of your forest site (*taken by the teacher*)
- Class average of wind speed and temperature

SITE ASSESSMENT

Knowing the weather conditions when you are about to head outside is important for safety! You need to dress appropriately and weather events like wind and heavy rain may be dangerous. **Record the outdoor weather conditions as a class using the *anemometer* in your kit.**

WEATHER CONDITIONS (*circle one*):

Sunny / Partly Cloudy / Cloudy / Rainy / Snowy / Windy

TEMPERATURE: _____

WIND SPEED: _____

Find a space where you can sit by yourself and use your senses to experience the forest today. Record your observations in the table below:

What do you hear?	What do you smell?	What do you feel?



EYE SPY

Look around your community forest for the following items and think about how this forest is used by both humans and the natural environment.

Check off the items you see. Add other interesting things you notice to the bottom of the list!

HUMAN RELATED

- Houses
- Cleared trails
- Fences
- Mowed lawns/grass
- Cars
- Birdhouses
- Power lines
- street lights

NATURAL

- Birds
- Insects
- Bird nest
- Large tree (*taller than a house*)
- Young saplings
- Shrubs
- Flowers

HOW IS YOUR COMMUNITY FOREST USED?

- Teaching & learning (*school*)
- Picnics
- Playing/recreational games (*soccer, baseball, frisbee...*)
- Walking/Running/Cycling
- Community activities (*families, seniors, preschool...*)
- Habitat for plants & animals
- Farming/Ranching
- Forestry
- Oil & Gas
- Housing development
- Scientists / Researchers

LIST OTHER COOL THINGS YOU SAW:

- _____
- _____
- _____
- _____
- _____



PLANTING THE SEED

Teacher Notes

Before your class uses the tally counter to count the number of trees, shrubs, grasses etc. be sure to set **reasonable boundaries** (an area of 20 m x 20 m is usually sufficient).

Part 1 & 2 are done individually.

Part 3 is done in small groups - have different groups count different plant types.

DISCUSSION QUESTIONS

- Why are the different plant parts important for the plant to survive?
- What did you notice about where different types of plants grew in the forest?

TOTAL TIME: 20 - 30 minutes

MATERIALS FROM KIT:

- **Tally counter** (1 per group)
- **Guide to Common Native Trees and Shrubs of Alberta** (1 teacher copy - use to help students identify the plants they find)

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- The list of plants in your forest from most to least (use a consensus approach if findings vary)

TREES, SHRUBS, GRASSES, AND MORE

A forest is more than trees and it's time to get to know the plants that make up your community forest.

Find a plant and draw it in the box below.

Then, use the terms on the side to label the parts of the plant.

Hint: You will not use all of the labels!

Flower

Cone

Fruit

Needles

Leaf

Trunk

Stem

















Catkin

Roots





LEAF PATTERNS

Leaf shapes and patterns can tell us a lot about plants. Take a closer look at the leaves of the plant you drew. **Check off the pictures below that look like your plant.**

<input type="checkbox"/> Needleleaf 	<input type="checkbox"/> Single Needles 	<input type="checkbox"/> Clustered Needles 	<input type="checkbox"/> Needle Pairs (Sheathed) 
<input type="checkbox"/> Square Needles 	<input type="checkbox"/> Flat Needles 	<input type="checkbox"/> Broadleaf 	<input type="checkbox"/> Alternate 
<input type="checkbox"/> Opposite 	<input type="checkbox"/> Compound 	<input type="checkbox"/> Toothed Edge (coarse or fine) 	<input type="checkbox"/> Lobed 
<input type="checkbox"/> Oblong 	<input type="checkbox"/> Oval/Ovate 	<input type="checkbox"/> Triangular/Heart 	<input type="checkbox"/> Round 

Which plants make up your community forest? Choose a small area of your community forest to count some plants. **Keep track of how many of each type of plant you see using your tally counter.**



Deciduous Trees <i>(trees with broad leaves)</i>	Coniferous Trees <i>(trees with needles and cones)</i>	Shrub	Grass	Other <i>(ferns, vines, etc.)</i>
Ex. 				

ANIMAL HABITATS AND EVIDENCE

Teacher Notes

Remind students not to touch or disturb the animal evidence.

This activity is done in small groups.

GUIDING QUESTIONS

- What do you think makes this forest a good habitat for wildlife?

TOTAL TIME: 20 - 30 minutes

MATERIALS FROM KIT:

- *Alberta Nature Guide* (1 teacher copy)
- *Animal Tracks Pocket Guide* (1 per group)

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- Average animal habitat score from your class (a number between 0-20)

Search for signs that animals are using your community forest!
Use your *Animal Tracks Pocket Guide* to help you in your search.

Circle either yes or no for each line and then add up your results to give this forest a habitat score from 0 - 20.

**Remember you can look but do not touch or disturb animal evidence.*

- | | | | |
|--|------------------------|------------------------|------------------------|
| 1. There are places for animals to hide | Lots = 2 points | Some = 1 points | None = 0 points |
| 2. I found animal tracks | Yes = 2 points | No = 0 points | |
| 3. I found animal scat (poop) | Yes = 2 points | No = 0 points | |
| 4. I found animal hair, feathers or animal fur | Yes = 2 points | No = 0 points | |
| 5. I found an animal burrow or hole in the ground | Yes = 2 points | No = 0 points | |
| 6. There is water nearby for animals to drink | Yes = 2 points | No = 0 points | |
| 7. I found insect galleries in trees | Yes = 2 points | No = 0 points | |
| 8. I found a bird nest or woodpecker hole | Yes = 2 points | No = 0 points | |
| 9. I found animal bones | Yes = 2 points | No = 0 points | |
| 10. I saw a live animal | Yes = 2 points | No = 0 points | |

Bonus points (max 2) :

List any other evidence you found that lets you know animals are using your community forest.

_____ **TOTAL HABITAT SCORE**

THE STORY OF FOREST PESTS AND DISEASE

Teacher Notes

This activity is done individually.

TOTAL TIME: 10 minutes

GUIDING QUESTIONS

- Is it "bad" for there to be unhealthy trees in a forest? Why/why not?

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- Class Consensus: Most of the trees in our community forest are **HEALTHY** or **UNHEALTHY**

Forest pests and disease are a natural part of the life of a forest. We do need to pay attention, though, because pests and disease can spread quickly and impact forest health. Trees that are older or that grow too close together are at higher risk of pests and disease.

Find a tree and complete the story below to learn how pests and disease may change your community forest.

Once upon a time there was a tree named _____ . The tree was
(choose a name for your tree)
 very **TALL / SMALL** and also quite **YOUNG / OLD**. _____ has a
(circle one) (circle one) (tree name)
 good life for a tree; it grows in a very **SUNNY / SHADY** spot and grows **FAR / CLOSE**
(circle one) (circle one)
 from/to its neighbour trees. One day a bird lands on one of _____
(tree name)
 branches and says "hello" _____!
(tree name)

This bird is looking to build her nest but wants to make sure that
 _____ is a healthy strong tree.
(tree name)

The bird pecks on the bark and it sounds **SOLID / HOLLOW**. She looks to see if the
(circle one)
 trunk has **LITTLE / LOTS OF** damage like cuts, splits, scars or marks.
(circle one)

There are **NO / SOME** broken branches. The bird sees **MANY / FEW** leaves that are
(circle one) (circle one)
BRIGHT / DULL in colour and **ARE / ARE NOT** covered in signs of insects.
(circle one) (circle one)

The bird decides that overall this tree is
HEALTHY / UNHEALTHY and
(circle one)
 that she **WILL / WILL NOT** build her nest.
(circle one)



DIG DEEPER INTO DECOMPOSITION

Teacher Notes

Part 1 & 2 are done individually.

GUIDING QUESTIONS

- Why is it important to have lots of different types of decomposers?
- What would happen to a forest if decomposers were to disappear?

TOTAL TIME: 30 minutes

MATERIALS FROM KIT:

- **Magnifying glass** (1 per student)
- **Ruler** (1 per student)

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- Average cm of leaf litter

The forest floor and soil beneath your feet is just as important as the plants and animals. Fallen leaves, insects and fungi work together to transform this “waste” into soil to support new life.

IS YOUR FOREST RECYCLING?

1. Leaf litter is the layer of leaves, cones, twigs and other vegetation that has fallen to the forest floor. **Use your ruler to measure the depth of leaf litter and check off the reasons why leaf litter is important:** The more leaf litter you have the better!

_____ cm

Leaf litter is important because it:

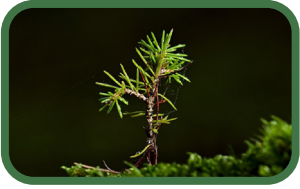
(check all that apply)

- Keeps the soil moist
- Provides habitat for decomposers
- Adds nutrients to the soil
- Provides food for animals
- Protects tiny seedlings and plants
- Provides nesting material for birds and other animals





2. Take your **magnifying glass** and go on a decomposer scavenger hunt and check off what you find below. Match the decomposers to their role in the forest.



Tree Seedling



Dead Leaves



**Ants, Centipedes
and Spiders**



A Fallen Log



Lichen



Worms



Fungus/Mushrooms

A favourite food of worms.

Break down decomposing material.

This has roots that help to break down old logs

A home for insects (*and larger creatures too!*)

These long creatures turn dead leaves into soil.

These insects find homes and food on the forest floor.

Breaks down rocks to make new soil.

THE FOREST AND YOU

Teacher Notes

If possible sit away from the area you did most of the activities and look at the entire space from a distance to complete this activity.

GUIDING QUESTIONS

- Are human-influenced areas always “bad” for the forest?

TOTAL TIME: 20 minutes

MATERIALS FROM KIT:

- **Pencil crayons** (2 colours per student)

INPUT INTO THE COMMUNITY FOREST INVENTORY:

- Average % of natural forest in your study area
- List 3 ways your class is going to care for the community forest

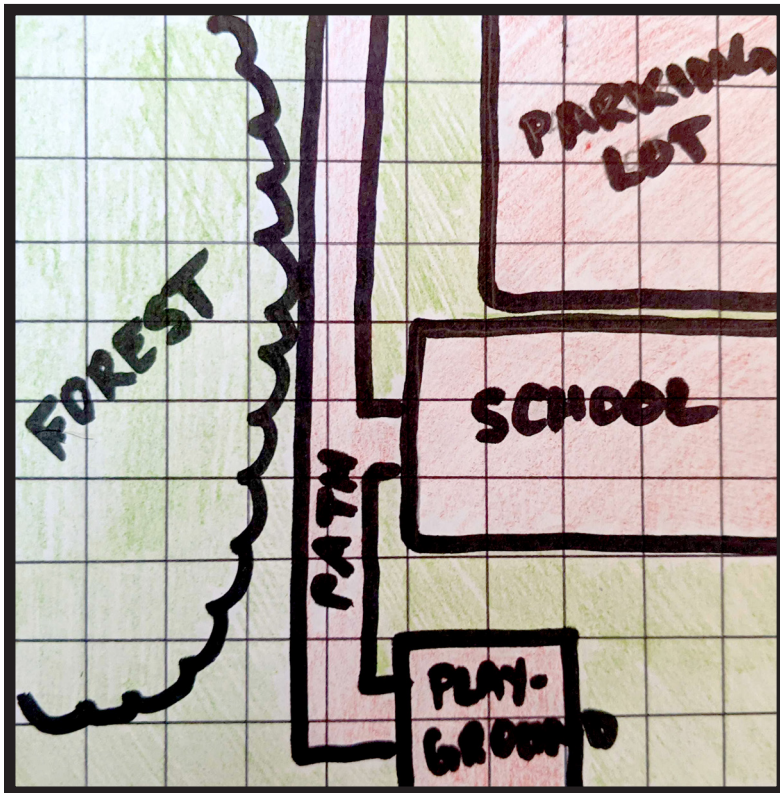
Think about your community forest as a whole and all the different ways that plants, animals and people are interacting with each other.

STEP 1

Draw a sketch of your community forest

STEP 2

Using 2 different coloured pencils to create an image of your forest that represents all of its parts.



Colour 1 = the areas that are influenced by humans (eg. path, playgrounds, picnic area, soccer fields, buildings)

Colour 2 = the natural areas (eg. grasses, trees, shrubs, water)

Count the number of squares of each colour

Colour 1 = 55

human influenced

Colour 2 = 45

natural forest

Why would it be important to limit the amount of space influenced by humans in your community forest?



FOREST STEWARDSHIP

Think about the ways that you interact with your community forest.

Circle thumbs up or thumbs down if the activities are helpful or harmful to the environment.

- Feeding wildlife your leftover lunch
- Organizing a community forest clean up
- Breaking tree branches
- Starting a compost program
- Clearing the ground of fallen leaves
- Letting dogs and cats run loose
- Sharing what you know about the forest

List at least one thing you can do to care for your community forest?



NOTES





*SUPPORTING TEACHERS,
INSPIRING STUDENTS.*

Visit www.INSIDEeducation.ca to learn more about the programs and resources we offer!

SPRING 2021

This learning resource was made possible through the generous support of our partners including:
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We extend our appreciation to the following:

