

PLANT COMMUNITIES

A Field Study for Grade 4 Students

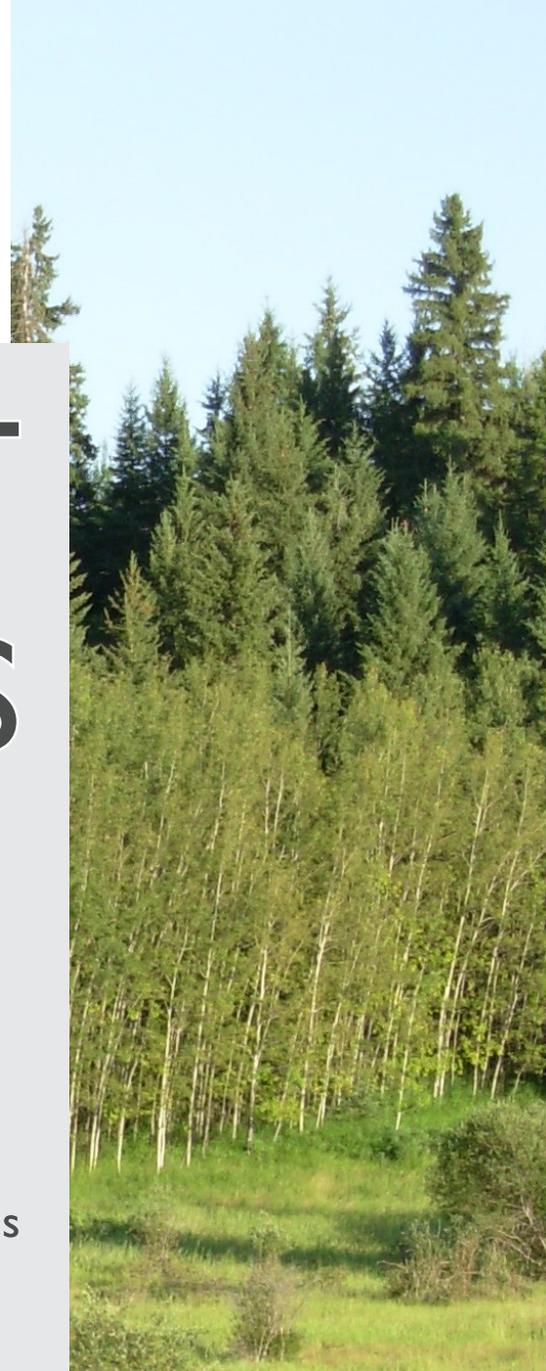
FISH CREEK
ENVIRONMENTAL LEARNING CENTRE

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CONNECTING PEOPLE WITH PARKS

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Introduction

This is a curriculum-connected, full day study with multidisciplinary preparatory and post-visit resources. The intent is to offer a hands-on experience for students that naturally immerses them in the field study components of *Topic E: Plant Growth and Changes* from the Grade 4 Alberta Elementary Science Curriculum components and the vision of Alberta’s Plan for Parks.

Fish Creek Provincial Park is one of Canada’s largest urban provincial parks, stretching from the western edge of the city to the Bow River. The park has a strong vision within its visitor services program plan to support and foster environmental and cultural education.

Alberta Parks acknowledges that Fish Creek Provincial Park is part of the traditional territory of Treaty 7 region in Southern Alberta, which includes the Blackfoot Confederacy (comprising Siksika, Piikani and Kainai First Nations), the Tsuut’ina First Nation, and the Stoney Nakoda First Nation. The City of Calgary is also home to Metis Nation of Alberta, Region III.



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Facility & Rules

THE FACILITY

The Fish Creek Environmental Learning Centre (13931 Woodpath Road SW) is located at the west end of the park and offers five indoor classrooms, bathroom facilities, an outdoor picnic area, an accessible trail system and an extensive variety of natural ecosystems: an old growth spruce forest, grasslands, riverine forests, a creek and several wetlands as well as disturbed (urban) areas.

1. Each teacher will be given a classroom to use as a home base for the day's activities.
2. Some equipment for the day's activities will be available at the Park. It is your responsibility to count all equipment and return it at the end of the day. **There is a fee charged for missing or broken equipment.**
3. Washrooms and water fountains are located in the building. There are no vending machines or coffee/tea available.
4. A short orientation (about 15 minutes) will be provided to the entire group upon arrival to welcome and introduce everyone to the park, its rules, the program for the day and what the students may discover outside.
5. A snack break will take place *after* the group orientation. Please ensure that the students are supervised by teachers during this time.
6. Volunteers will have a separate orientation (~10 minutes) on the day of the field trip during student snack break. This will introduce them to the equipment provided, to a map of the activity area (maps provided), to the general flow of the day and answer any questions that they may have.
7. **There are NO indoor activities available. Please bring your own activities and/or DVDs when planning for inclement weather.**



LUNCH BREAK PROCEDURES

Please challenge your class to bring a litter-less lunch to the park for their program.

INSIDE THE BUILDING

Your class may eat inside the facility, within their assigned room.

- Students must be supervised by an adult at all times while they are in the building (including classrooms, washrooms and hallways).
- Classes from other schools and parks staff may be in the facility at the same time as your class(es). Please respect them and keep noise to a minimum, especially in the washrooms and common areas.
- Help us keep the Learning Centre clean. There are garbage and recycling containers in the brown built-in cabinets in each room.
- Leftover fruit and vegetable materials, such as banana peels and apple cores, are collected in a white compost bucket in each room.

OUTDOOR FACILITIES

There are several picnic tables and a fire pit behind the Fish Creek Environmental Learning Centre. This area is available on a first-come, first-served basis. Plenty of additional picnic tables are available just north of the Learning Centre building about a 2 minute walk up the trail.

- Students must be supervised by an adult at all times.
- Fish Creek Provincial Park is a public park and the facilities in an around the Learning Centre are for everyone to use. Please respect other park users.
- Leave no trace: All garbage, recycling and compost must be put in appropriate bins (outside or in the building)
- **DO NOT FEED OR DISTURB WILDLIFE.**
- If you choose to use the fire pit you must bring your own firewood. **Do not use branches or deadfall from the park.** Have a bucket of water nearby and check that the fire is out before leaving the fire pit area.

Before the Visit

PREPARATION

The following steps and materials will assist you in preparing for your field trip to Fish Creek Provincial Park. Please take the time to review the following pages carefully.

1 Site Visit Teacher Orientation

Attending a teacher orientation prior to your class visit is mandatory and essential for familiarizing yourself with the facilities and the surrounding trails. Returning teachers are not obligated to attend but are welcome. Dates for the teacher orientations will be sent to you via email so you can register for an orientation on a date of your choice.

2 Preparation Checklist

A full, detailed teacher checklist for your field trip preparation is available on the next page.

3 Program Start and End

Program start and end times are flexible to accommodate bus availability and travel distance to the park. In general, programs start between 9:30- 10:00 am and finish between 1:45- 2:00 pm.

4 Field Trip at a Glance

Group Orientation (15 minutes)	Overview of park rules, safety and behaviour expectations for the day.
Student Snack Break Parent Volunteer Orientation (10-15 minutes)	Overview of program activities for adult volunteers.
Educational Activities	Students explore the park doing curriculum connected activities in small, volunteer-led groups.
LUNCH BREAK	
Educational Activities	Students continue to complete curriculum connected activities with volunteer leaders.
Groups return to the Learning Centre for Program Wrap-up	Debrief by staff educator. Final washroom break, head count, and gather personal belongings.

Program Wrap-up should take place at least 15-20 minutes prior to the scheduled bus departure.

TEACHER CHECKLIST: Preparing for Your Day at the Park

Prepare yourself

- Read the teacher package thoroughly: phone 403-297-7926 if you have any questions.
- Register for and attend a Teacher Orientation date on site before your field trip.
- Book your bus(es).
- Give every driver - including the bus driver - a copy of the route map (found in the Appendix).
Make sure all drivers know you are coming to the west end of the park, near Woodbine!
- Check student health forms, looking for allergies in particular to bee/wasp stings
- Bring a first aid kit and a few band aids with each adult.

Prepare the students

- Discuss how Fish Creek Provincial Park is a wild environment.
 - Do not feed or disturb wildlife: Quietly observe all wildlife from a comfortable distance.
 - Leave only footprints: Share discoveries, but leave everything as they found it.
 - Pitch in: Litter should be placed in the garbage cans provided or in a pocket.
- Discuss behavioural expectations. Explain that the field study will be another school day, just at a different place. All the school rules apply.
- Discuss the purpose of provincial parks and protected areas. Have the class make a list of ways they can show respect for living things during their visit to the park. *Possibilities include:*
 - Stay well back from the banks of Fish Creek
 - Leave ant hills, nests and rotting logs alone and intact. They are animal homes.
 - Walk with care and mindfulness to minimize your impact.
- Discuss outdoor safety. Students need to:
 - Stay with an adult all times.
 - Walk, do not run.
 - Keep feet on the ground: no climbing.
 - Leave dead branches on the ground:
- Discuss what to wear on the field trip
 - Hats, sunscreen, insect repellent.
 - Runners, comfortable boots (no sandals/high heels). Dress in layers and bring extras.
- Complete some preparatory activities, either the ones in the next section of this package or your own.

Prepare the adults

Please follow the recommended adult to student ratios as outlined in your school board regulations.

- Provide the following to adult volunteers and review with them: Key Messages, Chaperone Letter, Access Map, an information booklet, will be provided to them on the day of the trip to assist them.
- Emphasize the following: there is nowhere to buy anything here, including coffee.
- Ensure adult volunteers are aware that their role is to lead a small group of students for part of the day and supervise students during lunch period.

FISH CREEK PROVINCIAL PARK: Key Messages

Please review and be sure everyone understands the following information before your visit the park.

- Our vision: Alberta's parks inspire people to discover, value, protect, and enjoy the natural world and the benefits it provides for current and future generations.
- Alberta Parks acknowledges that Fish Creek Provincial Park is part of the traditional territory of Treaty 7 region in Southern Alberta, which includes the Blackfoot Confederacy (comprising Siksika, Piikani and Kainai First Nations), the Tsuut'ina First Nation, and the Stoney Nakoda First Nation. The City of Calgary is also home to Metis Nation of Alberta, Region III.
- Alberta's parks and protected areas belong to all Albertans and contain many different natural landscapes that are home to numerous plant and animal species as well as significant cultural and historic resources. The province's network of parks and protected areas helps to ensure that Alberta's natural and cultural heritage is preserved for future generations.
- There are a wide variety of visitors and users of our parks. Everyone must respect and share the park and its facilities and resources.
- Stay on designated trails while moving through the park and participating in group activities. Staying on designated trails reduces impact to the natural habitats of the park. Please share the trail with other users.
- Feeding wildlife is prohibited. The park's ecosystems provide all the food and habitat wildlife require for their basic needs. Feeding wildlife can cause wildlife to associate humans with food. Quietly observe wildlife from a safe and comfortable distance so as not to disturb them or put them or you at risk.
- Everything in the park – living and non-living is protected. Students are welcome to share their discoveries, but must remember to leave everything as they found it. Do not remove anything natural from the park.
- Litter must be placed in garbage cans or packed out.
- Use only designated fire pits. The collecting and burning of park vegetation is not permitted. You must ensure fires are fully extinguished before leaving them.



PRE-FIELD TRIP ACTIVITIES

Preparatory activities will enhance your students experience and learning at the park.

The Importance of Plants

As a class, list all the ways plants are an important part of our lives. Classify the list into groups according to common characteristics such as:

- food
- shelter
- aesthetics
- clothing
- tools
- medicine
- basis for life
- other

Vocabulary

RESOURCE: Appendix p.A1

Review science vocabulary with the class. This could be done in any number of ways:

- Have students create a poem or new lyrics for a popular song using vocabulary
- Play Vocabulary Bingo. You call out the definitions and students have the words on their Bingo sheets.

Growing Conditions

RESOURCE: Appendix p.A4 - A5

Outside in the local plant community have students locate the same plant they chose for the *Plant Parts* activity (this can be done on the same day if necessary). They will explore and record the environmental conditions that are influences on their plant's growth. Students will complete the "Environmental Conditions" sheet recording information on the following:

- Air/Wind
- Light/Heat Energy
- Water
- Nutrients
- Space
- Slope & Aspect
- Humidity

Plant Parts

RESOURCE: Appendix p.A2-A3

Go outside and explore the local plant community. Have students pick a plant and complete the worksheet provided.

Roots: Most often this is the underground part of the plant that anchors the plant, absorbs water and nutrients from the soil and can store food. Roots are covered with small hairs. There are commonly two kinds of roots systems:

- Tap root - a long thin main root that extends down deep into the soil.
- Lateral root - many intertwined roots that stay closer to the surface and spread out.

• **Stems:** The part of the plant, usually above ground and bears leaves, reproductive parts and buds. The stem contains the vascular system of the plant which carries water and nutrients from the roots to the rest of the plant and also carries sugars from the leaves to other parts. Plants can have a single or multiple stems.

Leaves: The part of the plant where photosynthesis occurs, Leaves generally tend to be broad and thin to capture maximum sunlight.

Flowers: These are the reproductive parts of the plant. At the center of the flower are pistils and carpels, the essential reproductive parts. The non-essential parts, sepals and petals comprise the colourful part of the flower. The arrangements of these parts is usually a function of pollination requirements and varies from plant to plant.

Student Journal - Data Collection

RESOURCE: Appendix p.A10 - A19

Review the Student Journal pages and the information you want your students to collect. The journal pages are tools your students can use to record and reflect on what they are learning through observing, describing, comparing and contrasting the plant communities they visit.

Your Day At the Park

FIELD TRIP ACTIVITY SUMMARY

The following outdoor field trip activities are curriculum-connected and intended to connect learning in an experiential way to the natural world.

1 Importance of Plants

Completed in small, adult volunteer led groups throughout the day.

Activity Summary: Students will look for plants and plant uses listed on the IMPORTANCE OF PLANTS journal page. When they locate a plant, the students will sketch the leaf in detail and record which ecosystem it was found in.

2 Grassland Study

RESOURCE: Appendix p.A6

Completed in small, adult volunteer led groups throughout the day.

This exploration of the grasslands is a series of 4 short activities.

Grasslands Introduction activity, students observe, measure and record data relating to the growing conditions in the grasslands. Back at school, this data will be compared to that measured in the white spruce forest with differences noted and discussed.

Rope Ring is a mapping activity that requires students to take a close look at the physical structure of each plant within a rope circle.

Alien Invaders investigates non-native plant species and their impact on ecosystems.

Catching The Colours is a quick, fun way to practise classifying by colour instead of physical structure.

3 White Spruce Study

RESOURCE: Appendix p.A8

Completed in small, adult volunteer led groups for half the day.

This exploration of the forest is a series of 4 short activities;

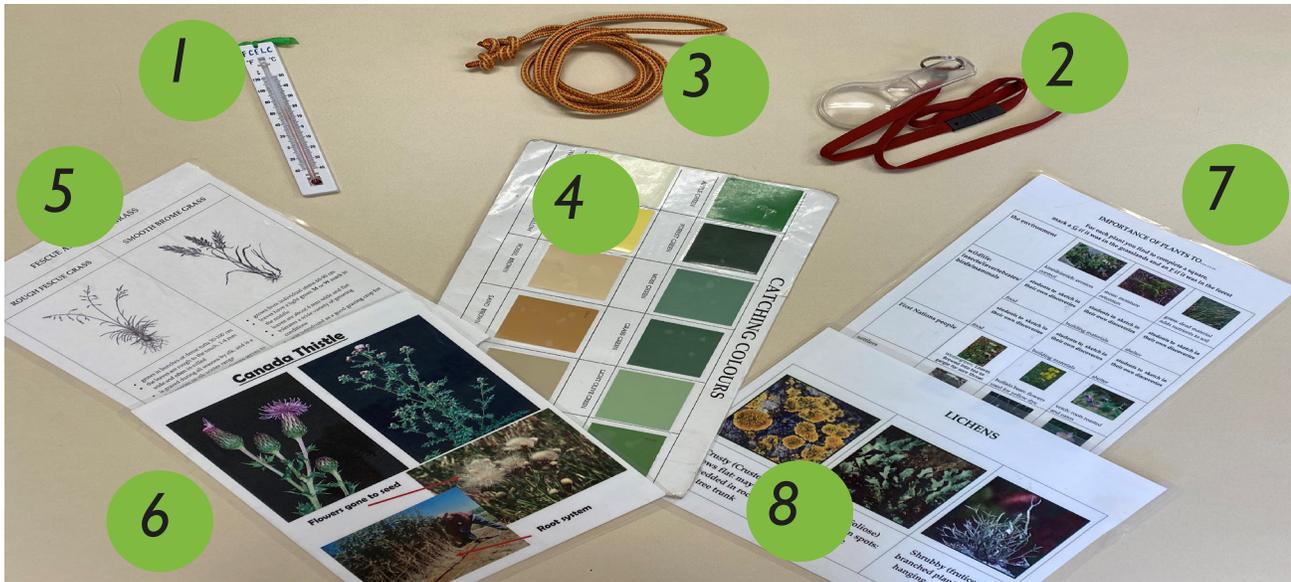
White Spruce Forest Introduction is the same as that used in the Grasslands morning activity to better facilitate post-trip comparison of data from the 2 ecosystems explored.

Rope Ring duplicates the work done in the grasslands, again with the goal of collecting data needed for comparison of different plant communities.

Forest Fun Guy has the students classifying organisms based on energy source. Students will also observe or infer how these organisms are important to the environment.

Fred Fungus Took A “Lichen” To Alice Algae activity students practise classifying organisms that are very similar into separate groups based on physical structure.

Be sure to divide each class into smaller groups and assign an adult volunteer to each group.



PROGRAM EQUIPMENT

The Learning Centre will provide your students with the following equipment and resources to utilize during the field study.

1 Thermometer
Air thermometer for reading temperatures in ecosystem study areas.

2 Magnifying Glass
For exploring details of plant and soil structures.

3 Rope Ring
For mapping activities in Grassland and White Spruce Forest study areas.

4 Catching Colours Card
For colour identification activity in Grasslands.

5 Grasses Card
For assisting with grass identification.

6 Canada Thistle Card
For Alien Invaders activity in Grasslands Study.

7 Importance of Plants Card
For Importance of Plants activity.

All equipment must be returned prior to departure.
PLEASE NOTE: There is an additional fee for broken or missing equipment.

8 Lichens Card
For Fred Fungus Took A “Lichen” To Alice Algae activity.

INFORMATION BOOKLETS

The Learning Centre will provide your adult volunteers with an information booklet to help guide them on the outdoor exploratory activities which they will lead their smaller group of students on.

PLANT COMMUNITIES

Information Book about plant growth and changes as part of the Fish Creek field study for grade 4 students

Leader Information & Instructions

Thank you volunteering in the park today. This field trip is an opportunity for students to explore and discover plants in the park. This resource will assist you in guiding your group of students to learn and discuss growing conditions for plants, plant adaptations and identification of plant species and plant parts.

Key Words

Adaptation: physical characteristic or behaviour which helps a plant or animal live.

Characteristic: a unique or special feature used to describe something.

Classify: to place items in groups according to a common characteristic or set of characteristics.

Community: when a group of living things live together in a given area and meet their needs.

Deciduous: a tree/plant that loses its leaves on a seasonal basis.

Ecology: the interaction between living and non-living things and the environments in which they live.

Ecosystem: a community of organisms interacting with its environment, including non-living factors such as soil and water.

Energy: something everything needs to survive. It comes from the food we eat, Energy starts at the sun.

Nutrient: elements in food, soil and air that help living things grow and stay healthy.

Important Note: Be sure you are back at the Learning Centre for lunch and 15 minutes before your bus leaves.

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The Learning Centre will provide your adult chaperones with an information booklet with all of the field trip activities outlined and explained in full detail. These booklets will have pictures and information that will support and enhance your students' learning.

These booklets will be provided at the Park for your field trip.

By providing laminated copies, at your field trip we hope to reduce the amount of photocopying and wasted paper.

Important Notes:

- We greatly appreciate all feedback to strengthen our resources; please let us know if you have any recommended changes.

After Your Field Study

POST TRIP ACTIVITIES

In addition to a class discussion about trip highlights and favourite activities, students may need class time to complete data sheets or to share information about their discoveries.

Plant Uses

First Nations people lived in the Fish Creek valley for thousands of years. They used many of the plants found in the valley for a variety of purposes.

Have the students select a plant from each of the two ecosystems they visited (grasslands, spruce forest) and research how First Nations people used those plants.

They could also include comparisons with uses by early Europeans and present day. Student notes from the Rope Ring worksheets may help them with this list.

Alien Invaders

The problem of Alien Invaders is a major environmental concern. As the issue of Alien Invaders grows in magnitude, the levels of awareness and commitment to action are also increasing. There is a wealth of information available on the Internet.

Have the students:

- Research the 10 most common weeds in Calgary (try the City of Calgary website and Alberta Invasive Species Council)
- Learn about common yard and garden plants. Are any in their yards invasive aliens? Can they work with their parents to replace them?
- As a class create a list of things students can do to help reduce the spread of alien invaders (e.g. don't pick wild plants, stay on trails, plant only native species in our yards, clean outdoor gear after visiting areas that may be home to invasive aliens, stay clear of weed infested areas when playing).

Plant Communities Presentation

Have each group of students prepare a presentation, about their rope ring in either the grasslands or the white spruce forest.

These presentations should address:

- growing conditions
- plant diversity
- populations
- other discoveries

The props used could include:

- a poster of their rope ring
- detailed pictures of plants they found in their rope ring
- detailed information about the plants that they have researched

Appendix

PLANT COMMUNITIES VOCABULARY

Characteristic: A unique or special feature used to describe something.

Classify: To place items in groups according to common characteristics.

Community: Organisms living together in a certain area that interact and support each other.

Deciduous: A tree/plant that loses its leaves on a seasonal basis.

Ecology: The study of relationships between organisms and their environment.

Ecosystem: A community of organisms interacting with their environment, including non-living elements such as soil and water.

Energy: Strength or power, required by all organisms to survive. Obtained from food, water and the sun.

Environment: The total of all surrounding influences which affect the life and development of organisms, including air, water, soil and weather.

Food: A source of energy. What a consumer gets from eating something; what a producer is able to make itself.

Humus: An organic layer of the soil made up of decaying plant materials.

Organism: Any plant or animal; a living being with organized structure.

Needs: The things an organism requires to survive. Such as, sun, soil water, food, air, space and shelter.

Nutrient: Elements in food, soil and air that help living things grow and stay healthy.

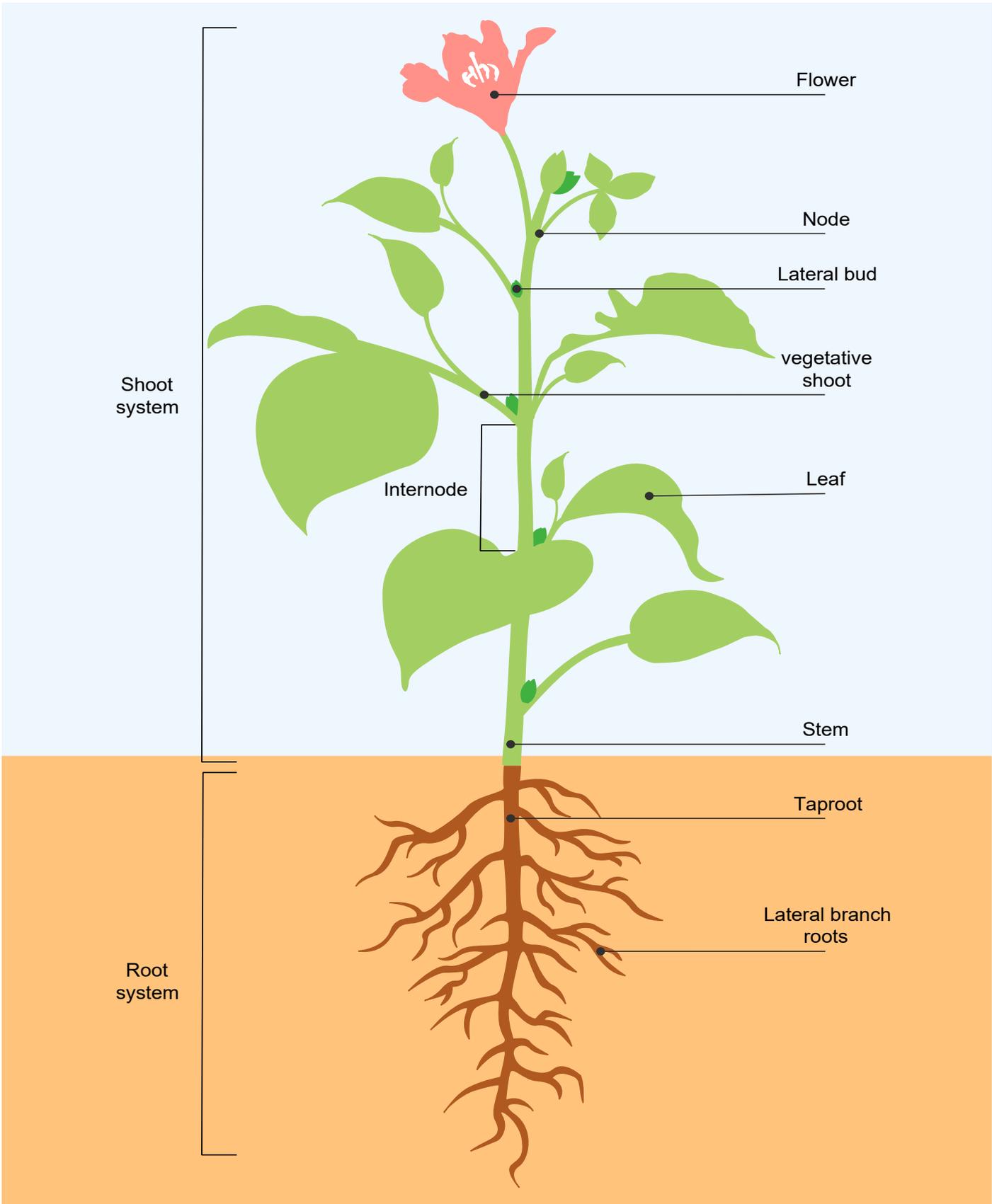
Plant: Any living thing that is able to produce/create its own food.

Pollen: A powder that flowering plants produce to make seeds.

Seed: A self contained package which plants make and disperse to create a new plant.

Space: The area that any living thing needs to survive, it can vary greatly for different plants and animals.

PARTS OF A PLANT



PARTS OF A PLANT

Name: _____

Date: _____

Diagram of Entire Plant

Detail of the Flower

Detail of the Stem

Detail of the Leaf

Top

Bottom

Plant Name: _____

GROWING CONDITIONS

AIR:

Air is a mixture of gases that includes oxygen. Plants produce oxygen and consume carbon dioxide. People do the opposite. An environmental factor related to air is wind. An area with high winds would contain plants that had small leaves, deep root systems, strong flexible trunks and branches along with small canopies.

LIGHT ENERGY:

The amount of direct sunlight a plant receives influences how it grows. Plants growing in direct sun might have small leaves with a thick cuticle and deep root systems to reach water. Plants in low light may have large leaves to collect more sunlight.

HEAT ENERGY:

Heat tolerance influences where and how a plant grows and is a factor in overwintering.

SLOPE:

Slope refers to the angle of a hillside. Generally a hillside that is steeper requires a plant to have stronger root systems. Plants at the top of the slope may have a tolerance for low water levels,

ASPECT (DIRECTION):

Aspect refers to the direction a slope faces. A slope that faces north will be cooler and maintain moisture better. A slope facing south will be sunnier and drier.

WATER:

Water moves from an area of high concentration to an area of low concentration for the most part. Slope, elevation, aspect and the presence of other plants all influence how much water is available for plants to grow.

HUMIDITY:

Humidity refers to the amount of water in the air. An area with open sunshine, high winds will have low humidity. On the other hand, in a thick canopy forest transpiration off of plants will increase the humidity because the canopy slows down evaporation and wind. These growing conditions will result in different plants living there.

SPACE:

Environmental factors are always interacting and this interaction can create areas of dense growth and areas of sparse growth. Plants that require lots of space to meet their growing needs will not locate near other plants.

NUTRIENTS:

The nourishing substances, such as minerals, that a plant requires to grow. The presence and abundance of these substances influences the growing conditions. For example, a forested area that has lots of decaying leaf matter on the forest floor will have more nutrients in the soil than an area that has few plants growing in a soil that has lots of clay and sand in it.

GROWING CONDITIONS

NAME: _____ DATE: _____

Describe the conditions that exist.

AIR: _____

LIGHT ENERGY: _____

HEAT ENERGY: _____

SLOPE: _____

ASPECT (DIRECTION): _____

WATER: _____

HUMIDITY: _____

SPACE: _____

NUTRIENTS: _____

DESCRIBE THE ENVIRONMENT
THESE CONDITIONS CREATE.

DIAGRAM THE
ENVIRONMENT

GRASSLANDS STUDY

Grasslands Introduction

Student groups will move to a grasslands area for this portion of the field study. Working in groups they will make observations and recordings in their student journals. Students will measure and record growing conditions that determine which plants are able to survive in the grasslands ecosystem. Students will describe common plants (grasses) and classify them on the basis of their characteristics.

Students will complete the “Growing Conditions” section of the data sheet.

Students will select a grass-like plant and decide if it is a grass based on the physical characteristics listed on their worksheet. Students will do a detailed sketch of the plant.

Students will examine the “Fescue and Brome Grass” hand out provided. Does their grass fit the description of one of the described grasses?

Rope Ring

Students will map the variety and abundance of plants found within the grasslands. Have groups select an area and lay out their rope ring.

Have the students select one plant growing within the rope ring and draw the plant in the “Legend” box. Select a symbol to represent that plant and put the symbol in the box next to the plant drawing. (e.g., √, letters, numbers) Next place that symbol within the rope ring diagram on their worksheet everywhere they see the plant growing within their rope ring on the ground. Repeat this for each plant species growing within their rope ring until the students have mapped every plant.

Remind students to look closely as many grasses may look very similar, or they may miss plants hidden under other plants.

Catching the Colours

This is a fast, fun-filled activity that involves classifying by colour. How many different shades and colours of leaves can the students discover and record ?

Students will select a part of the grasslands study area with a variety of plant species. Students then find a plant, compare the leaf colour to the samples on the “Catching Colours Card”. Once they agree on the colour match, they put a check mark in the appropriate box on their CATCHING THE COLOURS worksheet. They then repeat the procedure as many times as possible within the time allowed.

Allow about 10 minutes total for the activity.

How many leaves did the students colour match? Were they able to find most of the colours or were all the leaves very close shades? Students can draw some of the leaves in the boxes on their worksheets, paying particular attention to fine details such as margins and veins.



Alien Invaders

Alien invaders are plants growing in an ecosystem that is not their native one. These plants are labelled invasive because they are able to grow and spread very quickly, taking over an area in a short period of time.

Students examine the picture of the Canada Thistle and then search out a stand of these alien invaders,

While the group is watching have one of the students take 2 steps and have the group note the length of the 2 strides. The group will “eye-ball” a square around the selected patch of Canada Thistle using that measurement.

Students count the number of different plant species they can observe from the edge of the patch among the Canada Thistle.

The students also count the total number of each plant growing within their imaginary square.

Students complete a “Rope Ring” exercise for the Canada Thistle plot similar to the ones completed for Grasslands and White Spruce Forest for comparisons.



WHITE SPRUCE FOREST STUDY

White Spruce Forest Introduction

Student groups will move to a White Spruce forest area for this portion of the field study. Working in groups they will make observations and recordings in their student journals. Students will measure and record growing conditions that determine what plants are able to survive in the forest ecosystem.

Students will complete the “Growing Conditions” section of the data sheet.

Students will select what they believe is the most abundant plant in the area, describe it and do a detailed sketch of it.

Rope Ring

Students will map the variety and abundance of plants found within the forest. Have groups select an area and lay out their rope ring.

Have the students select one plant growing within the rope ring and draw the plant in the “Legend” box. Select a symbol to represent that plant and put the symbol in the box next to the plant drawing. (e.g. √, letters, numbers) Next place that symbol within the rope ring diagram on their worksheet everywhere they see the plant growing within their rope ring on the ground. Repeat this for each plant species growing within their rope ring until the students have mapped every plant.

Remind students to look closely as some plants may look very similar, or they may miss plants hidden under other plants.

Forest “Fun Guy”

Students will discover that organisms can be classified using characteristics other than physical structure. One method is to group them according to their food (energy) source. Animals are often grouped this way - herbivores (plant-eaters), carnivores (meat-eaters) and omnivores (eat both plants and animals). Fungi can also be grouped by energy source.

In the forest study area have students search for mushrooms (fungus). Once one is discovered move your group to that location.

Have students examine the mushroom(s) - don't pick it though. Students complete the Forest Fun Guy data sheet in the student journal.

Encourage the students to be as detailed as possible in their descriptions. Search out more mushrooms once the group is finished with their observations and recordings.



Fred Fungus took a Lichen to Alice Algae

Students will practise observing small details of physical structure that enable the classification of very similar organisms into different groups.

In the forest study area students will search for lichens to examine. The “Lichens” card will help with identification. Once a lichen is found the group will move to that spot to closely examine the lichen(s).

Students will work as a group to complete as thoroughly as possible the FRED FUNGUSTOOK A LICHEN TO ALICE ALGAE data sheet in the student journal.

Students are encouraged to be as detailed as possible in their observations and recordings. Search out more lichens once the group is finished with their observations and recordings.



PLANT COMMUNITIES

A Field Study for Grade 4 Students

STUDENT JOURNAL

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Name: _____

Date: _____

IMPORTANCE OF PLANTS TO.....



For each plant you find to complete a square, mark a G if it was in the grasslands
and an F if it was in the forest

the environment	kinnikinnick: erosion control	moss: moisture retention	grass: dead material adds nutrients to soil
wildlife: insects/invertebrates/ birds/mammals	food	building materials	shelter
	food	building materials	shelter
First Nations people	prairie smoke: tonic for swollen eyes	buffalo bean: flowers used for yellow dye	vetch: roots roasted and eaten
settlers	yarrow: medicine for indigestion	horsetails: used to scrub pans	wild rose: jelly, tea, salads

Publication only for use in conjunction with a scheduled Fish Creek program - not for public distribution.

GRASSLANDS INTRODUCTION

Growing Conditions:

Air temperature: _____ ° C

Amount of sunlight: Full _____ Partial _____ Shaded _____

Amount of Wind: Calm _____ Slight Breeze _____ Windy _____

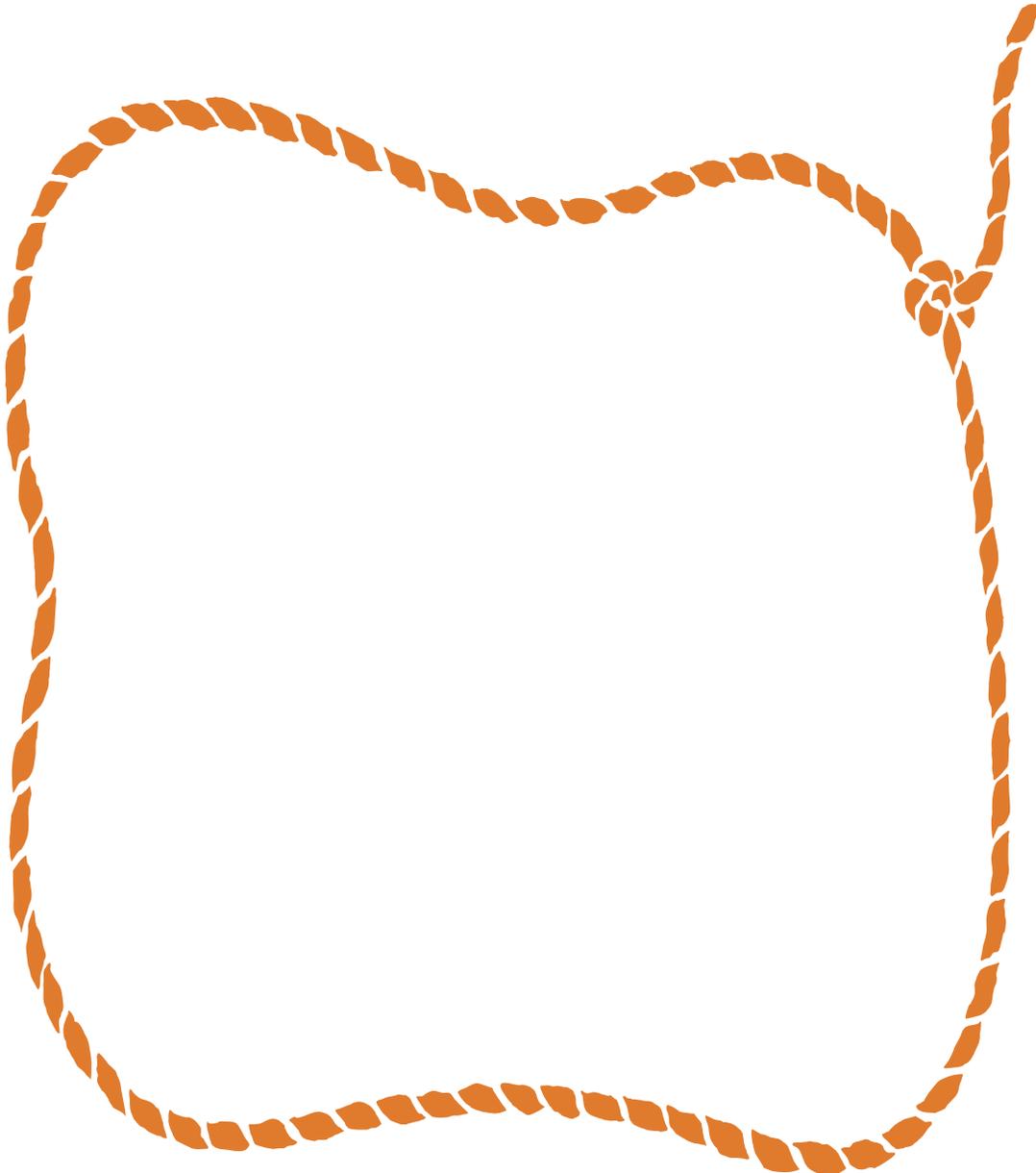
Soil: dry _____ slightly moist _____ moist _____

Soil texture: Hard Pack _____ Gritty/Sandy _____ Fine _____

GRASSES
Stem: hollow cylinder like a straw, jointed like your fingers Collar: band where leaf blade joins stem is distinct Leaves: arranged in 2 vertical rows

Detailed drawing of an entire plant: leaves (blades), veins and stem

GRASSLANDS ROPE RING



Legend:

plant drawing	symbol

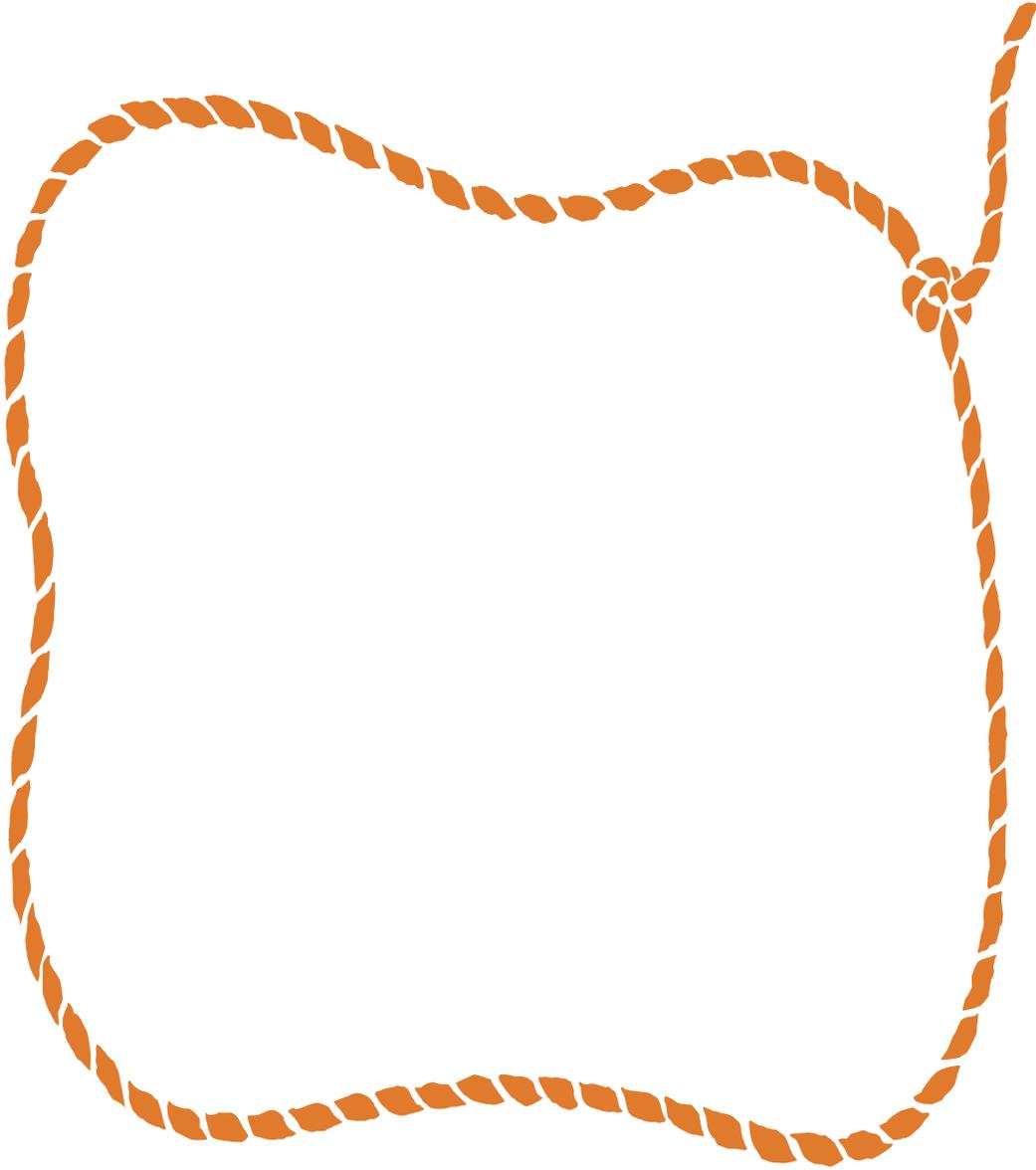
CATCHING THE COLOURS

	apple green		wheat yellow
	forest green		marigold yellow
	moss green		fossil brown
	grass green		sand brown
	light olive green		gopher brown
	dark olive green		sparrow brown

Alien Invaders – Canada Thistle

Legend:

plant drawing	symbol	# observed



Total number of different plant species _____

WHITE SPRUCE FOREST INTRODUCTION

Growing Conditions:

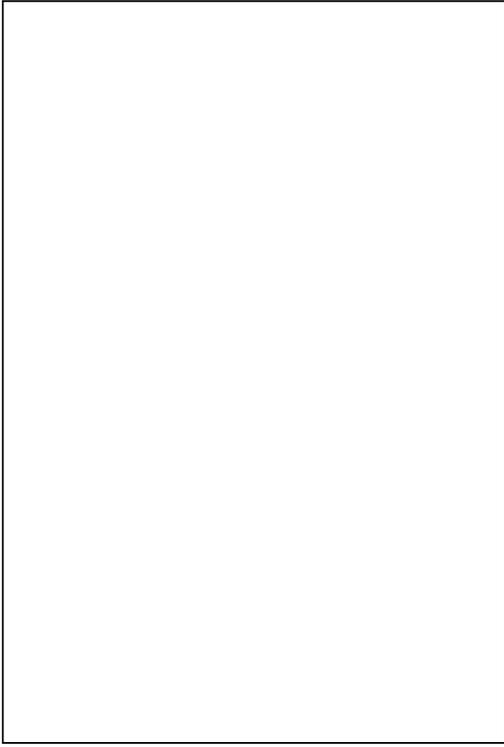
Air temperature: _____ °C

Amount of sunlight: Full ___ Partial ___ Shaded ___ Amount of Wind: Calm ___ Slight Breeze ___ Windy ___

Soil: dry ___ slightly moist ___ moist ___ Soil type: Hard Packed ___ Sandy/Gritty ___ Fine ___

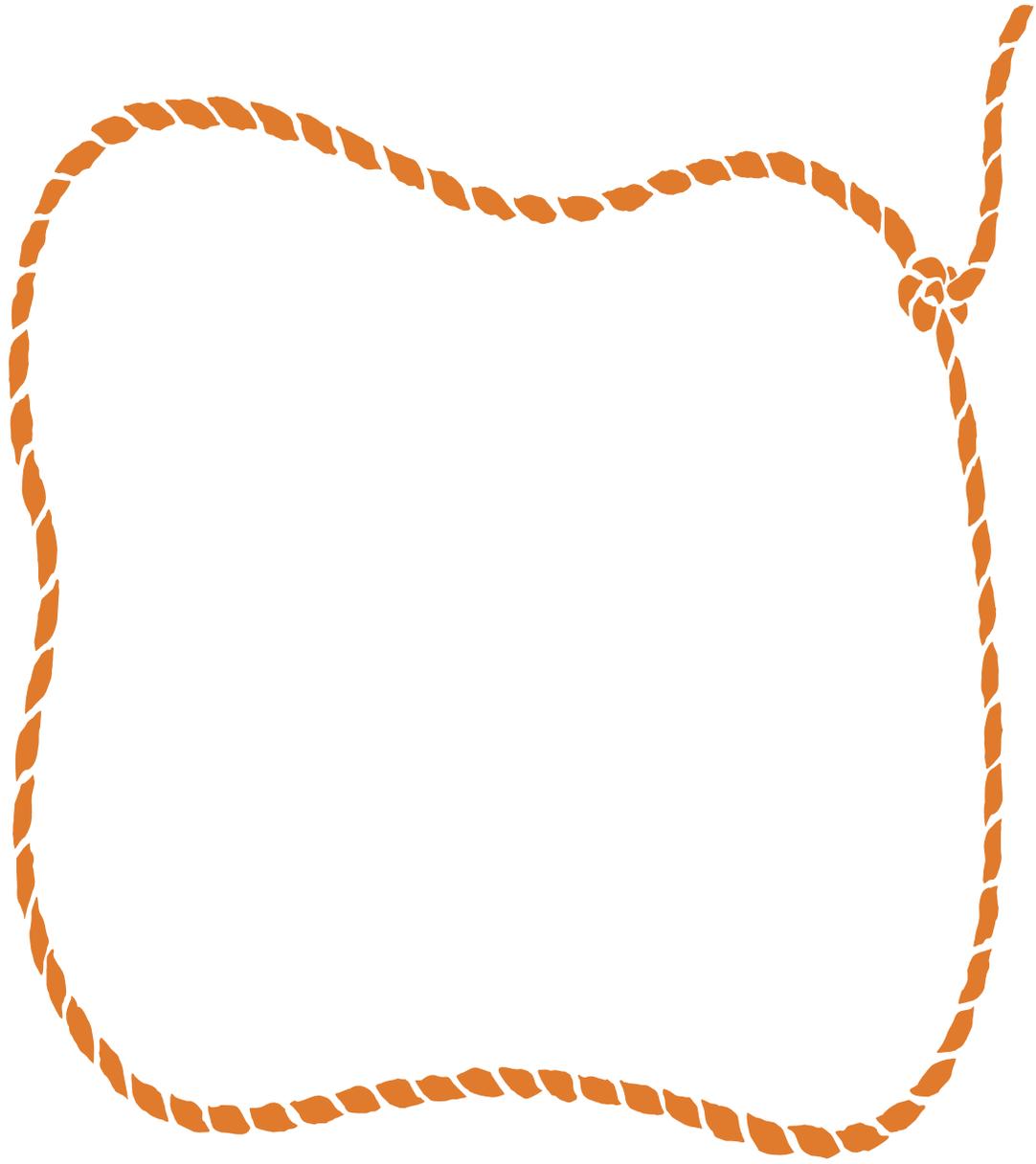
Common plant:

Drawing:



Description:

WHITE SPRUCE FOREST ROPE RING



Legend:

plant drawing	symbol

FRED FUNGUS TOOK A “LICHEN” TO ALICE ALGAE

Lichen: composed of 2 plants: an algae and a fungus living together for mutual benefit.

The fungus provides physical structure and water: the algae, using photosynthesis, produces food.

CRUSTY (CRUSTOSE)	LEAF-LIKE (FOLIOSE)	SHRUBBY (FRUTIOSE)
<p>grows flat may be embedded in tree or rock</p> <p>colour</p> <p>number</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 10px auto;"></div>	<p>attached only in spots; edges loose</p> <p>colour</p> <p>number</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 10px auto;"></div>	<p>branched plant; can be hanging or upright</p> <p>colour</p> <p>number</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 10px auto;"></div>
<p>where found</p> <p>1 observation</p>	<p>where found</p> <p>1 observation</p>	<p>where found</p> <p>1 observation</p>

Dear Adult Volunteer,

Thank you for volunteering for a field trip to Fish Creek Provincial Park! This excursion allows students to explore, discover and learn in one of the largest urban parks in North America.

Here are a few tips that may help you enjoy your visit:

- Pack a hearty and healthy lunch (snacks and water too!). There are no vending machines or stores on-site to purchase food
- Please dress appropriately for the weather. We will run our programs rain, snow or sunshine
- Ensure that you are aware of what part of Fish Creek the program is taking place. We host educational programs at the WEST end (near Woodbine) and the EAST end (near Deer Run)

Our staff will be available throughout the day to ensure that you and your group have a safe and educational experience in the park.

You are not expected to be a naturalist or history expert, but a positive attitude goes a long way!

Thank you again, we are very excited to see you in the park soon.

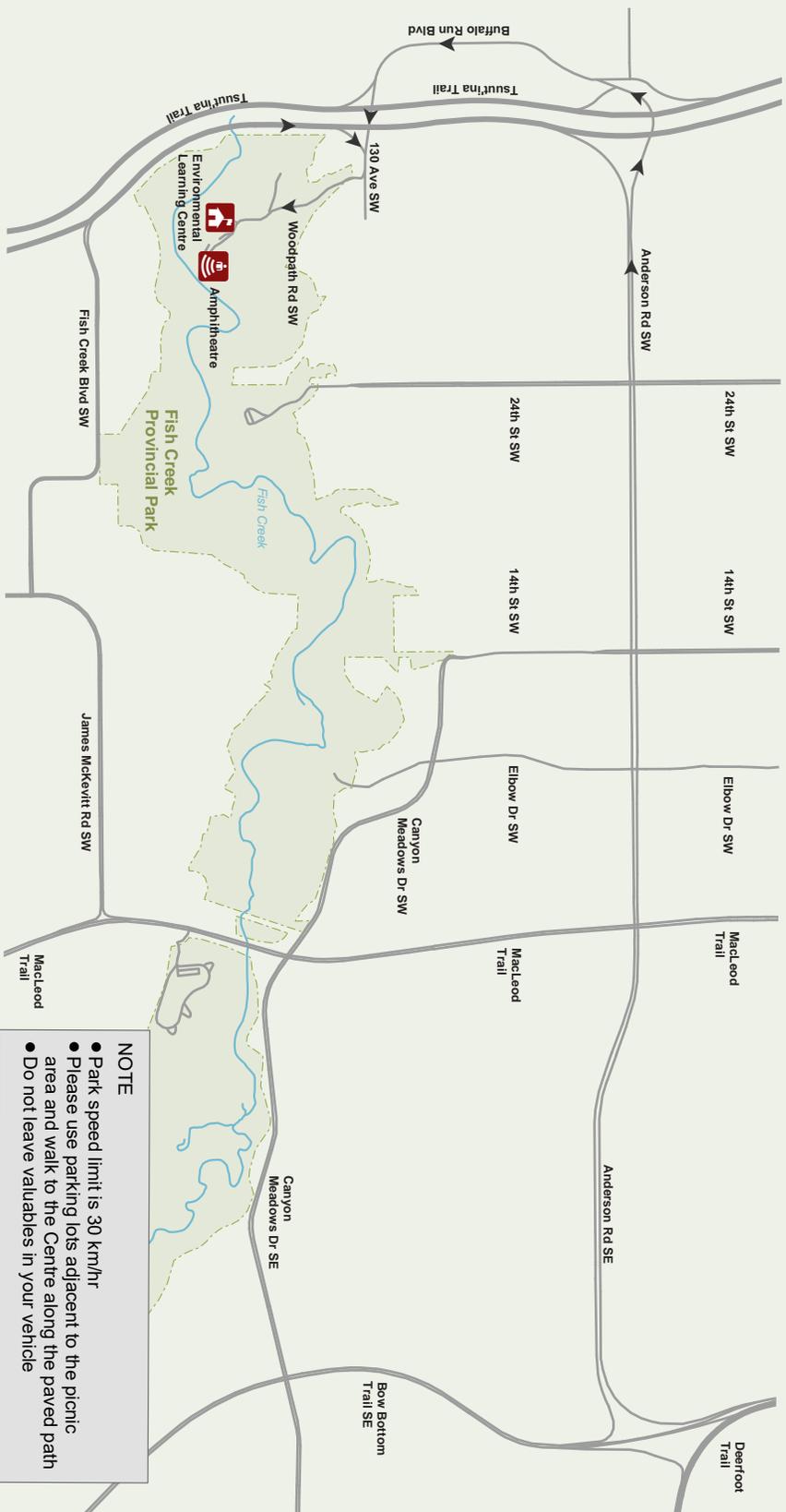
Warmest regards,

Environmental Education Team



Access Map - Fish Creek Environmental Learning Centre

13931 Woodpath Road SW, Calgary, Alberta



DIRECTIONS

From Anderson Rd SW heading west:

- Follow signs to Tsuut'ina Trail and follow exit onto Buffalo Run Blvd
- Follow Buffalo Run Blvd past the gas bar and Costco complex to 130 Ave SW
- Heading east through two traffic circles to continue onto 130 Ave SW
- Turn right onto Woodpath Rd SW and follow road straight into the park

From south of 130 Ave SW on northbound Tsuut'ina Trail:

- Take the 130 Ave SW exit and keep right at top of ramp onto eastbound 130 Ave SW
- Turn right on Woodpath Rd SW and follow road straight into the park

NOTE

- Park speed limit is 30 km/hr
- Please use parking lots adjacent to the picnic area and walk to the Centre along the paved path
- Do not leave valuables in your vehicle

