# INSECT INTRIGUE

A teacher-conducted field study for
Grade 2 students


FISH CREEK
ENVIRONMENTAL LEARNING CENTRE

FishCreek.Education@gov.ab.ca

www.Fish-Creek.org

CONNECTING PEOPLE WITH PARKS
FISH CREEK
ENVIRONMENTAL
LEARNING CENTRE

Alberta Parks

# Introduction

This is a curriculum-connected, full day field study with multidisciplinary preparatory and post-visit activity support. The intent is to offer a natural world experience for students that reflects the outdoor field study components of Topic E: *Small Crawling and Flying Animals* from the Grade 2 Alberta Elementary Science Curriculum 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.

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# Facility & Rules

## *THE FACILITY*

The Fish Creek Environmental Learning Centre, located at the west end of the Park off of 37 Street SW, offers five indoor classrooms, an outdoor picnic area and access to an extensive variety of natural ecosystems: an old spruce forest, grasslands, riverine, creek, pond wetlands and disturbed (urban) areas.

The Fish Creek Environmental Learning Centre offers you the following facilities and services:

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 lost or broken equipment.**

3. Washrooms and water fountains are located in the building. There are no vending machines or coffee 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. Parent volunteers will have a separate orientation (about 10 minutes). 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 will answer any questions that they may have.

6. A washroom and snack break will take place *after* the group orientation and during the parent volunteer orientation. Please ensure that the students are supervised during this time.

7. **There are NO indoor activities available. Please bring your own activities and/or DVDs when planning for inclement weather.**

# *LUNCH BREAK PROCEDURES*

*Your class may eat inside the facility, within their assigned room. Please ensure that the students understand the following :*

## INSIDE THE BUILDING

- Students must be supervised by an adult while they are in the building (classrooms and washrooms).
- Classes from other schools may be in the facility at the same time. Please respect them and keep noise to a minimum, especially in the washrooms, hallways and other common areas.
- Help us keep the classrooms clean. There are garbage containers in the brown cabinets by the classroom doors.
- Recyclable containers go into the brown cabinet labelled "Juice boxes, cans and bottles". Do the students know what recycling is, how it conserves resources and how it helps the environment?
- 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 is a picnic area just to the north of the Fish Creek Environmental Learning Centre, about two minutes walk up the trail, with plenty of picnic tables.

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.

*When using the fire pit area be sure to:*

- Provide your own roasting sticks and firewood. **Do not use branches or deadfall from the park.**
- Have a bucket of water nearby **before** the fire is lit. Check that the fire is out before you leave.
- **Do not feed or disturb wildlife.**

# Preparation Materials

## 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 at the back of this resource package. These are general guidelines to assist you in planning your field trip.

## 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, equipment and trail safety for parent volunteers. |
| **Educational Activities** | Students explore the park in small, parent-led groups. Environmental Educator will be available to answer questions and provide support during your lunch break and at the end of the day and is always available should the need arise at the Learning Centre. |
| **LUNCH BREAK** | Environmental Educator will circulate and answer questions, show nature biofacts and ensure that the program is going smoothly. |
| **Educational Activities** | Students continue to complete curriculum-connected activities with their parent leaders. |
| **Groups return to Learning Centre for Program Wrap-up** | Final washroom break, head count, inventory and return equipment borrowed from the park, 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(ses).
- ❑ 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 rubbish bins 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 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, information booklets will be provided to volunteers on the day of the trip to assist them in leading groups.
- ❑ Emphasize the following: there is nowhere to buy anything in the park, 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 the lunch period.

## *FISH CREEK PROVINCIAL PARK: Key Messages*

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

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- 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.

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# Pre-field Trip Activities

**Preparatory activities are essential to the success of your trip!** The preparatory activities described here will introduce the field study day to your students and will allow them to practise the skills to be used during the field study day.

Feel free to use your own activities and the ones described in this package. Within the activities you select and present to your students be sure to consider other curriculum areas and explore how all subject areas can be connected to your field study day.

## 1 Vocabulary *Worksheet: No*

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

- Words could be incorporated into the weekly spelling quiz
- Ask the students to each draw a picture as you describe an imaginary animal and special things about it. Use as many of the vocabulary terms as possible. Ensure that each student has demonstrated an awareness of the correct meaning of each vocabulary term. Review with the students any terms that are still creating difficulties for them.

## 2 Basic Needs *Worksheet: No*

Conduct a class discussion about basic needs. What do humans need to survive? Are the students clear about the difference between needs and wants? Humans need food, water, shelter, space and air. We may want a car or computer but we do not need them to survive. Do the students' pets need the same things? What do house and garden plants need to survive? Do wild plants and animals also need the same things?

Pick an animal many of your students are familiar with (e.g. sparrow, squirrel, rabbit) and discuss with your class how this animal meets each of its basic needs.

## 3 Pre-Visit Quiz *Worksheet: Yes*

Give the students a short quiz before and after the field study to enable you to accurately assess the learning achieved on this field study. Use the following sample quiz or develop one of your own.

## 4 Food Chains

Explain food chains to the class. Review the role of the sun for energy, plants that make their own food, animals that eat plants, animals that eat plant eaters etc.

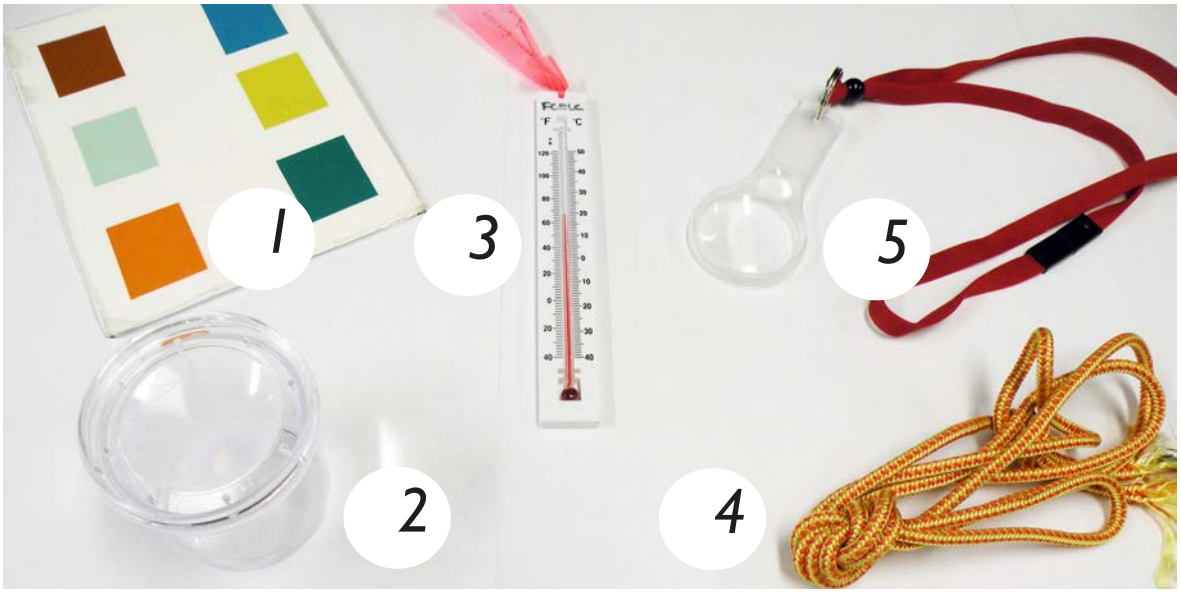
- Show the class this image of a food chain:
- Ask the students to select a favourite food and then draw an energy chain for it.

## 5 Classification *Worksheet: No*

Discuss how animals are the same or different and how they can be put into groups based on physical characteristics. Start by putting all animals into one of two groups: vertebrates and invertebrates. Then show the students how invertebrates could be broken down into smaller groups. If possible, have pictures of one example from each group. A simple classification might be:

- Insects - 3 distinct body parts (head, thorax, abdomen), 3 pairs of legs, one pair of antennae and an external skeleton called an exoskeleton.
- Spiders -2 distinct body parts (head, abdomen) and 4 pairs of legs.
- Centipedes -at least 15 pairs of legs, one pair per segment of body. Common in decaying wood and leaf litter.
- Millipedes -2 pairs of legs per body segment, totalling at least 30 pairs. Common under rocks, logs, bark.

All of these animals are invertebrates; they lack a backbone. Fish, amphibians, reptiles, birds and mammals are vertebrates.




# Program Equipment

The Learning Centre will provide your students with equipment and resources to utilize throughout the day.

***PLEASE NOTE:*** There is an additional fee for lost, stolen or broken equipment.

For the *Grade 2 Insect Intrigue* program, your students will be provided with the following:

## 1 Colour Cards

Students will use the colour cards to look for similar shades in natural objects.

## 2 Magnifying Boxes and Bug Catchers

With the assistance of parent leaders, students will capture invertebrates throughout the day in the larger bug catchers.

Students will use the magnifying equipment to closely examine physical and behavioural adaptations of the invertebrates.

## 3 Thermometer

Students will measure the temperature of shaded and sunny areas. Students will compare and contrast the temperature changes throughout the day and at different locations.

Students will record temperature readings in their journals.

## 4 Magnifying Glasses

Students will use the magnifying glasses to examine their captured invertebrates.

Students will use the magnifying glasses to investigate bark beetle tunnels and ant nests.

## 5 Rope Lasso

Parent leaders will create a large "rope lasso" on the ground. The students will then find, examine and describe the small crawling creatures found inside the small lasso area.

# Field Trip Activities

## *Information Booklets*

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

# Field Trip Activity Summary

*The following Field Trip Activities are curriculum-connected. You are certainly welcome to change, remove or follow the activities to suit the needs of your students.*

## 1 Colours *Worksheet: Yes*

- Students will use colour cards to observe and record the environment around them.

## 2 Temperature *Worksheet: Yes*

- Students will predict animal behaviour based on temperature and compare temperatures of visited sites.
- Students will also measure the temperature and record it on various pages of the student journal throughout the day.

## 3 Creature Count *Worksheet: Yes*

- Students will identify, compare & contrast and classify (plant-eaters, animal-eaters, decomposers), small invertebrates.
- Students will also identify the habitat that they find the invertebrate in (grassy area, forest, water).

## 4 Ladybugs *Worksheet: Yes*

- Students will determine the order of a ladybug's lifecycle. They will also observe & draw a ladybug that they find.

## 5 Spiders *Worksheet: Yes*

- Students will observe & draw a spider or web that they find. They will also describe: the spider's appearance, how the spider meets its basic needs, avoids predators, what it eats, etc.

## 6 Creature Lasso *Worksheet: Yes*

- Students will find, examine, describe and draw small creatures in a grassland habitat.

## 7 Grasshopper Gaze *Worksheet: Yes*

- Students will collect and observe the details of a grasshopper. They will determine how grasshoppers avoid predation.
- Students will describe a food chain that involves a grasshopper.

## 8 Under *Worksheet: Yes*

- Students will find and examine creatures that make their home under 'things' (logs, stones, leaves, etc.).
- Students will draw the things they find, discussing physical appearance and behaviour of the creatures found.

## 9 Cities in the Soil *Worksheet: Yes*

- Students will examine an anthill and draw their discoveries.
- Parent leaders will demonstrate a scent/ chemical trail using a pencil rubbed with perspiration – reinforcing the concept of ants following an odour trail to find food.

## 10 Cities in the Trees *Worksheet: Yes*

- Students will investigate and draw the creatures that use trees for shelter., such as carpenter ants.

## 11 Bark Beetle Tunnels *Worksheet: Yes*

- Students will examine the patterns in wood created by bark beetle larvae.
- Students will recognize texture and patterns in nature – bark beetle chambers.
- Students will create a rubbing of a tree with bark beetle chambers and tunnels.

# Post-field 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.*

## Creature Count *Worksheet: No*

Review the results of the Creature Count. Were there any creatures that no one found? Where do the students think those ones live? Why do they think none were seen?

Have the students complete a bar graph or pictograph of the results from their Creature Count. Possible methods include:

- each student uses only his/her data

or

- compile the data for the entire class and then each student completes a graph
- graph the approximate number of each creature

or

- graph the number of creature species found in each of the 3 ecosystems.

## Creature Comparison *Worksheet: No*

Select two invertebrates that most students found. Have the class compare and contrast these two invertebrates: where they live, how they move, how they meet their basic needs, how they escape predators, etc.

## Post-Visit Quiz *Worksheet: Yes*

Re-administer the preparatory test as a post-visit test and compare the results to assess the learning achieved on the field study.

## Temperature *Worksheet: No*

Collate each group's temperature data.

Discuss:

- Predictions: how accurate were the groups?
- Were they correct in predicting which would be the warmer places?
- Were there significant differences in temperatures measured at waist level and ground level? (This will depend in part on the previous overnight low)
- Was there a correlation between the level of insect activity and the measured temperatures?
- Do the students know why invertebrates are less active when the temperature is low?
- Where were most invertebrates found when the temperature was low?
- Can the students figure out that hiding is a method of defense when the invertebrates are unable to move fast to escape predators?

## Important Invertebrates *Worksheet: No*

Through class discussion compile a list of the many different ways invertebrates affect the environment and people. Some possible answers are:

- pollinate plants (including crops that are important food sources for people)
- food source for many other animals
- as scavengers they "clean-up" the environment
- provide honey and silk for people
- are enjoyable to hear and watch
- can carry germs and diseases
- destroy crops and other plants
- cause discomfort due to bites

Insects have a vital role in the environment. Human efforts to eradicate them can have far-reaching effects. Review the concepts of food chains and introduce food pyramids. A picture of each invertebrate will assist the students' comprehension of each idea.

Dear Adult Chaperone,

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 science 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

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## Insect Intrigue Vocabulary

*Ensure that your students are familiar with the meaning of the following terms.*

adaptation - physical characteristic or behaviour, which helps a plant or animal live, successfully where it does.

camouflage - body colour or markings that help an animal hide from its predators (enemies).

decomposer - any plant or animal that gets its energy by feeding on and breaking down dead plants or animals into smaller pieces that will become part of the soil.

habitat - place where a plant or animal naturally grows and lives.

interaction - relationship between two or more plants or animals and the effects they have on each other.

invertebrate - any animal that does not have a spinal column (backbone).

physical characteristic - a quality or feature (thing) on a body.

predator - animal that hunts other animals for food.

## Imaginary Animal Description

Ask the students to each draw a picture as you describe an imaginary animal and special things about it. Use as many of the vocabulary terms as possible. You may use the following example or you may wish to create your own.

This animal is an **invertebrate**. Its **physical characteristics** include a soft body with no covering, antenna and many legs.

Its **habitat** is the forest floor and its colouring acts as **camouflage**.

Draw an **interaction** between our animal and a small plant.

Our animal is a **decomposer** that cannot live in the snow. Please add to your picture something the animal would eat and the behaviour **adaptation** it may use to avoid winter cold.

Its **predators** are birds. Please add those to your picture.

# *Insect Intrigue Quiz*

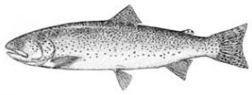
_____ _____

Name Date

1. Circle the animals pictured below that are INVERTEBRATES (animals without backbones).

**a.**

**e.**



2. On the line beside each word print the letter of the description that best explains that word.

_____ adaptation — a. plant or animal that feeds on and breaks down dead plants or animals.

_____ decomposer — b. animal that hunts other animals for food.

_____ habitat — c. physical characteristic or behaviour that helps a plant or animal live where it does.

_____ invertebrate — d. place where a plant or animal lives.

_____ predator — e. any animal that does not have a spinal column (backbone).

3. Circle the pictures that show the basic needs of all living things.

**a. car**

**b. food**

**c. water**

**d. computer**

**e. shelter**

**f. space**

**g. air**

4. Name an invertebrate that is a plant eater and its habitat.

_____ _____

5. Name an invertebrate that is an animal eater and its habitat.

_____ _____

6. Name an invertebrate that is a decomposer and its habitat.

_____ _____

7. Draw a line from the invertebrate to the special physical characteristic it has to help it survive in its habitat.

a. grasshopper 

b. spider 

c. ant 

1. many eyes

2. strong sense of smell

3. toe pads to help it climb

8. Draw a grasslands food chain that includes the grasshopper. Start with the sun and end with a decomposer.

_____ ➡ _____ ➡ _____ ➡ _____ ➡ _____

9. Listed below are ways invertebrates avoid predators. Name the invertebrate each describes by using the following letters:

**G = Grasshopper** **A = Ant** **L = Lady Beetle**

Some of the defense methods describe more than 1 invertebrate.

_____ sudden, bright flash of colour _____ tastes bad _____ camouflage

_____ plays dead _____ hides _____ moves fast

_____ stays very still _____ long, high jumps _____ hard shell

10. Ants use non-living material to meet their basic need for _____

11. Grasshoppers and spiders meet their basic need for food by eating which:

living or non-living things? _____

1. Circle the animals pictured below that are INVERTEBRATES. ***a, c, d, f***

2. On the line beside each word print the letter of the description that best explains that word.

| | | |
|---|---|---|
| __c___ | adaptation | a. plant or animal that feeds on and breaks down dead plants or animals. |
| __a___ | decomposer | b. animal that hunts other animals for food. |
| __d___ | habitat | c. physical characteristic or behaviour that helps a plant or animal live where it does. |
| __e___ | invertebrate | d. place where a plant or animal lives. |
| __b___ | predator | e. any animal that does not have a spinal column (backbone). |

3. Circle the pictures that show the basic needs of all living things. ***b, c, e, f, g***

4. Name an invertebrate that is a plant eater and its habitat. ***refer to Creature Count Chart for possible answers***
5. Name an invertebrate that is an animal eater and its habitat. ***refer to Creature Count Chart for possible answers***
6. Name an invertebrate that is a decomposer and its habitat. ***refer to Creature Count Chart for possible answers***
7. Draw a line from the invertebrate to the special physical characteristic it has to help it survive in its habitat.

a. grasshopper
b. spider
c. ant

1. many eyes
2. strong sense of smell
3. toe pads to help it climb

8. Draw a grasslands food chain that includes the grasshopper. Start with the sun and end with a decomposer.

_____ _____ _____ _____ _____

9. Listed below are ways invertebrates avoid predators. Name the invertebrate each describes by using the following letters:

**G = Grasshopper** **A = Ant** **L = Lady Beetle**

Some of the defense methods describe more than 1 invertebrate.

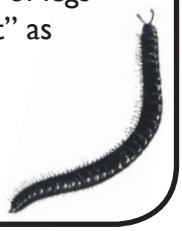
| | | |
|---|---|---|
| __G__ sudden, bright flash of colour | __AL_ tastes bad | __G__ camouflage |
| __L__ plays dead | _GAL_ hides | _GAL_ moves fast |
| _GL__ stays very still | __G__ long, high jumps | __L__ hard shell |

10. Ants use non-living material to meet their basic need for _***shelter***_.
11. Grasshoppers and spiders meet their basic need for food by eating which: living or non-living things? __***living things***__.

## *Insect Intrigue: Commonly Confused Creatures*

As your group is exploring, the students may discover a creature that provoke group debate as to the creature's identity. Some invertebrates look very similar. Have the students place the creature in the large bugkeeper and take a close look at it. If the creature is listed on the following chart, have the students look for the listed characteristics to determine the creature's identity.

| Butterflies | Moths |
|---|---|
| · club or hooked antennae<br>· wings folded above the back when resting<br>· active during the day<br>· soft, smooth landings on objects<br>· taste with mouth and with their feet!  | · thin, feathery antennae<br>· wings beside the body when resting<br>· usually active at night<br>· less controlled landings on or into objects  |

| Centipedes | Millipedes |
|---|---|
| · rusty orange colour<br>· each body segment has 1 pair of legs<br>· does not really have "100 feet" as name suggests<br>· legs are set off to the sides<br>· antennae have 14 segments<br>· fast moving predator  | · dark brown colour<br>· each body segment has 2 pairs of legs<br>· does not really have "1000 feet" as name suggests<br>· legs are underneath the body<br>· antennae have 7 segments<br>· slow moving plant eater  |

| Dragonflies | Damselflies |
|---|---|
| · eyes almost cover the head<br>· at rest, wings are held flat and to the sides horizontally<br>· back wings broader than front wings<br>· thick body<br>· can flap all 4 wings independent of each other: can hover like a helicopter  | · eyes bulge out the sides<br>· at rest, wings are held upwards and pointing to the rear<br>· both sets of wings are the same<br>· thin body<br>· can flap all 4 wings independent of each other: can hover like a helicopter  |

| Craneflies | Mosquitoes |
|---|---|
| · do not have a long proboscis: cannot bite<br>· 8 - 65 mm long  | · long, sharp proboscis: bites<br>· usually less than 6 mm long  |

# *Insect Intrigue: Common Aquatic Invertebrates*

Aquatic creatures you may find in the temporary wetland under the orange trail boardwalk

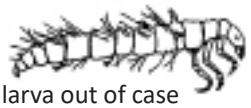
## Fairy Shrimp

- use legs to swim, breathe and feed
- eat algae, bacteria & microscopic animals
- eaten by small fish & carnivorous insects
- short-lived, complete their life cycle in only a few weeks
- females produce two types of eggs: thin-shelled eggs that hatch immediately, and thick- shelled "resting" eggs called cysts.
- cysts lie dormant in dried mud and can survive for over 10 years until the next rainstorm fills the wetland.

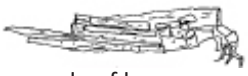
actual size: 10 - 17 mm

## Caddisfly Larva

- build and live in cases covered with small sticks or stones; head and legs stick out, making them look like moving sticks;
- crawl along the bottom, dragging cases behind them
- retreat into cases when danger threatens
- as larvae grow, cases are made larger
- eat algae, plants, larvae, worms and crustaceans
- eaten by fish (case and all) and predacious diving beetles



larva out of case



example of larva case

actual size: up to 50 mm

## Phantom Midge Larva

- eat underwater debris, algae, plants, and fungal spores
- are eaten by other aquatic invertebrates and by small fish
- crawl or wriggle
- midge adults are often mistaken for adult mosquitoes

actual size: 2 - 30 mm

## Daphnia or Water Flea

- are crustaceans and not insects
- feed on algae, microscopic animals and organic debris
- eaten by small fish and carnivorous insects
- swim with jerky movements using an enlarged pair of antennae to propel themselves

actual size: 0.2 - 3 mm

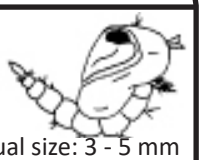
## Mosquito Larva

- hang upsidedown from the water surface, but swim to the bottom if threatened
- breathe through a tube (like a snorkel) at the rear
- called "wrigglers" since they constantly curl/uncurl/wriggle when they move
- eat underwater debris, algae, plants and fungal spores
- are eaten by fish and predatory insects

actual size: 3 - 5 mm

## Mosquito Pupa

- found just below the water surface; swim to the bottom when threatened
- called "tumblers" since they appear to tumble through the water
- pupae do not eat
- eaten by fish and predatory insects



actual size: 3 - 5 mm

## BARK BEETLE TUNNELS

Firmly holding the paper in place over the bark beetle tunnels on the log, rub the SIDE of your pencil lead back and forth across the paper.

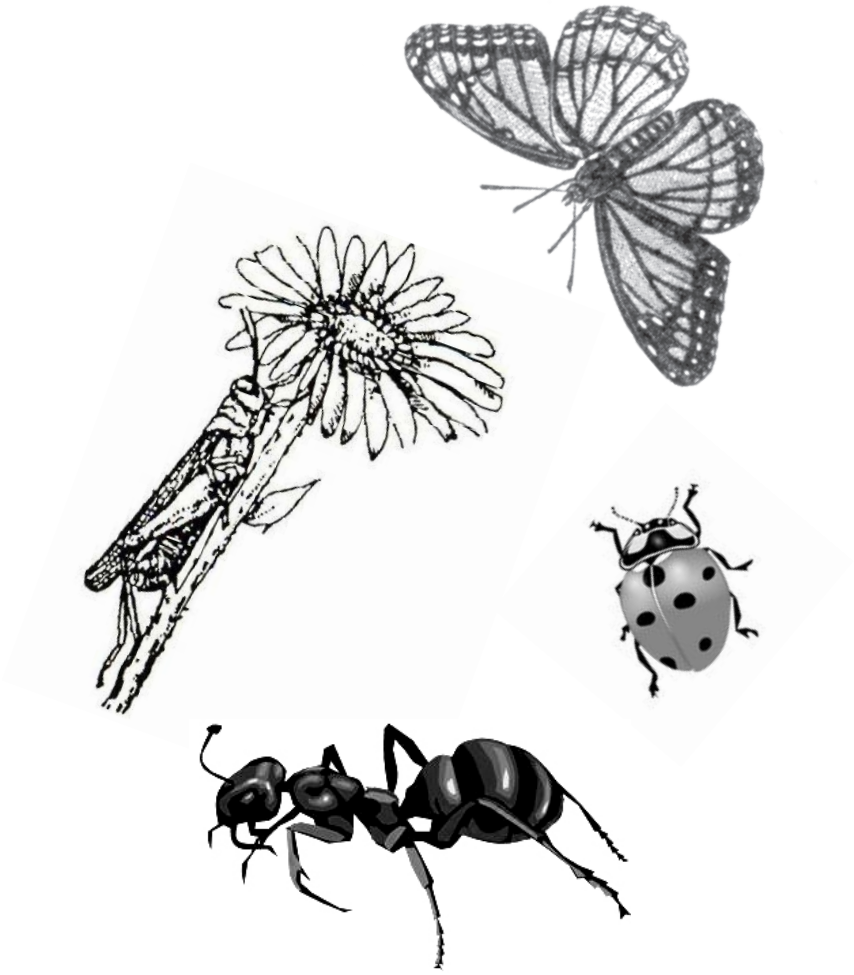
TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly



# Insect Intrigue



**Name:** _____

## CITIES IN THE TREES

Draw the animals you found on the tree.

## CITIES IN THE SOIL

Draw your special ant and the trail it made.
Add any eggs or larvae you saw on the anthill.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly



## COLOURS

Name each colour from your colour card. Beside the box, draw the object that was that colour. Colour the boxes later.

## UNDER

Draw the natural objects you moved and the creatures you discovered under each one.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly



## BUG BOXES

Draw and colour the insects you collected in your bug boxes.

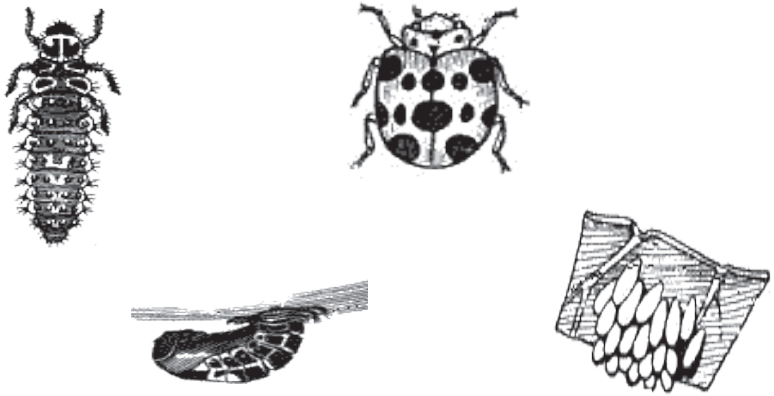
TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly

# LADY BEETLES

Number the pictures to show the correct order of stages in the lady beetle's lifecycle.



Draw the lady beetle you found.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly



# GRASSHOPPER GAZE

Add wings, legs and antenna to the grasshopper and colour it.

Complete the food chain by adding a plant, a grasshopper and a predator of the grasshopper.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly

# CREATURE LASSO

Draw the creatures you found within your lasso.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly



# SPIDERS

Draw either the spider or the web that you found and list 3 words to describe it.

TEMPERATURE: Cooler or Warmer

waist level: _____°C ground level: _____°C

Invertebrates: moving slowly moving quickly

# Creature Count

grasslands

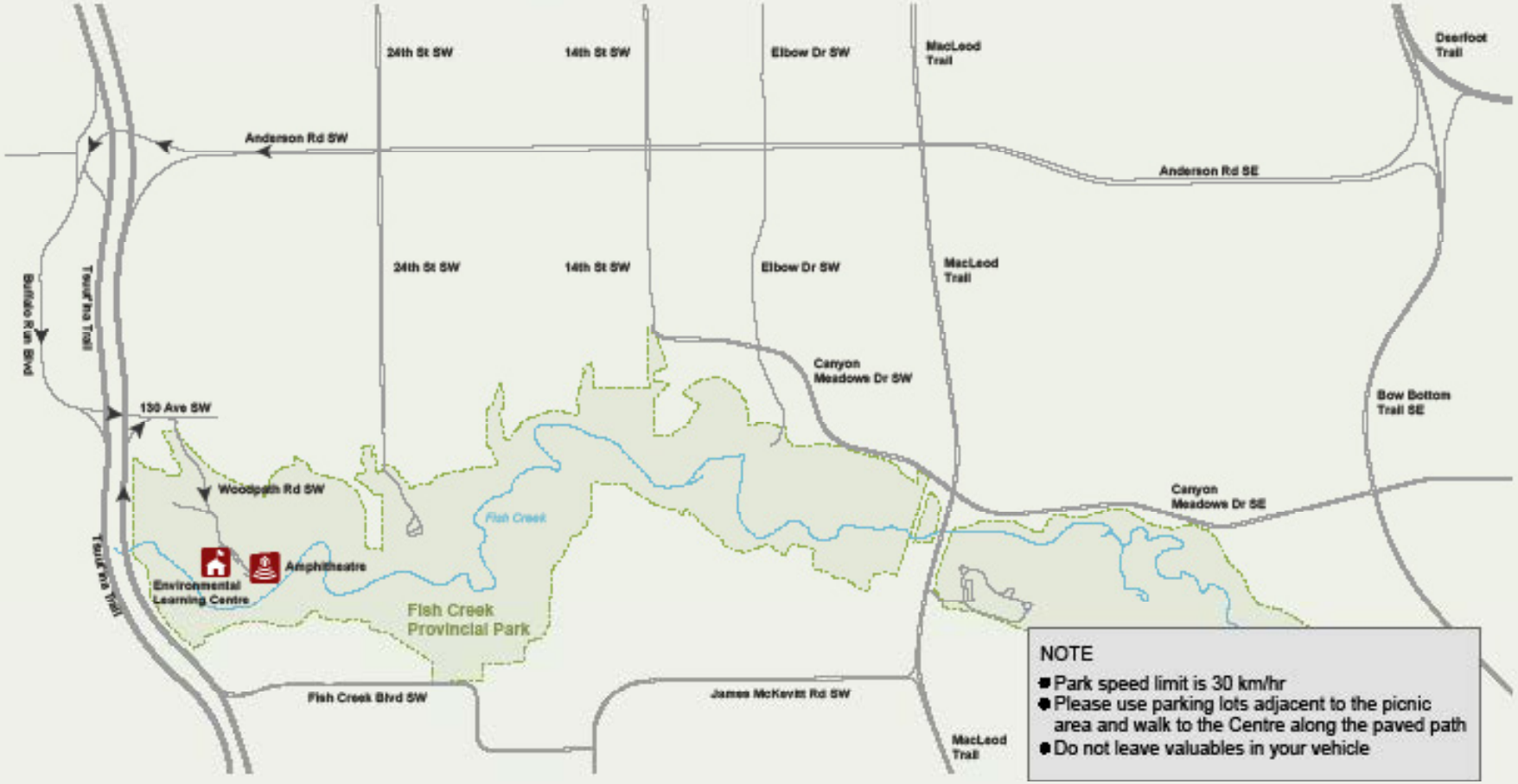
forest

water

| Plant Eaters | Animal Eaters | Decomposers |
|---|---|---|
| Grasshopper  | Spider  | Earthworm  |
| Butterfly  | Ground Beetle  | Centipede  |
| Snail  | Dragonfly  | Fly  |
| Bark Beetle  | Water Strider  | Slug  |
| Bumblebee  | Lady Beetle  | Cranefly  |

# Access Map - Fish Creek Environmental Learning Centre

13931 Woodpath Road SW, Calgary, Alberta




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

DIRECTIONS

**From Anderson Rd SW heading west:**

- Follow signs to Tsuut'ina Trail and follow exit onto Buffalo Run Blvd

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

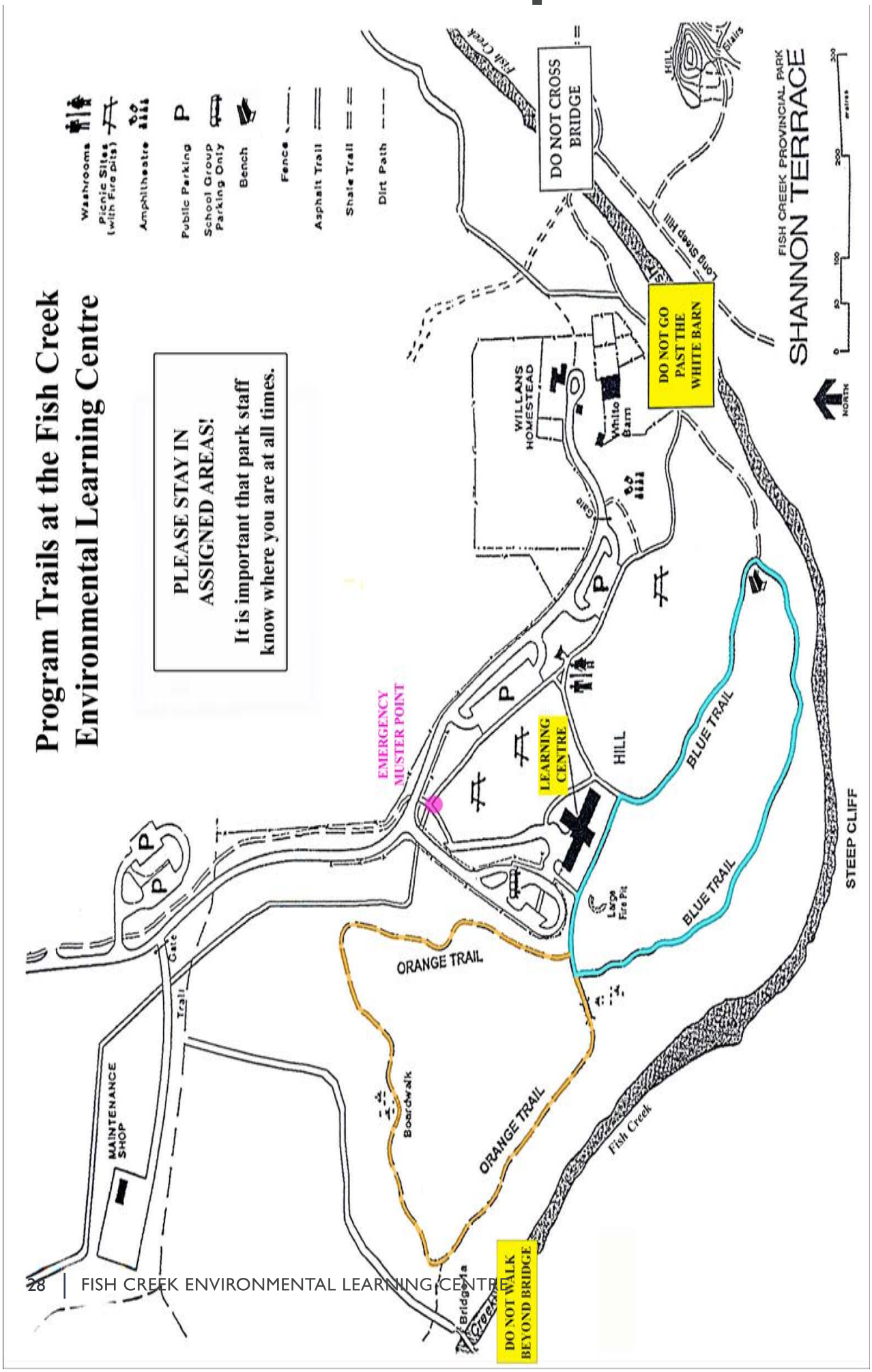
- Take the 130 Ave SW exit and keep right at top of ramp onto eastbound 130 Ave SW

N

0 200 400m

Directions Map

# Trail Map


Program Trails at the Fish Creek
Environmental Learning Centre
PLEASE STAY IN
ASSIGNED AREAS!
It is important that park staff
know where you are at all times.
Washrooms
Picnic Sites (with Fire pits)
Amphitheatre
Public Parking
School Group Parking Only
Bench
Fence
Asphalt Trail
Shale Trail
Dirt Path
DO NOT CROSS BRIDGE
DO NOT GO PAST THE WHITE BARN
WILLANS HOMESTEAD
White Barn
Long Steep Hill
FISH CREEK PROVINCIAL PARK
SHANNON TERRACE
NORTH
EMERGENCY MUSTER POINT
LEARNING CENTRE
HILL
BLUE TRAIL
BLUE TRAIL
Large Fire Pit
ORANGE TRAIL
ORANGE TRAIL
Boardwalk
Fish Creek
STEEP CLIFF
MAINTENANCE SHOP
Gate
Trail
Bridge
DO NOT WALK BEYOND BRIDGE