WINTER DETECTIVES

A teacher conducted field study science program for Grade 6 students.

Fish Creek Environmental Learning Centre
(403) 297-7827
www.fish-creek
WINTER DETECTIVES

A teacher conducted field study program for Grade 6.

This curriculum connected field study was developed to support the Grade 6 topic: Evidence and Investigation and the mandates of Alberta Parks Service.

Developed by:

Fish Creek Environmental Learning Centre
Fish Creek Provincial Park
13931 Woodpath Road S.W.
Calgary, Alberta
T2W 5R6

(403) 297-7827

November 2007
TABLE OF CONTENTS

1.0 Introduction ................................... 2
  1.1 Program Outline ...................... 3
  1.2 Program Objectives and Curriculum Fit .......... 4
  1.3 Curriculum Connections ........... 5

2.0 Environmental Education Opportunities at Fish Creek Provincial Park ...................... 6
  2.1 Fish Creek Environmental Learning Centre .......... 6
  2.2 Lunch Break Procedures ............ 7
  2.3 Outdoor Lunch Opportunities ........... 7

3.0 Teacher Instructions and Checklist For Planning Your Field Study Day at The Park ...... 8
  3.1 Planning Your Itinerary For the Field Study Day ........ 9

4.0 Class Discussion About The Field Study ..................................... 10

5.0 Preparatory Field Study Activities ............................................. 12
  5.1 Using A Key ....................... 13
  5.2 Track Patterns ................... 14
  5.3 Tracking Terms .................. 17
  5.4 Clue Charts ....................... 18
  5.5 Boot Sizes .................................. 19
  5.6 What Are Animal Signs? .......... 19
  5.7 Be A Winter Detective .......... 19
  5.8 Preparatory and Post Test ........... 20

6.0 Field Study Activity Guide .......... 31
  6.1 Animal Tracking ...................... 31
  6.2 Human Tracking ......................... 33
  6.3 Animal Signs ......................... 34
  6.4 Human Signs ......................... 35

7.0 Optional On-Site Activities .......... 36
  7.1 Video Presentation ................... 36
  7.2 Track Tales .......................... 36
  7.3 Aspen Parkland Seat Puzzle .......... 37
  7.4 What Is It? ............................ 37

8.0 Post Field Study Activity Ideas .. 38
  8.1 Posters ..................................... 38
  8.2 Creating Track Tales ................... 38
  8.3 Park Animal Poster ..................... 38
  8.4 Clue Charts ................................ 38
  8.5 Human Impact .......................... 39
  8.6 Practical Applications ............... 39
  8.7 Scenarios ................................ 40
  8.8 Websites ................................ 41

9.0 Notes ................................................. 42
1.0 INTRODUCTION

Welcome to WINTER DETECTIVES, a teacher-conducted science program for Grade Six students.

This is a curriculum connected full day field study with multidisciplinary preparatory and post activity support. The intent is to offer a natural world experience for students that reflects the outdoor field study components of Topic D: Evidence and Investigation from the Grade 6 Alberta Elementary Science Curriculum and the mandates of Alberta Parks Service:

- preservation
- heritage appreciation
- outdoor recreation
- heritage tourism

Fish Creek Provincial Park, Canada’s largest urban provincial park, has a strong mandate within its management plan to support and foster environmental education. It states:

“Alberta’s Fish Creek Provincial Park is an evolving landscape in an urban setting where the needs of wildlife and natural systems are balanced with outdoor leisure and environmental education.”
1.1 PROGRAM OUTLINE

Welcome to WINTER DETECTIVES, a teacher conducted program for Grade 6 students. Armed with warm clothes, curious minds and keen observation skills, the students set out to solve mysteries of the winter environment.

WINTER DETECTIVES is a teacher and parent led sequential program that consists of three components. First, there are seven preparatory activities to be done at school that are multidisciplinary in nature. Some of these activities are marked as essential: some as optional. We strongly recommend that you have the class complete at least the activities marked essential to enhance the students’ success with the on-site activities.

This is followed by a full day field study done in the natural world that takes the children through four experiential activities focused on both animal and human tracks and signs. In the morning, the students are outside with clue charts and measuring tapes to record details of observed animal and human tracks. Back inside the Centre, students use their recorded data and Park-specific tracking keys to identify the track prints and patterns of Park animals that are active in the winter. The focus of the afternoon explorations is to observe, investigate and interpret evidence of human and animal activity.

To conclude the process there are eight follow-up activities to be done back at school that are intended to reflect on and apply what the students have learned.

There are also checklists for helping arrange and organize your field study and a set of field study sheets for students to use that facilitate the experience. This program was developed by the Environmental Education staff at Fish Creek Provincial Park in consultation with formal and community educators.
1.2 PROGRAM OBJECTIVES AND CURRICULUM FIT

These activities have been designed to meet specific curriculum requirements for Grade 6 in Alberta’s Elementary Science Curriculum. The intent is to provide a series of school based and natural world based activities that build on each other and are directly connected to on-going classroom events and experiences in the students’ personal world of interaction. This directed sequence of educational opportunities helps make the entire experience more meaningful for students, teachers and parent volunteers.

This field study program, and the school based preparatory/post activities that complement it, have been designed to address four specific learner expectations from Topic D: Evidence and Investigation, (Grade 6) in the Alberta Elementary Science Program of Studies:

SLE 1.

In a natural outdoor setting, recognize evidence of recent human activity and recognize evidence of animal activity.

SLE 2.

Observe a set of footprints and infer the direction and speed of travel.

SLE 3.

Recognize that evidence found at the scene of an activity may have unique characteristics that allow an investigator to make inferences about the participants and nature of the activity, and give examples of how specific evidence may be used.

SLE 4.

Investigate evidence and link it to a possible source by:

• classifying fingerprints collected from a variety of surfaces
• classify footprints, tire prints and soil samples from a variety of locations
• analyzing ink from different pens, using paper chromatography.

The program is also designed to reflect the mandates of Alberta Parks Service:

• preservation
• heritage appreciation
• outdoor recreation
• heritage tourism
1.3 CURRICULUM CONNECTIONS

This program is primarily a science based field study, but there are other curriculum connections with the Grade 6 CORE program of studies.

SOCIAL STUDIES

Topic A: Local Government

• review the role local government plays in preservation and protection of green spaces
• research skills are enhanced

LANGUAGE ARTS

EXPLORING

• formulating hypothesis
• posing questions to organize investigations

CONSTRUCTING

• focus their talk or writing on the important ideas related to a topic

COMMUNICATING

• provide support for the expression of opinions on topics within their immediate experience

MATH

• classifies objects according to visible characteristics
• uses appropriate standard measuring units for length
• adds and subtracts whole numbers
• reads distances according to a scale

PHYSICAL EDUCATION

• experience success and enjoyment through participation in outdoor activities
• understand the use of clothing and footwear appropriate to outdoor activities
• understand safety principles as they apply to outdoor pursuits
• cooperatively work in groups
Fish Creek Provincial Park stretches from the T’suu T’ina Reserve at 37 Street in the west to the Bow River in the east. The Park is 20 km long, but only 1-1 1/2 km wide, as it encompasses mainly the creek and surrounding valley.

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

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. Lost or broken equipment must be paid for or replaced.

3. Washrooms and a water fountain are located in the building. There are no vending machines or microwave ovens available. Hot water is available. Please make hot drinks in cups, not the urn.

4. A short orientation (about 20 minutes) will be provided, when your group arrives, to welcome the students and introduce them to the Park, its rules, the program for the day and what the students might see.

5. Indoor activities focusing on key concepts are available for use during the lunch break or inclement weather. No teacher preparation is required. All activities have written instructions and the correct answers where required. A small library is also available for student use.
2.2 LUNCH BREAK PROCEDURES

Your class may eat inside the facility. While the students are eating, please explain to the class our expectations regarding disposal of “lunch time leftovers”.

- empty pop or juice can/bottles and drink boxes go into the special container labeled “BOTTLES AND CANS”. We send these to recycling depots. Do the students know what recycling is, how it conserves resources and how it helps the environment?

- food garbage goes into the container labeled “COMPOST”. This is fed to worms in a vermiculture program in the Park.

- factory produced wrappers into the “NON-RECYCLABLES” containers to be sent to the landfill site. These items are usually a mixture of plastic, paper or foil which means they cannot be put with other recyclables.

- paper and plastic lunch bags go back home to be re-used.

- plastic sandwich bags, food wrap or tin foil also goes home to be reused. What must be done to it before it is stored? Why does it need to be washed?

2.3 OUTDOOR LUNCH OPPORTUNITIES

There are several picnic tables and a large firepit behind the Fish Creek Environmental Learning Centre. Reservations are required to use this outdoor cooking firepit. Call 297-7827 to reserve.

When using a firepit area be sure to:

- provide your own roasting sticks and firewood. DO NOT USE BRANCHES OR DEADFALL IN THE PARK.

- have a bucket of water nearby BEFORE the fire is lit.

- remind students to clean up the firepit area of garbage and left over food.

- DO NOT FEED OR DISTURB WILDLIFE.

- check the fire is out before you leave the area.
3.0 TEACHER INSTRUCTIONS AND CHECKLIST FOR PLANNING YOUR FIELD STUDY DAY IN THE PARK

Give every driver – INCLUDING THE BUS DRIVER - a copy of the route map (last stapled page of this package). Make sure all drivers know you are coming to the west end of the Park, near Woodbine!!

PREPARE YOURSELF
- Read the teacher package thoroughly: phone 297-7827 if you have any questions.
- Select the activities to fit your lesson plans, students’ skill levels and time you are at the Park.

PREPARE THE STUDENTS
- Review the Park rules (explained on page 10).
- Discuss the field trip, using the points listed on page 11: emphasis the following:
  - Wear boots.
  - Dress in layers.
  - There is nowhere to buy anything so bring plenty to eat and drink.
- Do some of the preparatory activities marked as essential: do the others if you have time.
- Review the activities and the worksheets (pages paper clipped together) with the students.

PREPARE THE ADULTS
- Recommended ratio is 1 adult per 6 students: minimum is 3 adults per class including the teacher.
- Review the Park rules (explained on page 10.)
- Emphasize the following:
  - Wear boots
  - Dress in layers
  - NO COFFEE AVAILABLE HERE
- The adults’ role is to supervise the students and ensure they are safe and focused on school work.

BRING
- A cheque made payable to Minister of Finance for $3.00 per student (no charge for adults).
- Trail map for each adult (long map wrapped around teacher package).
- Student worksheets, pencils, and clipboards.
- A first aid kit.
- A box of kleenex.
3.1 PLANNING YOUR ITINERARY FOR THE FIELD STUDY DAY

Please consider travel time from your school to and from the Park. If you are planning on modifying your program, select your activities and timetable the day accordingly.

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>______</td>
<td>depart from school</td>
</tr>
<tr>
<td>______</td>
<td>arrive at Fish Creek Provincial Park and settle into classroom. Participate in a class orientation meeting with a Park staff person.</td>
</tr>
<tr>
<td>______</td>
<td>teacher and volunteer led morning program activities.</td>
</tr>
</tbody>
</table>

Write down the activities you are doing and what equipment and materials you need for each if you are modifying your day.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>EQUIPMENT/MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

______ lunch. Lunch is held either outside, weather permitting, or in your classroom area.

______ afternoon program.

Write down the activities you are doing and what equipment and materials you need for each if you are modifying your day.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>EQUIPMENT / MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

______ Gather together, inventory and return any equipment borrowed from the Park.

______ Gather personal belongings together and travel back to school.

______ Arrive back at school.
4.0 CLASS DISCUSSION ABOUT THE FIELD STUDY

Alberta’s Parks and Protected Areas

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. The province’s network of parks and protected areas covers roughly 27,500 square kilometres and includes more than 500 sites. This network helps to ensure that Alberta’s biodiversity is preserved for future generations.

Our vision: “Alberta’s parks and protected areas preserve, in perpetuity, landscapes, natural features and processes representative of the environmental diversity of the province.”

Provincial parks exist to protect provincially significant natural, historical and cultural features. They contain a range of outdoor recreation, interpretive and environmental education opportunities, facilities and services so that visitors can explore, learn, understand and appreciate the natural world.

Alberta’s Parks are protected by the Alberta Parks Act, and it is through this legislation that these landscapes have specific and important guidelines to help keep them healthy and vibrant.

The following is a list of rules that reflect the Park’s mandate to protect and preserve the natural environment.

Do not feed or disturb wildlife
Feeding wildlife is not necessary and is potentially dangerous. The Park’s ecosystem provides all the food and habitat wildlife require for their basic needs. Human food does not meet their nutritional requirements and can cause some species to become dependent on handouts. Quietly observe all wildlife from a comfortable distance.

Leave only footprints
Take only pictures. Everything in the Park - living and non-living - is protected to help preserve the complex living system that thrives in Fish Creek Provincial Park. Students are welcome to share their discoveries, but must remember to leave everything as they found it. Treat plants, insects and trees gently to avoid unnecessary injury or damage.

Pets on a leash
There are no off-leash areas in any of Alberta’s provincial parks. This protects Park wildlife as well as domestic pets. Please do not bring pets on the field study. They can be distractions for students and pose a health risk for those allergic to pets. Guide Dogs and Assisted-Living Dogs are the only animals permitted in Park buildings.

Pitch in
Litter should be placed in the rubbish bins provided or in a pocket. Human litter is hazardous to Park plants and wildlife.
Fire in its place
Use only designated fire pits. Open fires are a threat to public safety and Park habitats. The burning of Park vegetation is not permitted.

Discussion Checklist

Here is a checklist of things to discuss at school prior to the field study day:

- Discuss the fact that Fish Creek Provincial Park is not a city park. It is one of many Alberta parks and protected areas.

- Discuss the purpose of provincial parks and protected areas. Have the class make a list of behaviours on the field study that would show respect for living things and a commitment to their care. Possibilities include:
  - leave ant hills, nests and rotting logs alone and intact. They are animal homes.
  - walk carefully around bushes and trees, not through the middle of them.
  - stay on the trails. When leaving the trails to complete program activities walk carefully, watching each step to avoid crushing small plants and trees.

- Discuss the Park rules. These rules reflect the provincial parks mandate to protect and preserve our natural environment.

- Discuss outdoor safety. Students need to:
  - stay where an adult can see them at all times
  - walk, do not run.
  - keep feet on the ground: no climbing.
  - leaves dead branches on the ground: they do not make safe walking sticks.

- Discuss behavioural expectations. Explain that the field study will be another school day, just at a different place. All the school rules apply. Remember that other schools will probably be there trying to also work.

- Discuss the appropriate clothing required for the season and the day’s activities. Mornings in the shady forest will be cool. Trails may be muddy and wet. Several layers of clothing, including a water resistant layer and a hat or hood will provide the most comfort. Boots provide more protection than sandals and canvas runners. However, boots with heavy lug soles are damaging to trails. They should only be worn when necessary, and replaced with sturdy runners or shoes when not required. Warm weather means sunhats, sunscreen and insect repellent will also be required.
5.0 PREPARATORY FIELD STUDY ACTIVITIES

The preparatory activities described here will introduce the field study day to your students and will offer the students opportunities to practise the skills to be used during the field study day. If possible, invite the parent volunteers into the classroom to also experience these activities.

Feel free to use your own activities in addition to the ones described in this program. Within the activities you select and present to your students be sure to:

- Complete the preparatory activities described in this package marked as essential, as this knowledge will be required to complete the field study activities.

Select activities in addition to the ones described in this package that reflect each specific learner outcome from the curriculum that will be addressed on the field study day. (See Program Objectives and Curriculum Fit).

Consider other curriculum areas and explore how all subject areas can be connected to your field study day.

Conduct some activities outside to get the students familiar with outdoor classroom management strategies and thinking of school in an outdoor setting.
5.1 USING A KEY - ESSENTIAL

The morning portion of the program at the Park is devoted to using the clue charts and track keys. The students will gather clues about the animal tracks, measure the prints, draw print patterns and record other observations. The students will use copies of the Centre's tracking key booklet to discover which animals made the tracks. The following activity will help students understand how keys are developed and how to use them.

Key the Class

Students will gain an understanding of keys by using the similarities and differences of their classmates to develop their own key system for the members of the class based on observation only. The first split, for example, can be by sex or between students with and without glasses. Other divisions can be made according to hair colour and/or length, height, shoe size and so on. Refer to the following sample of a class group keyed out. Direct the students to take the key as far as an individual, for example, each student's name.
Extend The Key Activity

Have the students write fictitious names instead of their own on the key and then exchange keys. Can the students fill in the correct names by working through the similarities and differences in the key?

To prepare the students with the necessary skills prior to arrival, have the groups measure their normal stride and straddle. Refer to Tracking Terms to know.

Follow up the keying activity with a discussion about the key they will use at the Park. Science has classified all organisms. A key further classifies from a basic organization. Track identifications at the Park will be made on the basis of this keying concept.

For example, two species of animals may belong to a certain Family because they share particular traits. However, they may each be in a different Genus because of differences in other physiological features, such as teeth, prints, and bones.

The tracking key will take particularly large characteristics such as the track pattern, and break it down into specific features of each print to the end of key - the identification of the animal that made the track.

5.2 Track Patterns - Essential

All animals move in a variety of ways but each also has a characteristic gait. For example, humans can walk, run, hop, skip and so on but we usually walk. Walking is our characteristic gait. A coyote can run or walk, but it usually walks.

As a result of the characteristic gaits of animals, tracking patterns can be divided into four groups. These groups are based on their most common gait and track patterns they create. Knowledge of the four groups of track patterns is basic to the success of the program. The prints have been labeled:

- RF - right front
- RH - right hind
- LF - left front
- LH - left hind
The four groups are as follows:

1. **PERFECT WALKERS** - perfect walkers place their hind feet almost exactly in the prints made by their front feet. The track pattern appears as an almost straight line of single prints. This gait and track pattern are characteristic of members of the dog family, cat family, and hoofed animals.

2. **BOUNDERS** - these animals reach out and touch the ground with both front feet at the same time. Their hind feet follow as a pair, landing in or just behind the prints made by the front feet. The track pattern itself is usually square-shaped or rectangular. Bounders include most of the long-bodied, short legged animals, such as most of the weasel family and voles. Bounders rarely change their gait but keep in mind that their rate of speed can be determined by the distance between sets of prints. For example, a normal gait is 15 to 20 cm and if it suddenly increases by 30 cm or more you know the animal has picked up speed.
3. **HOPPERS** - As these animals move, they push off their hind feet (which are larger than front feet), hit with their front feet and bring back their feet all the way through so the hind feet land in front of the front feet. Hoppers include squirrels and hares.

4. **IMPERFECT WALKERS** - As a group, these animals are wide-bodied and heavyset. Instead of moving limbs on opposite sides of the body, they find it easier to move limbs on one side of the body at the same time. They appear to lumber along or waddle as they shuffle both right legs, then both left legs, alternating sides as they do. They include bear, raccoon, skunk, badger, beaver, muskrat, porcupine, and humans.
5.3 TRACKING TERMS - ESSENTIAL

PRINT - An impression made in the snow by one foot. Width is measured from one outer edge to the other. Length is measured from the top to the bottom of the impression.

STRIDE - The distance between prints made by a walking animal. Measured from the middle of one print to the middle of the next print.

LEAP - The distance between pairs or bunches of prints made by a hopping or bounding animal. Measured from the forward end of one print to the nearest end of the next print.

TRACK PATTERN - A series of prints made by one small animal.

STRADDLE - The width of the track. Measured from the outer edges of the prints farthest apart.
PAIR OF PRINTS - A set of 2 prints that is repeated in the track pattern.

BUNCH OF PRINTS - A set of 4 prints (made by each of the animal’s feet) that is repeated in the track pattern.

CHANNEL OR TROUGH - A shallow depression made by short-legged animals as they push through the snow. Their track is in the bottom of the channel of trough.

5.4 CLUE CHARTS - ESSENTIAL

There are 2 sets of clue charts at the end of this package. Both sets consist of Animal Tracking Clue Chart, Human Tracking Clue Chart, Animal Activity Clue Chart and Human Activity Clue Chart. All the categories have blank spaces in 1 set: these are to be photocopied for the students to complete during their Park visit. The second set of clue charts have explanations and suggestions in each category. These are to assist you as you explain the charts to the students.

The day before your field trip, distribute copies of the clue charts to the students. Using your, set explain each category on each clue chart. Emphasize the importance of observing and measuring carefully. The data should be recorded as thoroughly as possible.
5.5 BOOT SIZES - OPTIONAL

Completion of this preparatory activity will enable the students to make more accurate inferences about the human tracks they observe during on-site Activity #2.

Divide the class into small groups. It may be helpful if they are in the same groups they will be in during their Park visit. This will give the students practice at working with each other.

Each group is to move to the boot rack area of your school to measure and record the length of 20 different pairs of boots. Assign a grade level for each group (e.g. 1 group does Kindergarten boots, another does Grade 2, Grade 4, Grade 6 and the last group measures the adults’ boots).

Back in the classroom, have each group calculate the average boot length for their assigned age level. In a class discussion, have the groups share their data. Discuss averages and how this information will help the students make predictions only. Due to variations in human size, a boot length of 28 cm may be a Grade 6 or it may be an adult with small feet. It is, however, extremely unlikely to be that of a Grade 2 student.

5.6 WHAT ARE ANIMAL SIGNS? - OPTIONAL

This activity introduces the topic of animal signs. Explain that all animals, including humans, leave physical evidence of their activities. Ask the students what activities animals may engage in. Write their answers on the blackboard. Suggestions may include eat, hunt, sleep, travel, drink, moult, mate, give birth, store food. Now discuss each response individually. What evidence do the students think they may find of each activity? Write these responses on the board. For example, moult - fur, feathers, skin, antlers.

5.7 BE A WINTER DETECTIVE - OPTIONAL

This activity also focuses the students’ attention on the many different signs animals leave. In addition, the activity will give the students an idea of what some of the signs look like and where the students will find them. Make 1 copy of the activity sheet (at the end of this package) for each student. Allow the students ten minutes to circle all the animal signs they can find. Have them write beside it, the name of the animal leaving the sign, when possible. Using the answer sheet provided, review correct responses with the students.
This is a test designed to be administered as the first and last component of the field study sequence of activities. This will provide you with an idea of the learning that has occurred directly from the field study experiences.

The test can also be used as a post test only, or you can remove questions from this test to add to your own unit test.
**WINTER DETECTIVES**

Name __________________ Date ______________ Score ___/46

**INSTRUCTIONS:** Please read each question very carefully. Note the mark value of each question and ensure that your answers contain the required amount of information.

1. **What is a PROTECTED AREA? (1 mark)**
   
   a. Any area surrounded by some sort of fence that stops people from damaging the area inside.
   
   b. Any area that has measures to control the types of land uses permitted in an area.
   
   c. All areas are protected areas in some way.
   
   d. Any area that offers safe and secure opportunities for people to get outside, ensuring that the people that use the area are protected from any dangers that might be there.

2. **Place a check mark beside all the things this track tells you about this animal. (5 marks)**

   _____ able to fly
   _____ fur covered
   _____ big animal
   _____ small animal
   _____ front foot
   _____ back foot
   _____ able to climb
   _____ able to dig
   _____ able to swim
   _____ able to run fast
   _____ has long legs
   _____ has short legs
   _____ has a tail

---

21 Fish Creek Environmental Learning Centre
3. Create a classification key for the following items. (6 marks)

<table>
<thead>
<tr>
<th>tree</th>
<th>spruce cone</th>
<th>car</th>
<th>window</th>
</tr>
</thead>
<tbody>
<tr>
<td>pencil</td>
<td>book</td>
<td>paper</td>
<td>pop can</td>
</tr>
<tr>
<td>coyote</td>
<td>garbage bag</td>
<td>scissors</td>
<td>bear</td>
</tr>
</tbody>
</table>

4. Beside each of the words in Column “A” write the letter for the description in Column “B” that best describes the word. (6 marks)

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ straddle</td>
<td>a. An animal that places its back feet in the spot vacated by the front feet. The track pattern appears as a straight line.</td>
</tr>
<tr>
<td>_____ stride</td>
<td>b. An animal that always moves in a straight line and is hard to follow.</td>
</tr>
<tr>
<td>_____ hopper</td>
<td>c. An animal that pushes off using their hind feet and lands on their front feet, then pushes off with their hind feet again.</td>
</tr>
<tr>
<td>_____ perfect walker</td>
<td>d. The width of a track pattern (from outside to outside).</td>
</tr>
<tr>
<td>_____ bounder</td>
<td>e. An animal that rarely walks and mostly flies instead.</td>
</tr>
<tr>
<td>_____ imperfect walker</td>
<td>f. The distance between prints made by a moving animal. (using the same foot in one set of prints and the same foot in the next set of prints)</td>
</tr>
<tr>
<td></td>
<td>g. An animal that touches the ground with both front feet. Then the hind feet land together, close to the front feet.</td>
</tr>
<tr>
<td></td>
<td>h. An animal that moves both legs on the same side of its body forward, then moves the two legs on the other side on its body.</td>
</tr>
</tbody>
</table>
5. Place a check mark beside all the things this track tells you about this animal. 
   *(5 marks)*

   - able to fly
   - fur covered
   - big animal
   - small animal
   - front foot
   - back foot
   - able to climb
   - able to dig
   - able to swim
   - able to run fast
   - has long legs
   - has short legs
   - has a tail

6. For each of the animals listed below, use the letter code to indicate what kind of a walker they are. *(8 marks)*

   - perfect walker **PW**
   - bounder **B**
   - hopper **H**
   - imperfect walker **IW**

   - coyote
   - bear
   - weasel
   - deer
   - squirrel
   - beaver
   - human
   - snowshoe hare
7. Examine the track patterns below. (6 marks)

   a. Which pattern shows a walking animal?
   b. Which pattern shows a running animal?
   c. Which pattern shows an animal stop and start again?
   d. Which pattern shows an animal that is able to climb trees?
   e. Which pattern shows an animal that has burrowed through the snow?
   f. Which pattern shows an animal that has a large heavy tail?
8. Closely examine this picture. Use the tracks you see in the snow to write a story that describes the events that have occurred here in the recent past. (9 marks)
INSTRUCTIONS: Please read each question very carefully. Note the mark value of each question and ensure that your answers contain the required amount of information.

1. **What is a PROTECTED AREA?** (1 mark)

   a. Any area surrounded by some sort of fence that stops people from damaging the area inside.

   b. *Any area that has measures to control the types of land uses permitted in an area.*

   c. All areas are protected areas in some way.

   d. Any area that offers safe and secure opportunities for people to get outside, ensuring that the people that use the area are protected from any dangers that might be there.

2. **Place a check mark beside all the things this track tells you about this animal.** (5 marks)

   - [ ] able to fly
   - [x] fur covered
   - [ ] big animal
   - [x] small animal
   - [x] front foot
   - [x] back foot
   - [ ] able to climb
   - [ ] able to dig
   - [ ] able to swim
   - [x] able to run fast
   - [ ] has long legs
   - [x] has short legs
   - [ ] has a tail
3. Create a classification key for the following items. *(6 marks)*

<table>
<thead>
<tr>
<th>BIG</th>
<th>SMALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>tree</td>
<td>spruce cone</td>
</tr>
<tr>
<td>pencil</td>
<td>pencil</td>
</tr>
<tr>
<td>coyote</td>
<td>bear</td>
</tr>
<tr>
<td>car</td>
<td>book</td>
</tr>
<tr>
<td>window</td>
<td>chickadee</td>
</tr>
<tr>
<td>garbage bag</td>
<td>pop can</td>
</tr>
<tr>
<td>scissor</td>
<td>scissors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIVING</th>
<th>NON-LIVING</th>
</tr>
</thead>
<tbody>
<tr>
<td>tree</td>
<td>car</td>
</tr>
<tr>
<td>bear</td>
<td>window</td>
</tr>
<tr>
<td>coyote</td>
<td>garbage bag</td>
</tr>
</tbody>
</table>

4. Beside each of the words in Column “A” write the letter for the description in Column “B” that best describes the word. *(6 marks)*

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>straddle</td>
</tr>
<tr>
<td>f</td>
<td>stride</td>
</tr>
<tr>
<td>c</td>
<td>hopper</td>
</tr>
<tr>
<td>a</td>
<td>perfect walker</td>
</tr>
<tr>
<td>g</td>
<td>bounder</td>
</tr>
<tr>
<td>h</td>
<td>imperfect walker</td>
</tr>
</tbody>
</table>

| d | a. An animal that places its back feet in the spot vacated by the front feet. The track pattern appears as a straight line. |
| f | b. An animal that always moves in a straight line and is hard to follow. |
| c | c. An animal that pushes off using their hind feet and lands on their front feet, then pushes off with their hind feet again. |
| a | d. The width of a track pattern (from outside to outside). |
| g | e. An animal that rarely walks and mostly flies instead. |
| h | f. The distance between prints made by a moving animal. (using the same foot in one set of prints and the same foot in the next set of prints) |
|   | g. An animal that touches the ground with both front feet. Then the hind feet land together, close to the front feet. |
|   | h. An animal that moves both legs on the same side of its body forward, then moves the two legs on the other side on its body. |
5. Place a check mark beside all the things this track tells you about this animal. 
(5 marks)

- [ ] able to fly
- [ ] fur covered
- [ ] big animal
- [ ] small animal
- [ ] front foot
- [ ] back foot
- [ ] able to climb
- [ ] able to dig
- [ ] able to swim
- [ ] able to run fast
- [ ] has long legs
- [ ] has short legs
- [ ] has a tail

6. For each of the animals listed below, use the letter code to indicate what kind of a walker they are. (8 marks)

<table>
<thead>
<tr>
<th>perfect walker PW</th>
<th>bounder B</th>
<th>hopper H</th>
<th>imperfect walker IW</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW coyote</td>
<td>IW bear</td>
<td>B weasel</td>
<td>PW deer</td>
</tr>
<tr>
<td>H squirrel</td>
<td>IW beaver</td>
<td>IW human</td>
<td>H snowshoe hare</td>
</tr>
</tbody>
</table>
7. Examine the track patterns below. (6 marks)

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/7</td>
<td>a. Which pattern shows a walking animal?</td>
</tr>
<tr>
<td>1</td>
<td>b. Which pattern shows a running animal?</td>
</tr>
<tr>
<td>9</td>
<td>c. Which pattern shows an animal stop and start again?</td>
</tr>
<tr>
<td>5</td>
<td>d. Which pattern shows an animal that is able to climb trees?</td>
</tr>
<tr>
<td>8</td>
<td>e. Which pattern shows an animal that has burrowed through the snow?</td>
</tr>
<tr>
<td>2</td>
<td>f. Which pattern shows an animal that has a large heavy tail?</td>
</tr>
</tbody>
</table>

1. running animal  
2. beaver track  
3. tree drop snow pattern  
4. walking animal  
5. tree to tree squirrel track  
6. nonsense track  
7. human tracks  
8. tunneller track pattern  
9. start and stop tracks  
10. intersection of two animals
8. Closely examine this picture. Use the tracks you see in the snow to write a story that describes the events that have occurred here in the recent past. (9 marks)

The first set of tracks entering on the left belong to a perfect walker with no claw marks: a member of the cat family. The next set of tracks have long finger like prints: a tree climber. The cat gives chase and the squirrel is caught where its tracks disappear. The long wiggly lines indicate the wing imprints of a large bird. The cat is surprised by the attack and drops the squirrel, so that animal’s tracks reappear as it runs away.
6.0 FIELD STUDY ACTIVITY GUIDE

6.1 ANIMAL TRACKING

ACTIVITY SUMMARY: The students, divided into groups of 6, will look for animal tracks in the outdoor Park environment. Upon discovery of the tracks, each group will gather clues such as location, measurement of prints and track pattern. These findings are recorded on a clue chart. Identification of the track will be made inside the Centre, using the Park’s tracking keys.

Preparatory: Students will need to be familiar with Tracking Terms, the methodology of keys and the Clue chart categories. Refer to the Preparatory Activities (Section 5.0) of this package.

Time: 10 minutes to measure and record per set of tracks

5 minutes to identify using key per set of tracks

Equipment provided by the Centre:
2 clipboards per group
2 measuring tapes per group
2 Tracking Keys per group (indoor use)

Equipment provided by the school:
pencils, erasers
Track Clue Charts
Shannon Terrace Trail Maps

Instructions:

1. REMIND the students to move around the tracks carefully; leave them undisturbed for other groups to examine.

2. ORGANIZE your class into their groups so they are physical together.

3. PROVIDE each group with the following equipment and DESIGNATE the following roles:

    PROVIDE ROLE

    #1 clue chart, clipboard - record information
    #2 clue chart, clipboard - record information
    #3 measuring tape - measure stride and straddle
    #4 measuring tape - measure print itself
    #5 trail map - look for other important clues and mark on map where prints were found.
    #6 trail map

Students may rotate tasks so everyone has a chance to measure and record.
4. ENCOURAGE the students to help each other with the measuring and the observing. Remind the students to be quiet outside, to increase the possibility of wildlife sightings.

5. SOME animals tend to stay in the same area. If the students do not find different prints students should go to a new area. Try near the creek, the open grassy areas, and off the path.

6. RETURN to the Centre. Distribute two Tracking Keys to each group. Review with the class the instructions for use located at the beginning of the key. Use the clue charts and the KEY together to discover what animal made the track pattern.

7. WATCH the groups use the Tracking Key. If some in the group arrive at different animals for one track pattern - start at the beginning with them and go through the key’s choices as a group.

8. RECORD the correct answer on the clue chart under the Track Pattern column. Share all the students’ discoveries.

9. DISCUSS the process of being a detective as a class. Some leading questions: “What skills were important to have before we came? Was your job the same as a real detective’s? Did any of you guess an animal when you saw the print? What kind of problems can you have making judgements based on indirect evidence? Why didn’t we see animals when we saw their prints? (Noise or animals were inactive during that time). Is winter an active season for animals? What do other animals do in winter? (sleep or hibernate).”
6.2 HUMAN TRACKING

NOTE: This activity’s data could be gathered simultaneously with 6.1 Animal Tracking OR the class could complete Animal Tracking, including the indoor identification component, and then go back outside to do this activity before lunch.

Activity Summary: The students, in groups of 6, will locate human tracks and record information such as size, direction of travel and stride length. These findings are recorded on a clue chart. Inferences about the people will be made inside the Centre.

Preparatory: Explain the categories of the clue chart to the students prior to the field trip.

Time: 10 minutes to observe and record per set of tracks
5 minutes to complete inferences per set of tracks

Equipment provided by the Centre:
2 clipboards per group
2 measuring tapes per group

Equipment provided by the school:
Pencils
Human Tracking Clue Charts
Shannon Terrace Trail Maps

Instructions:
1. REMIND the students to move around the tracks carefully; leave them undisturbed for other groups to examine.
2. ORGANIZE your class into their groups so they are physically together.
3. PROVIDE each group with the following equipment and DESIGNATE the following roles:
   
   #1 clue chart, clipboard - record information
   #2 clue chart, clipboard - record information
   #3 measuring tape - measure prints
   #4 measuring tape - measure stride
   #5 trail map - look for other important clues, mark on map where prints were found
   #6 trail map

Students may rotate tasks so everyone has a chance to measure and record.

4. ENCOURAGE the students to help each other with the measuring and observing. Remind the students to be quiet outside to increase the possibility of wildlife sightings.

5. RETURN to the Centre. Each group should discuss the data they recorded for each set of human prints as they complete the inference section of their clue chart.
6.3 ANIMAL SIGNS

Activity Summary: The students, in groups, will explore the outdoors looking for signs of animal activity. Each discovery will be carefully recorded on the Animal Signs Clue Chart. Identification of the sign and the animal will be made back inside the Centre, using the Animal Signs Keys provided by the Park.

Preparatory: Completion of “Be A Winter Detective” and/or “What Are Animal Signs?” activities (refer to the Preparatory Activities, Section 5.0 of this package) will increase the students’ success with this activity. Students will have a better idea of what animal signs are and where to look for them.

Time: 10 minutes to measure and record per animal sign

5 minutes to identify using key per animal sign

Equipment provided by the Centre:
2 clipboards per group
2 measuring tapes per group
2 Animal Signs Keys per group
(indoor use only)

Equipment provided by the Centre:
Pencils
Animal Signs Clue Charts
Shannon Terrace Trail Maps

Instructions:

1. REVIEW the clue chart instructions and headings with the students.

2. REMIND the students not to remove or destroy any animal signs they find.

3. ORGANIZE the class into their groups.

4. ENSURE that all groups have their tapes, pencils, trail maps and clue charts. Leave the Animal Signs Keys inside.

5. MOVE the groups outside and along the trails. Have the groups rotate to different areas. Try near the creek, grassy areas and along animal trails. Check fallen logs and rocks. Have the students mark on the map where the signs were found and complete chart.

6. RETURN to the Centre. Distribute two Animal Signs Keys per group.

7. IDENTIFY the animal signs by having the students work in pairs with the keys and clue charts.

8. RECORD the correct answer on the clue chart in the Other Information column.

9. SHARE the groups’ discoveries.
6.4 HUMAN SIGNS

**NOTE:** This activity’s data could be gathered simultaneously with Section 6.3 Animal Signs OR the class could complete Animal Signs Activity, including indoor identification component and then go back outside to do this activity.

**Activity Summary:** Working in their small groups, students will explore the outdoors looking for signs of human activity. Each discovery will be recorded on the Human Signs Clue Chart. Back inside the Centre or the next day at school (depending on field trip time), students will use the information gathered to make inferences about the activity and participants.

**Preparatory:** Completion of ‘Boot Sizes” (refer to the Preparatory Activities Section 5.0) and the on-site Human Tracking activity will increase the students’ abilities to make accurate inferences during this activity.

**Time:** 10 minutes to observe and record per human sign

5 minutes to complete inferences per human sign

**Equipment provided by the Centre:**
- 2 clipboards per group
- 2 measuring tapes per group

**Equipment provided by the school:**
- Pencils
- Human Signs Clue Charts

**Instructions:**

1. REVIEW the clue chart instructions and headings with the students.

2. REMIND the students to leave any human activity signs intact for the other groups.

3. ORGANIZE the class into their groups.

4. ENSURE all groups have clipboards, pencils, measuring tapes, trail maps, and clue charts.

5. MOVE the groups outside and along the trails. Have the groups try different areas such as creek, forest, grasslands, picnic areas.

6. RETURN to the Centre after students have finished recording their evidence of human activities.

7. INSTRUCT the class, still working in the small groups, to complete the inferences categories of the chart.
7.0 OPTIONAL ON-SITE ACTIVITIES

7.1 VIDEO PRESENTATION

ANIMAL TRACKS AND SIGNS - 20 minutes

This video shows various animal tracks made in snow and mud. Many of the animals are native to Fish Creek Provincial Park with the exception of the wild turkey, gray squirrel, and fox. Tracks and other animal signs, such as feeding and resting sites, are described.

7.2 TRACK TALES

The exhibit Track Tales is located in the orientation area of the Centre. It illustrates seven track mysteries. Because the students are required to identify the tracks and explain each situation, this activity will be more successful if scheduled after the students have completed the morning tracking activity.

Complete instructions and answers are described in the blue brochure “Track Tales” included with this package. Use the brochure for assistance as you complete this activity with your students.
7.3 ASPEN PARKLAND
SEAT PUZZLE

There are twenty cube seats in the orientation area of the Centre. Twelve of these cubes can be put together to form one large picture of the Aspen Parkland.

Note: This activity utilizes the same area within the Centre as Track Tales. DO NOT schedule both activities simultaneously for your small groups.

Tell the students that some of the seats, when moved together, will form one large picture. The students’ task is to build that picture, using teamwork. To increase the challenge, no verbal communication is permitted. Students must use gestures and signs to share ideas. Once the puzzle has been put together correctly, discuss the process and the picture with the students. What clues did the students’ notice that helped them fit the pieces together correctly?

Have the students examine the animals in the picture. How many different ways can the students classify the animals? Possibilities include:

- birds, insects, mammals
- movement - fliers, perfect walkers, hoppers, bounders
- colour
- herbivores, carnivores, omnivores
- migrators, hibernators, winter active
- prey, predators

7.4 WHAT IS IT?

This indoor activity is an introduction to the afternoon activity “Animal Signs”. You will be supplied with 2 large wooden boxes, each divided into 10 numbered compartments. Inside each compartment there is one animal sign (e.g. nest, feather, fur). Have the students write the numbers 1 to 10 vertically on a blank piece of paper. Divide the class in half and give each group 1 of the boxes. Ask the students to look at the object in each compartment and, beside the corresponding number, write down what they think it is and what animal left that sign. After 10 minutes, review the correct answers with the class using the answer sheet provided by the Centre.
8.0 POST FIELD STUDY ACTIVITY IDEAS

8.1 POSTERS

Posters and pictures depicting the students’ discoveries in the Park are always greatly appreciated. They will be put up in the Centre for all visitors to enjoy. Mailing address is:

Fish Creek Environmental Learning Centre
13931 Woodpath Road S.W.
Calgary, Alberta
T2W 5R6

8.2 CREATING TRACK TALES

Working in their small groups, have the students create their own “Track Tale”. First they should imagine a situation that might occur among the Park animals (involve at least 3). When the students are ready to draw their story, they may wish to refer to their completed Clue Charts to ensure accuracy of patterns and prints. Have the students write their story on the back of their drawing, and then exchange Track Tales. Can the students solve the “Track Tale” mysteries created by the other groups without having to read the answer on the back?

8.3 PARK ANIMAL POSTER

Have each student create a poster of one winter active Park animal. After some library research, the poster could include:

- track pattern and print
- habitat
- winter adaptations
- how affected by human activities

8.4 CLUE CHARTS

Students may require class time to complete the Inferences categories on the Human Tracking and Human Activity Clue Charts. Small group or whole class discussions of the students’ observations and inferences would provide valuable feedback and an assessment opportunity for the teacher.
8.5 HUMAN IMPACT

Have a class discussion about the impact of human activities on the Park’s natural environment. Which activities were rated positive, which neutral and which negative? How did the students decide the rating? Is there a way activities that have a negative impact could be changed so they didn’t spoil nature? Is there a more appropriate place to do those activities than in a provincial park?

8.6 PRACTICAL APPLICATIONS

Discuss the practical applications of track and sign identification. Who might use these skills and why? Possible responses include:

Who

- police, fire investigators, rescue teams, Park Rangers, Fish and Wildlife officers, military personnel, biologists

Why - humans:

- locate missing, lost or sick people or suspected criminals (track identification)
- determine sequence of events and/or suspects in criminal investigations (activity identifications)
- determine use of an area to assist planning of facilities, trails, picnic areas, etc. (activity identifications)

Why - animals:

- determine if a particular species is in the area; living there or passing through
- estimate probable population of a species
- locate a particular animal (e.g. injured deer)
8.7 SCENARIOS

Read the following scenarios to the students. Encourage them to interpret the information given to arrive at probable answers.

Conservation Officers and fire department personnel respond to a bush fire. After the flames are extinguished, they attempt to determine cause of the blaze. What clues should they be looking for?

Possible responses include:
- locate point of origin: check nearby firepits
- consider wind factor (direction, speed)
- move out from point of origin; watching for footprints, match stubs, lighters, etc.
- talk with visitors who may have witnessed people in the area.

Conservation Officers need to estimate the deer population in the Park. What would be the best season to do this and why?

Late winter because:
- snow conditions make tracking and animal sign location easy
- rut season is over so aggression has declined
- few Park visitors to startle the deer into hiding
- lack of leaves and lush vegetation make it easier to spot the deer

While on routine patrol, Conservation Officers discover warm ashes, empty bottles, cigarette butts, empty can of spray paint, and a denim jacket in a secluded forest area. From this evidence; infer
1. probable age range of participants
2. probable activities in the Park
3. reasons for Park staff concern

Possible responses:
- mid-teens to mid-twenties
- illegal activities: open fire, alcohol consumption, defacing Park property with graffiti
- location of fire could have caused a large scale forest fire, over-consumption of alcohol poses a safety threat to participants and other visitors and graffiti is unsightly and causes increases in both staffing and property costs.

Conservation Officers receive a report of an injured bird. Witness states he saw a large bird walking through the bush, dragging its wing. What signs should rangers look for as they attempt to locate the bird?

Possible responses are:
- footprints, drag marks on the ground
- bent grass, broken twigs low to the ground
- sounds of movement
8.8 WEBSITES

This activity demonstrates a practical application of classification systems in daily life. Websites use classification systems to breakdown a large body of information into smaller groups that share common characteristics. Each time a new subsite is selected, more detailed information is obtained.

Check the Internet and select a website that contains many subsites but is clearly organized. (e.g. www.cd.gov.ab.ca/parks/fishcreek). Give the address to the students and ask them to record ONLY the site and subsite titles. They should organize this information in a key format. This may take more than 1 class if the students wish to read the information contained in each subsite!

Invite the students, working individually or in their small groups, to create a website for your school. Their “home page” should contain 3 or 4 broad categories (this would be the equivalent of the 4 track patterns: hoppers, bounders, perfect walkers and imperfect walkers). Possibilities may include:

- information
- volunteer
- staff
- special events opportunities

Students would then take each of those main categories and create subsites within them. Ideally, the information contained within each subsite should occupy 1 screen only. If it takes more than 1 screen, the information needs to be broken down into smaller components. This activity could be extended to include art and language arts by having the students put each subsite on a separate page and creating text and graphics.

EXAMPLE:

<table>
<thead>
<tr>
<th>XYZ ELEMENTARY SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information</strong></td>
</tr>
<tr>
<td>-details</td>
</tr>
<tr>
<td>-address</td>
</tr>
<tr>
<td>-phone #</td>
</tr>
<tr>
<td>-fax #</td>
</tr>
<tr>
<td>-calendar</td>
</tr>
<tr>
<td>-rules</td>
</tr>
<tr>
<td>-fees</td>
</tr>
<tr>
<td>-description</td>
</tr>
<tr>
<td>-history</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
ACCESS MAP - Fish Creek Environmental Learning Centre (Shannon Terrace Area)
13931 Woodpath Road S.W., Calgary, Alberta T2W 5R6
Phone: (403) 297-7827  Fax: (403) 297-7849
www.fish-creek.org

Directions:
Take Anderson Road West to 37th Street S.W. Head south on 37th Street S.W. to 130th Avenue S.W. (Second set of lights on 37th Street S.W.). Turn left onto 130th Avenue S.W. and then take your first right onto Woodpath Road S.W. Drive straight ahead into the Park and continue to the bottom of the hill. The Environmental Learning Centre is on the right hand side (watch for signs) or the Shannon Terrace area parking lots are straight ahead.

NOTE:
- Park speed limit is 30 km/hr.
- Please park in the picnic area and walk to the Centre along the paved path.
- Do not leave valuables in your vehicle.
WINTER DETECTIVES

CLUE CHARTS
<table>
<thead>
<tr>
<th>LOCATION DESCRIPTION</th>
<th>DESCRIBE APPEARANCE</th>
<th>DRAWING</th>
<th>SIGN DESCRIPTION</th>
<th>SIZE</th>
<th>COLOR</th>
<th>MATERIALS</th>
<th>OTHER INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Height:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCATION DESCRIPTION</td>
<td>DESCRIBE APPEARANCE</td>
<td>DRAWING</td>
<td>SIZE</td>
<td>COLOR</td>
<td>MATERIALS</td>
<td>OTHER INFORMATION</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>---------</td>
<td>-------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Under an evergreen tree in a place where there were many trees.</td>
<td>Oval, flattened area of snow.</td>
<td></td>
<td></td>
<td>---</td>
<td>---</td>
<td>Tracks to and from it looked like</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width: 14 cm.</td>
<td></td>
<td></td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: 18 cm.</td>
<td></td>
<td></td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Height: 4 cm. (deep)</td>
<td></td>
<td></td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grassy field with many small bushes.</td>
<td>Pile of animal droppings.</td>
<td></td>
<td></td>
<td>Dark brown.</td>
<td>---</td>
<td>Bushes had twigs with ragged ends.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width: --</td>
<td></td>
<td></td>
<td>Dark brown.</td>
<td>---</td>
<td>Bushes had twigs with ragged ends.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: 1.8 cm.</td>
<td></td>
<td></td>
<td>Dark brown.</td>
<td>---</td>
<td>Bushes had twigs with ragged ends.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Height: --</td>
<td></td>
<td></td>
<td>Dark brown.</td>
<td>---</td>
<td>Bushes had twigs with ragged ends.</td>
<td></td>
</tr>
<tr>
<td>TRACK PATTERN</td>
<td>DRAW PRINT</td>
<td>MEASUREMENTS</td>
<td>OTHER IMPORTANT CLUES NEAR THE TRACK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>--------------</td>
<td>-------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PRINT</td>
<td>STRIDE or LEAP</td>
<td>STRADDLE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FRONT FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIND FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FRONT FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIND FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FRONT FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIND FOOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Length:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Width:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track Pattern</td>
<td>Draw Print</td>
<td>Measurements</td>
<td>Other Important Clues Near the Track</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>--------------</td>
<td>-------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Print</td>
<td>Stride or Leap</td>
<td>Straddle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front Foot</td>
<td>8.0 cm.</td>
<td>38.0 cm.</td>
<td>12.0 cm.</td>
<td>None.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length: 8.0 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width: 6.0 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hind Foot</td>
<td>8.0 cm.</td>
<td></td>
<td></td>
<td>Tracks ended at bottom of tree.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length: 8.0 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width: 6.0 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front Foot</td>
<td>1.5 cm.</td>
<td>18.0 cm.</td>
<td>9.0 cm.</td>
<td>Tracks ended at bottom of tree.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length: 1.5 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width: 1.3 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hind Foot</td>
<td>2.5 cm.</td>
<td></td>
<td></td>
<td>Tracks ended at bottom of tree.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length: 2.5 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width: 1.5 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Front Foot</td>
<td>2.0 cm.</td>
<td>50.0 cm.</td>
<td>8.0 cm.</td>
<td>Beside other tracks that were much</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length: 2.0 cm.</td>
<td></td>
<td></td>
<td>smaller, disappeared in hole in snow.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Width: 2.0 cm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCATION DESCRIPTION</td>
<td>DESCRIBE APPEARANCE</td>
<td>DRAWING</td>
<td>OLD / FRESH</td>
<td>NUMBER</td>
<td>OBSERVED IMPACT</td>
<td>INFERENCES</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
<td>---------</td>
<td>-------------</td>
<td>--------</td>
<td>----------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Age: #</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Positive Neutral Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Long-term Impact:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Age: #</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Positive Neutral Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Long-term Impact:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Age: #</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Positive Neutral Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Long-term Impact:</td>
<td></td>
</tr>
</tbody>
</table>
# HUMAN SIGN CLUE CHART

**Fish Creek Environmental Learning Centre**

<table>
<thead>
<tr>
<th>LOCATION DESCRIPTION</th>
<th>DESCRIBE APPEARANCE</th>
<th>DRAWING</th>
<th>OLD / FRESH</th>
<th>NUMBER</th>
<th>OBSERVED IMPACT</th>
<th>INFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange trail - right at edge of the trail.</td>
<td>2 long, solid tracks with little holes beside them.</td>
<td><img src="image1" alt="Drawing" /></td>
<td>Fresh; clear edges and holes not filled with snow.</td>
<td>Just one set.</td>
<td>None.</td>
<td>Age: Probably adult #: 1 Positive Neutral Negative Long-term Impact: None if remain on trail.</td>
</tr>
<tr>
<td>South-east side of hill next to the Centre.</td>
<td>Wide, long solid marks in snow from hill top to bottom.</td>
<td><img src="image2" alt="Drawing" /></td>
<td>Old; partly melted and icy.</td>
<td>Many.</td>
<td>Snow worn off in places. Some places pulled out of ground. 8 broken branches on bushes.</td>
<td>Age: Adults and children #: many Positive Neutral Negative Long-term Impact: Fewer plants and without plant roots to hold in place soil will wash away in rain (erosion).</td>
</tr>
<tr>
<td>South-east along trail from picnic area to white barn.</td>
<td>Human and dog family tracks; long skinny mark in snow sometimes between the tracks.</td>
<td><img src="image3" alt="Drawing" /></td>
<td>Fresh</td>
<td>One set of each kind of track.</td>
<td>None, stayed on trail - no dog dropping.</td>
<td>Age: Probably adult (size of track) #: 1 person Positive Neutral Negative Long-term Impact: None if keep cleaning up and keep dog on leash so it doesn’t hurt animals.</td>
</tr>
<tr>
<td>AGE OF TRACK</td>
<td>DRAW PRINT (Sole Pattern)</td>
<td>MEASUREMENTS</td>
<td>DIRECTION OF TRAVEL (see map)</td>
<td>STOPS (Left and Right Prints Side-by-Side)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------</td>
<td>---------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh: Old</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Because:</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh: Old</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Because:</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh: Old</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Because:</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PRINT**
- Overall Length:
- Overall Width:
- Heel Length:
- Heel Width:

**STRIDE (heel to heel)**
- Speed (stride remain constant?)

**POSSIBLE AGE GROUP**

**SPEED**

**Why?**
<table>
<thead>
<tr>
<th>AGE OF TRACK</th>
<th>DRAW PRINT (Sole Pattern)</th>
<th>MEASUREMENTS</th>
<th>DIRECTION OF TRAVEL (see map)</th>
<th>STOP (Left and Right Prints Side-by-Side)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh</td>
<td>Old</td>
<td>Overall Length: 32 cm. 88 cm. Overall Width: 10 cm. Heel Length: 8 cm. Heel Width: 8 cm.</td>
<td>N.E. along shale trail toward bridge.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Why?</td>
</tr>
<tr>
<td>Fresh</td>
<td>Old</td>
<td>Overall Length: 18 cm. 40 cm. Overall Width: 7 cm. Heel Length: about 4 cm. Heel Width: about 4 cm.</td>
<td>S.W. along paved trail behind Centre.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Why?</td>
</tr>
<tr>
<td>Fresh</td>
<td>Old</td>
<td>Overall Length: 40 cm. 94 cm. Overall Width: 14 cm. Heel Length: 12 cm. Heel Width: 10 cm.</td>
<td>On the Orange trail.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Why?</td>
</tr>
</tbody>
</table>

Because:

Edges were still sharp and clear; could see pattern of boot sole.

In some places there were many other tracks over top of it.

Sides caved in; partly melted - maybe in last week's chinook.

POSSIBLE AGE GROUP:

Adult

E.C.S. Child

Possibility of animal tracks:

Maybe to look at animal tracks that were beside the trail or maybe saw the animal.

Possibility of human tracks:

We couldn't see anything so maybe to watch a bird in the trees or to look at a watch to check the time.
STAY IN ASSIGNED AREAS!

It is important Park staff know where you are at all times.