ORIENTEERING

AT SHANNON TERRACE

A teacher conducted field study program for Grade 4 - 6 students.

Fish Creek Environmental Learning Centre

(403) 297-7827

www.fish-creek.org
ORIENTEERING

A teacher conducted program for Division II students.

This curriculum connected field study was developed to support specific requirements in the Physical Education and Social Studies curricula of the Course of Studies as set by Alberta Education and to support the mandates of Alberta Parks Service.

Developed by:

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# TABLE OF CONTENTS

1.0 Introduction ................................. 2  
   1.1 Program Outline ....................... 3  
   1.2 Program Objectives and Curriculum Fit 4  
   1.3 Cross Curricular 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 Reading A Map ......................... 12  
   5.2 Orienting A Map ....................... 13  
   5.3 Orienteering Practise .................. 14  
   5.4 Where Are We Going? ............... 14  
   5.5 Control Markers ....................... 15  
   5.6 Recording the Code Letters .......... 15  

6.0 Field Study Activity Descriptions ......................................... 16  
   6.1 Orienteering Course ................. 16  

7.0 Post Field Study Activity Ideas ............................................ 18  
   7.1 Activity Journals ...................... 18  
   7.2 Map Making ............................ 18  
   7.3 Memory Orienteering ................. 18  
   7.4 Treasure Hunt ......................... 19  
   7.5 My Impact .............................. 20  

8.0 Notes ......................................... 21
1.0 INTRODUCTION

Welcome to ORIENTEERING AT SHANNON TERRACE, a teacher-conducted program for Division II 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 components of the Alberta Elementary Physical Education and Social Studies Curricula 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

Orienteering is a navigational sport using maps specially drawn for each course. The Control Points to be located are marked on the map as circles. Each control marker that will be located at the centre of the control point has an identifying code on it. Participants record the code on a control marker card and proceed to the next marker. Orienteering can also require use of a compass for a more advanced learning experience.

The sport of orienteering has much to offer students. It fosters self-reliance and confidence. Students will be making their own decisions and develop a genuine sense of achievement after locating the control markers. Small group skills such as discussion, decision-making and compromise are further developed as the students work out the most effective routes to reach all the control markers. Orienteering provides the opportunity to learn and practise an essential life skill - correctly reading and effectively using a map.

Orienteering At Shannon Terrace is a teacher and parent led sequential program that consists of three components. First, there are preparatory activities to be done at school that are multidisciplinary in nature. This is followed by a full day field study done in the natural world that takes the children through a twelve marker orienteering course. At each control marker, students can complete an activity that focuses on an aspect of the cultural or natural history of this part of the Fish Creek Valley. To conclude the field trip study, there are 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 an activity journal for students to use that facilitates the experience.

At the end of this package, there are two maps of the Shannon Terrace area of Fish Creek Provincial Park. Map 1 shows the main roads, parking lots, buildings, trails and Fish Creek and has a simple legend. Use this map during a basic introduction to maps and familiarize yourself, students and adult volunteers with the Shannon Terrace area.
Map 2 is a typical orienteering map and provides much more information about the area. The meridians are drawn to magnetic north. Contour lines indicate elevation changes and degree of slope. Trails, fences, landmarks and vegetation are shown in detail. The location of each control point is marked with a circle and a corresponding number. Each control marker will be found on a feature (tree, fence, bridge or sign post) which is at the centre of the circle.

Laminated copies of this map will be in your classroom at the Centre the day of your field study visit.

This program was developed by the Environmental Education staff at Fish Creek Provincial Park in consultation with formal and community educators.

This field study program, and the school based preparatory/post activities that complement it, have been designed to address four specific learner expectations from the Alberta Elementary Physical Education Program of Studies: Outdoor Pursuits:

- understand applications of orienteering pursuits skills
- understand safety principles as they apply to outdoor pursuits activities
- cooperate in partner and small group situations
- experience success and enjoyment through participation in outdoor pursuits activities

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

- preservation
- heritage appreciation
- outdoor recreation
- heritage tourism
This program is primarily a physical education based field study, but there are many curriculum connections with the Grade 4 to 6 CORE program of studies.

**SOcial STUDIES**

**PROCESS SKILLS**

- identify cardinal and intercardinal directions, using the direction finder e.g. north arrow on a map
- recognize that there are many kinds of maps for different purposes

**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
2.0 ENVIRONMENTAL EDUCATION OPPORTUNITIES IN FISH CREEK PROVINCIAL PARK

Fish Creek Provincial Park stretches from the T'suu Tina 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 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 and pond wetlands and disturbed (urban) areas.

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.

2.1 FISH CREEK ENVIRONMENTAL LEARNING CENTRE

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. Lost or broken equipment must be paid for or replaced.
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 labelled "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 labelled "COMPOST". This is fed to worms in a vermiculture program in the Park.

- factory produced wrappers go into the "NON-RECYCLABLE" 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 reused

- 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:

- bring 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.

- **Do NOT feed or disturb wildlife.**

- remind students to clean up the firepit area of garbage and leftover food

- 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.
- Modify the activities to fit your lesson plans, students’ skill levels and time you are at the Park.
- Ensure that you know how to read and interpret the Orienteering map included with this package.
- Visit the Park and try at least part of the course before bringing your students.

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:
  - Dress appropriately for the weather and being outside for 1 - 2 hours at a time
  - Dress in layers: the forest is cool in the morning
  - RUNNERS (not sandals) or boots
  - Hats, sunscreen and insect repellent are needed during fall and spring visits
  - Cannot buy anything here so bring plenty to eat and drink.
  - Do the preparatory activities and assess the students abilities while doing these.
  - Divide the students in to small groups for the field study: ensure that each group has at least one student who demonstrated competence during the preparatory activities.
- Review 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 teacher.
- Review the Park rules with the adults (explained on page 10).
- Emphasize the following:
  - Dress appropriately for the weather and being outside for 1 - 2 hours at a time
  - Dress in layers: the forest is cool in the morning
  - RUNNERS (not sandals) or boots
  - Hats, sunscreen and insect repellent are needed during fall and spring visits
  - Cannot buy anything here so bring plenty to eat and drink. NO COFFEE AVAILABLE HERE: BRING THERMOS.
  - Explain to the adults’ that their role is to supervise the students, follow safety guidelines and Park rules and that the students return to the Centre on time. The adults should be able to offer guidance if the students start getting off course.

EQUIPMENT
Maps are provided by the Centre.

YOU BRING
- A cheque made payable to Minister of Finance for $3.00 per student for a full day field study: $1.50 for a half day. There is no charge for adults. You will recieve a receipt.
- Student worksheets, pencils, clipboards
- First-aid kit
3.1 PLANNING THE 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.

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<td>______</td>
<td>Depart from school.</td>
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<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>
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<td>Teacher and volunteer led morning program activities. Write down the activities you are doing and what equipment and materials you need for each if you are modifying your day.</td>
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<td>Lunch. Lunch is held either outside, weather permitting, or in your classroom area.</td>
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<td>______</td>
<td>Afternoon program. Write down the activities you are doing and what equipment and materials you need for each if you are modifying your day.</td>
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<td>______</td>
<td>Gather together, inventory and return any equipment borrowed from the Park.</td>
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<td>______</td>
<td>Gather personal belongings together and travel back to school.</td>
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<td>Arrive back at school.</td>
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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.
The preparatory activities described here will introduce the field study day to your students and will allow them to practise the skills needed 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 orientation package. Within the activities you select and present to your students be sure to:

Complete the preparatory activities described in this package, 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.

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**5.1 READING A MAP**

Explain to the students that all maps have symbols representing, by colour or shape, landmarks shown on the map. These symbols vary from map to map, so every map also has a legend. Somewhere on the map will be a list of each symbol with an explanation of what it represents. Any time they are using a map, the first thing a person should do is read the legend to understand the meaning of all the symbols.

Distribute copies of both the Sample Legend and the Map Symbol Practise sheets found at the end of this package. Have the students, either individually or working in the small groups they will be in during your Park visit, complete the activity sheet. This will ensure they are familiar with the symbols and their meanings. The sample legend is, in fact, the legend on the Orienteering map the students will be using at the Park.
The students need to know how to orient a map before attempting the orienteering course at the Park. Failure to correctly orient the map is the frequent reason why people experience difficulty following maps.

Orienting a map simply means the map is turned so that north on the map is pointing to the compass direction north. Even when the map reader is unsure which direction is north from their location, orienting the map can be accomplished by following these steps:

1. Read the legend.
2. Locate where you are presently.
3. Find a landmark (parking lot, hill, bridge, creek) close to your location.
4. Holding the map so the words remain right side up, turn yourself around until what is shown on the map matches actual locations.

Ask the students to draw the school grounds and show all permanent, fixed objects such as the school, parking lots, garbage bins, bicycle racks, playground equipment, goal posts, trees. If you are only using this map to teach map orienting, ask the students to do just a quick sketch. *(NOTE: if you want north at the top of the map, as is usually is, you will need to tell the students which edge of the paper the front doors of the school need to be facing).*

When all the students are finished, ask them to stand up holding their maps and turn themselves around until the map matches the actual locations of the landmarks. For example: if the map shows the parking lot is to the left of the building is it actually to the students’ left outside or do the students’ need to turn themselves slightly to line things up? Move the class to different locations inside and outside the school. At each stop, have the students orient the map to their surroundings. Continue until you are confident they understand the procedure and why it is critical to complete it correctly each time you change locations.

kinnikinnick (bearberry)
Using a map, either teacher or student made, of the school grounds set up an orienteering course. Place ten to twenty control markers on distinct landmarks that are represented on the map by symbols. Mark and number these locations on the map. Make a copy of the map for each student and distribute them to the class.

A mass start could be used if the controls are to be visited in random order. Assign a particular control as a starting point for each group and then allow them to use the most time efficient route to locate the remaining control markers.

As the groups find each control marker, they should record the code letter(s) beside the number on their paper. (e.g. 1. CG, 2. BT, etc.) When the students have finished the course, they unscramble the code letters to spell out a phrase you have selected as appropriate to the day’s activity. (e.g. Fitness is fun).

Divide the class into small groups and distribute a City of Calgary map, pencil crayons and a ruler to each group.

Remind the students the first thing to do when using a map is to read the legend. Have the students locate Fish Creek Provincial Park on the map and determine the length of the Park, using the ruler and the map scale. The Park is too large to explore all of it in one day. The class will be visiting only the extreme west end of the Park. Have the groups locate this area of the Park and circle it.

Next, have the students locate your school on the map and circle that location. With everyone following on their map, discuss the route you will be travelling to reach the Shannon Terrace area of the Park. Students could be highlighting this on their maps as each thoroughfare is mentioned. Again using a ruler and the map scale, ask the students to calculate approximately how many kilometres they must travel from the school to reach the Learning Centre. Given an average speed of 65 km/hr. (some roads will be less, some more) and allowing 5-10 minutes for red lights and stop signs, about how long should the trip take?
5.5 CONTROL MARKERS

Share the following information with your class. Orienteering control markers are usually red and white. On the course at Fish Creek Provincial Park, they are metal plates approximately 10 cm square permanently attached in a vertical position to a building, tree, fence, bridge or signpost. The control markers are NOT always attached at eye level on the front of these features. They may be on any side and at any height, so remember to look up, down and all around if the control marker is not immediately visible. Record ONLY the letter code on the control marker. Ignore any numbers or dots on the marker: those are for other special events. **NOTE:** the letters do not unscramble to spell any particular word or phrase.

5.6 RECORDING THE CODE LETTERS

If you are not using the "Orienteering in Fish Creek Provincial Park" journal, photocopy the Control Card (at the end of this package). Either individually or as a group, students will record the code letters on this as they find each control marker.

If you are using the "Orienteering in Fish Creek Provincial Park" activity journal, make a copy for each student to record the code letters at the top of each page and then complete the activity.

You are encouraged to modify the activities, or substitute your own, to fit both the skill levels of your students and your lesson plans. A separate journal for the adults, marked Leader’s Copy, should be given to each adult as it contains the both the code letters and the correct answers to the activities.
Objective: Students will understand applications of orienteering pursuits skills, understand and practise safety principles as they apply to outdoor pursuits activities, cooperate in partner and small group situations and experience success and enjoyment through participation in outdoor pursuits activities.

Activity Summary: Students will be given a laminated map showing 12 control markers primarily located within a dense white spruce forest. Working in small groups, the students will locate each control marker and record the double letter code on each marker. The students may complete a brief activity at each marker, if the teacher chooses.

Preparatory: Discussion and practise with map reading, orienting a map and orienteering (see Preparatory Activities section of this package).

Time:
- 2 hours without the "Inhabitants of Fish Creek" activity journal
- 3 1/2 to 4 hours with the "Inhabitants of Fish Creek" activity journal

Equipment provided by the Centre:
- laminated maps of the Orienteering course

Equipment provided by the school:
- pencils, erasers
- control card sheets OR
- "Inhabitants of Fish Creek " activity journal

Instructions:
1. Distribute a laminated map to each student and adult volunteer.
2. Ask the students to read the legend and find the Learning Centre on the map. Check that everyone is pointing to the correct building.
3. Ask the students to orient the map, using the parking lot location in relation to the building as their landmark. Check that everyone has both themselves and the map turned in the correct direction.
4. Assign each group a control marker as their starting point and list the sequence they are to find. Ensure at least one student in each group is writing down your instructions. It is important that you have a written list of each group’s members and their assigned sequence of control markers. There are four logical starting points and sequences. They are:
   - 1 through 12
   - 12 through 1
   - 6 through 12, then 1 through 5
   - 5 through 1, then 6 through 12

If you have more than four groups, some will have to start at the same control marker. Avoid the follow the leader situation by staggering the start time.
NOTE: Control Maker #11 is a long way from the other control markers and the terrain is steep. We recommend that you omit #11 or save it for the end of the day to be tried by groups who finish early and have clearly demonstrated excellent orienteering skills.

5. Explain that lunchbreak is when each group is at the point closest to the building as they move along the orienteering course. Groups doing the east part of the course will be having lunch later than the other groups so they may want to take a small snack with them on the course.

6. Ensure that everyone knows what time they must be back to the Centre at the day’s end and that at least one person in each group has a watch.

7. Point out that there are no facilities on the course so a bathroom break before heading out is advisable.

8. As each group is ready to start out check that they are heading in the correct direction.

9. When all your groups have returned, collect and count laminated maps.
7.0 POST FIELD STUDY ACTIVITY IDEAS

7.1 ACTIVITY JOURNAL

Allow class time for the students to complete their "Inhabitants of Fish Creek" journal. Check answers for thoroughness and correctness. The crossword puzzle at the end is a good review of material covered at each control marker.

7.2 MAP MAKING

Working in their small groups, have the students draw maps of the Shannon Terrace area showing buildings, trails, bridges and the creek. North should be indicated and a legend included.

Once the basic map has been completed, ask the students to add the interesting things they discovered while on the orienteering course: animal/bird sightings, nests, ant hills, flowers, strangely shaped trees, etc. Symbols used to represent these additions will need to be added to the legend.

Completed maps could be put on display at school or if the students would like to send their maps to the Learning Centre, staff will put them up for all visitors to enjoy. The mailing address is:

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

7.3 MEMORY ORIENTEERING

This type of orienteering hones not only map reading abilities but also requires good observation skills, retention and recall abilities. Draw a large map of the schoolyard, showing the location of the control markers. Set out the markers with their letter(s) codes.

Show the class the map and give the students, working in small groups, three minutes to study and memorize the map. Then, send them outside with paper and pencil to locate the control markers and record the codes. To avoid a follow-the- leader situation, you could send out only one group at a time. The other students could be inside completing their journals or the Map Making activity described above.

You may want to use code letters that could be unscrambled to form a simple message once all the controls have been found.
7.4 TREASURE HUNT

In small groups, students will set their own orienteering course using control cards and clues to identify the stops. When all the groups have finished setting a course, they will exchange maps and try to follow another group’s course. When a group has completed the course, it will have all the code letters. Each group must unscramble those code letters to read a clue indicating where the treasure is hidden.

Distribute 8 index cards, 2 pieces of paper (1 large: 1 small) and pencils to each group and move the class outside. Define the boundaries they must stay within as they draw a map of the area on the large piece of paper. The map should include natural and man-made landmarks, cardinal directions and a legend.

When all the groups have completed a map, explain that each group will set up an orienteering course consisting of 8 control points. The code letters on the control markers should unscramble to form a clue, indicating where a treasure has been hidden.

e.g. UN DR ET AE RE CH ED SK = under teacher desk

Give each group three minutes to think of a place to hide a treasure and record, on the small piece of paper, a clue indicating where the treasure is. (Check with each group to ensure their hiding place is acceptable).

Ask the students to keep in mind the following guidelines:

- keep their course distant from other groups
- set the control markers at some type of landmark e.g. tree, log, bicycle rack
- mark the location of each control marker on their map, using a circle. The centre of the circle should show the exact location of the control marker.
- write their group name, control number and double letter code on the front of the card. If the students cross off the letters in their written clue as they use them on the control markers repetition or omission of letters will be avoided.
- write a clue to help find the next stop on the back of the card
- as course is set up, record control number and codes to check answers later

Give the groups 1/2 hour to set up their course and then return to you. As each group returns, give them a container with a treasure (e.g. cookies, marshmallows etc.) inside, and have them place it in the hiding spot they had selected.

When all the groups are back, have them exchange maps. Ask them to pick up and bring back each control marker they find as they follow the course set by another group. Send the groups out to follow another group’s course. As each group returns, check that they have found all the control markers for the course they were following. Use the answer sheets if necessary. Give them time to unscramble the code letters and find the treasures.
At control marker 10, the students learned how the actions of a few people can negatively impact on the environment and how environmental factors such as weather can increase the damage. Expand on that brief lesson by having the class assess their own impact.

Start the class discussion by asking the students to give specific examples of their behaviours outside while at the Park. List each one on the blackboard. Possibilities include:

- watched a squirrel
- had a chickadee land on my hand
- picked up some litter
- broke a tree branch
- spilled potato chips
- collected up peanuts left out for the squirrels and blue jays
- poked an anthill with a stick

When the list is completed, go back through it and discuss each activity. Did it harm or help the environment? Students may need time to think through some of the less obvious responses. For example, the chickadee approached so closely because some people hand feed these birds. While it did not harm the chickadee to land on your student’s hand, what might happen if the bird approached someone who enjoys harming animals? Unfortunately, this does happen. While it may not seem to hurt the ants to poke at their hill, the result is the insects must expend valuable time and energy repairing the damage instead of completing other activities that are essential to the continuation of the colony, such as food gathering.

Put a star beside those activities that helped the environment: "X" beside those that harmed the environment. For those negative activities, can the students suggest a more positive alternate behaviour? (e.g. squat down and watch the ants: their actions can be both interesting and surprising).
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.
MAP SYMBOL PRACTISE

For the following exercise draw the feature using the correct color according to the symbols on the sample legend (following page). The contour interval is three metres. North is located at the top of the page.

Example:

<table>
<thead>
<tr>
<th>1. Draw a cliff on the top of the east side of a nine metre hill.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Draw a depression.</td>
</tr>
<tr>
<td>3. Draw a marsh.</td>
</tr>
<tr>
<td>4. Draw three boulders in south-west of a ruin.</td>
</tr>
<tr>
<td>5. Draw a ruin on the east side of a building.</td>
</tr>
<tr>
<td>6. Draw a marsh with a seasonal stream flowing out the southern end.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7. Draw Fish Creek with a paved path and a bridge.</td>
</tr>
<tr>
<td>8. Draw a clearing with a car wreck at the western edge.</td>
</tr>
<tr>
<td>10. Draw a cinder path beside a seasonal stream.</td>
</tr>
<tr>
<td>11. Draw a paved path south of an out-of-bounds area.</td>
</tr>
<tr>
<td>12. Draw a dirt path going through a forest.</td>
</tr>
</tbody>
</table>
### SAMPLE LEGEND

<table>
<thead>
<tr>
<th>Feature</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>Brown</td>
</tr>
<tr>
<td>Paved Lot</td>
<td>Brown</td>
</tr>
<tr>
<td>Paved Path</td>
<td>Black</td>
</tr>
<tr>
<td>Cinder Path</td>
<td>Black</td>
</tr>
<tr>
<td>Dirt Path</td>
<td>Black</td>
</tr>
<tr>
<td>Small Path</td>
<td>Black</td>
</tr>
<tr>
<td>Horse Trail</td>
<td>Black</td>
</tr>
<tr>
<td>Fence - crossable</td>
<td>Black</td>
</tr>
<tr>
<td>Fence - uncrossable</td>
<td>Black</td>
</tr>
<tr>
<td>Fence - in ruin</td>
<td>Black</td>
</tr>
<tr>
<td>Building</td>
<td>Black</td>
</tr>
<tr>
<td>Ruin</td>
<td>Black</td>
</tr>
<tr>
<td>Bridge</td>
<td>Black</td>
</tr>
<tr>
<td>Gate</td>
<td>Black</td>
</tr>
<tr>
<td>Car Wreck</td>
<td>Black</td>
</tr>
<tr>
<td>Contour Line</td>
<td>Brown</td>
</tr>
<tr>
<td>Form Line</td>
<td>Brown</td>
</tr>
<tr>
<td>Hill</td>
<td>Brown</td>
</tr>
<tr>
<td>Depression</td>
<td>Brown</td>
</tr>
<tr>
<td>Steep Bank</td>
<td>Brown</td>
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<td>Cliff</td>
<td>Black</td>
</tr>
<tr>
<td>Boulder</td>
<td>Black</td>
</tr>
<tr>
<td>Fish Creek</td>
<td>Black</td>
</tr>
<tr>
<td>Seasonal Stream</td>
<td>Black</td>
</tr>
<tr>
<td>Marsh</td>
<td>Black</td>
</tr>
<tr>
<td>Forest</td>
<td>Black</td>
</tr>
<tr>
<td>Open Land</td>
<td>White</td>
</tr>
<tr>
<td>Out-of-Bounds</td>
<td>Black</td>
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ORIENTEERING IN
FISH CREEK
PROVINCIAL PARK
Student Journal

Name: ________________________________
Alberta’s provincial parks and protected areas exist to protect significant natural, historical and cultural features and to provide outdoor recreational opportunities to enjoy these resources.

Fish Creek Provincial Park covers approximately 1450 hectares. You could place 61 Chinook Centre shopping malls (including parking lots) within the Park and still have land left over! Within this huge space there is a wide variety of different ecosystems. We need the help of every Park visitor to protect the plants and animals that live in these ecosystems.

Read each of the following scenarios and then write below it your suggestion for Park visitor behaviour that will prevent the problem.

An animal finds a fruit rollup wrapper. Because the wrapper smells like food, the animal eats and becomes very sick, possibly dying.

In some areas, the plants are trampled and dying. Without the roots to hold it in place, soil is being eroded.

Bones, arrowheads and nests are just a few of the important clues that show how people and animals have used this valley for thousands of years. Investigations are becoming difficult as the clues seem to be disappearing. There also seems to be fewer flowers.

Some of the wildlife species, including birds, are approaching too closely to Park visitors. They seem to want something from the people. These encounters sometimes have an unfortunate ending for the animal.
Development Bordering the Park

Look down the gravel road at the road crossing Fish Creek. Imagine you were the engineer contracted to design the bridge. What things would you have to consider to be sure the bridge did not have negative impact on the creek or the wildlife and plants?

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Look up the hills at the homes but..... DO NOT VENTURE NEAR! These seemingly innocent properties are actually providing shelter to .... ALIEN INVADERS!

These invaders sneak into the Park: sometimes by air, sometimes underground. They even hitchhike in with people or pets. Once they are in the Park, they can damage ecosystems very quickly. Park staff, visitors and homeowners need to ruthlessly destroy the invaders to protect the Park!

Can you guess the identity of these alien invaders?

Clues:
- originate in Europe and Asia
- have no enemies
- superior physical adaptations permit them to dominate native species
- only their offspring can change locations
- they produce thousands of offspring every year
- may appear to be very beautiful
- have a wide variety of colours

Have you guessed the identity of the Alien Invaders?

Turn to the last page of this booklet to check your answer.
Lichen

“Alice Alga took a lichen to Fred Fungus.”

Lichen is a combination of two other plants – algae and fungi. Algae provide the ability to make food through photosynthesis, a process fungi cannot do. Fungi provide the rigid physical shape. The fungi also retain water for the plant.

Lichens grow where the air quality is good. They are sensitive to air pollution. Distribution and health of lichen species can be mapped and monitored for changes that would indicate a change in the air quality.

In the past, people have used lichens to dye cloth, to make toothpaste and lotions and even perfume.

Lichen comes in a variety of colours and shapes. On the chart below, check off the different colours and shapes of lichen you see as you are exploring the Park.

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</tr>
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<td>Orange</td>
<td><img src="image1" alt="Crusty Orange" /></td>
</tr>
<tr>
<td>Yellow</td>
<td><img src="image4" alt="Crusty Yellow" /></td>
</tr>
<tr>
<td>Light green</td>
<td><img src="image7" alt="Crusty Light green" /></td>
</tr>
<tr>
<td>Grey</td>
<td><img src="image10" alt="Crusty Grey" /></td>
</tr>
<tr>
<td>Black</td>
<td><img src="image13" alt="Crusty Black" /></td>
</tr>
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</table>
Kinnikinnick

Look down for a trailing plant hugging the ground like a mat. It has brownish-red bark and shiny, dark green leaves that are oval and leathery. This is bearberry or kinnikinnick. Its waxy, bright red berries are a favourite food of bears and birds, including grouse. Natives used the berries for a type of pemmican and smoked the leaves in pipes.

Carefully moving the plants, find the beginning of one branch and follow it to the other end. Estimate how long it is. Repeat with two more branches. Find the average length by adding all the estimates together and then divide the total by 3.

Branch # 1: ________ cm

Branch # 2: ________ cm

Branch # 3: ________ cm

TOTAL: ________ cm ÷ 3 = ________ cm  average length
Deadfall

Deadfall (fallen tree trunks and branches) is an important part of a healthy forest ecosystem. It provides food and shelter for many small plants and animals. In turn, these organisms are important sources of food for larger animals. As the wood decays, it becomes part of the soil, adding valuable nutrients to the soil that plants need to grow.

Circle the items pictured below as you discover them by looking carefully at fallen logs you find as you continue your explorations.

- fungus
- slug
- centipede
- millipede
- moss
- lichen
- beetle
- earthworm
- spider
- seedling
- shrew
- woodpecker
Wetlands

Wetlands, such as the area by the metal culverts, are very important. Some insects, which are a vital source of food other species of wildlife, spend part or all of their life cycle in the water. Create a wetlands food chain. Put the pictures in the correct order by numbering each picture. Number 1 will be the organism at the bottom of the food chain.

frog  algae  garter snake  weasel  
scud  coyote  dragonfly nymph

Amphibians living in Fish Creek Provincial Park include the wood frog and the boreal chorus frog. Both depend on wetlands to lay their eggs and support their tadpoles. Adult wood frogs live in the forest, eating insects and other invertebrates. The boreal chorus frogs live near grassy, shallow ponds, also eating insects and other invertebrates.

Park visitors are expected to quietly watch the frogs. Handling, harassing, feeding or collecting them are strictly prohibited.

Even handling the frogs very gently can cause illness or death for these animals. What might be on a person’s hands and how would this hurt the frogs?
Wired Tree

Notice this tree has its trunk wrapped with wire. This is to prevent beaver from chewing the trunk. Beaver need the branches on the tree for both food and building materials. Why do you think we are preventing the animal from using this tree? (Hint: think about the location of the tree.)

Imagine how this area would look if there were beaver active in the area. A dam stretching across the creek would create a large pond behind. Many of the deciduous trees (those with broad leaves) would be cut down. There may even be canals dug by the beaver to access more trees. How would these changes benefit plants, trees and other animal species? (Hint: remember all living things need food, water, shelter and space.)

Changes in water would ..........

Changes in amount of sunlight reaching the forest floor would ..........

Changes in soil would ..........
Wild Rose Bushes

Stand beside the trail and look towards the creek. Notice the bushes with thorns on the branches. These are wild roses. In 1930, schoolchildren selected this to be the provincial flower of Alberta. This common bush flourishes on dry slopes, open woods, roadsides and river banks. Its bright pink flowers are a common sight in May and June.

THINGS TO TRY

- How many oranges can you see? No, oranges don’t grow in the Park but the red berries (called rosehips) from the rose bushes are rich in vitamin C, just like oranges. In fact, just three little rosehips contain as much vitamin C as one whole orange. Can you find any rosehips on the bushes? Count the rosehips and divide by 3 to discover how much vitamin C is on the rose bushes.

As much as would be in ______________ oranges

Natives and settlers had many uses for the rose bush. Match the rose part with a way you think it might have been used. Parts may have more than one use.

- flower petal
- leaves
- rose hips (berries)
- inner bark
- salads
- necklace beads
- smoking
- tea
- perfume/dries sachet
- jam, jelly, syrup
CONTROL MARKER   8

White Spruce

Pick up a fallen needle from the ground at the control marker. Look at it closely. The needle is square: it has four sides. You can use needle shapes and growth patterns to identify evergreens.

square  -  spruce

flat   -   fir

pairs or pie   -   pine

As you are standing on the hilltop, look around at the difference in vegetation. One side of the hill is a dry, grassy slope. The other side is a cool, moist spruce forest. Which side is facing north?

___________________________________________________________________________________

Explain the reasons for your decision.

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________
Flood Impact

Stand at least 1 metre back from the edge of the creek.

Look upstream. Draw the creek and its banks.

Look downstream. Draw the creek and its banks.

Compare the two areas. List the major differences you see.

What do you think caused these differences?

Why did you have to stand well back from the edge of the creek?
Balsam Poplar

**FAST FACTS:**
- the bark is smooth, greenish-grey when the tree is young. The bark darkens and becomes rough and furrowed as the tree ages.
- the leaf stems are rounded.
- the egg-shaped leaves are dark, shiny green on top, whitish green underneath.
- the resin covering the buds has a strong sweet smell.
- nuthatches and chickadees find insects in the bark cervices. Woodpeckers drill into older wood looking for insect larvae.

Write a poem about these trees, using the fast facts and your own observations.

**TITLE:**  ________________________________

___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
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___________________________________________________________________________________
Trembling Aspen

FAST FACTS
- flat leafstalks cause the leaves to shake in even a slight breeze, giving this species its name.
- it is the most widespread tree in North America.
- the wood is used for many things including paper, matches, tongue depressors and ice cream sticks.
- it provides food for beaver and deer and shelter for cavity nesting birds.
- it frequently reproduces by suckers so each tree in a clump is a clone of the first one. This is why sometimes in the fall, you will see a clump of trees with yellow leaves while all the surrounding trees are still green.

THINGS TO TRY
- Guess how long the roots might be. look at the tree to the left of the control marker that has cream coloured bark This is a trembling aspen. How far to the left of it do you think this tree’s roots might go?

- Rub your hand along the tree trunk (or other aspen trunks nearby) and then rub your hand on your face. Look at each other. What do you see? Why do you think the aspens produce this?

- Rub your hand down the tree trunk until you feel a depression (an area that has sunk in.) Look carefully at the bark. Can you see any sign of animal activity here? What might have cause this depression?
Willans

For over 8,000 years people met their needs for food, water and shelter by using the resources in the Fish Creek valley.

One recent family was the Willans. Norman Willans, a ranch foreman for Patrick Burns built a ranch on this site in 1932 using the style of construction from the 1870’s. The Willans raised five children here in a very small house. Imagine what their lives were like compared to your life. In the left column, fill in details of your life. In the right column, fill in what life may have been like for children growing up in the 1930’s.

<table>
<thead>
<tr>
<th>Your Life</th>
<th>Willans Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chores:</td>
<td>Chores:</td>
</tr>
<tr>
<td>Clothes:</td>
<td>Clothes:</td>
</tr>
<tr>
<td>Entertainment:</td>
<td>Entertainment</td>
</tr>
</tbody>
</table>
ANSWER TO CONTROL MARKER #1 ACTIVITY

The alien invaders are weeds and garden flowers.

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

Who are alien invaders? The Weed Control Act of Alberta classifies 66 plants as weeds that must be controlled. Most of these arrived from Europe or Asia as contaminants in crop seed or as seeds in ships’ ballast. A few were brought to North America as garden ornamental plants.

Why are alien invaders a problem? The alien invaders create problems for both grain and livestock farmers. These weeds reduce the value of the grain crops. They take over pastures, destroying plants the cattle graze. Livestock will not eat plants like common toadflax. Other weeds, like leafy spurge, injure the cattle when eaten. In natural areas, the alien invaders take over, choking out the native plants. The co-evolved predators and parasites of the invasive plants, which would normally help keep populations in check, are not found in the new ecosystems. There is also a concern about invasive garden plants gaining a foothold in the Park. Some, such as delphinium and gout weed, can be very invasive. Seeds from these plants are transported into the Park by pets, birds, people and water.

How do alien invaders take over ecosystems? Alien invaders have reproductive patterns, adaptations and growth needs that enable them to survive adverse conditions. Many:

- are perennials: not annuals
- have deep roots enabling them to withstand drought
- reproduce by seeds AND new shoots from roots
- are allelopathic: produce chemicals that inhibit the growth and development of nearby species
- grow in dense clumps, robbing other plants of moisture and nutrients
- start growing early in the spring, using up the spring moisture and shading later growing species

What can you do to help control Alien Invaders?

- Do not pick wildflowers. They may in fact be invasive weeds. Picking them can spread seeds.
- Stay on designated trails. Do not walk through weeds. Seeds may stick to the bottom of your shoes and spread to new areas.
- Encourage family and friends to plant only non-invasive flower species.
- Learn more about Alien Invaders.
ORIENTEERING IN
FISH CREEK
PROVINCIAL PARK
Student Journal

LEADER’S COPY
WELCOME TO FISH CREEK PROVINCIAL PARK

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An animal finds a fruit rollup wrapper. Because the wrapper smells like food, the animal eats and becomes very sick, possibly dying.

**Put litter in garbage cans.**

In some areas, the plants are trampled and dying. Without the roots to hold it in place, soil is being eroded.

**Stay on the paved or gravel trails.**

Bones, arrowheads and nests are just a few of the important clues that show how people and animals have used this valley for thousands of years. Investigations are becoming difficult as the clues seem to be disappearing. There also seems to be fewer flowers.

**Everything, living and non-living, in the Park must stay in the Park. There is no picking, cutting or collecting permitted.**

Some of the wildlife species, including birds, are approaching too closely to Park visitors. They seem to want something from the people. These encounters sometimes have an unfortunate ending for the animal.

**Feeding the wildlife, including birds, is not allowed.**
Development Bordering the Park

Look down the gravel road at the road crossing Fish Creek. Imagine you were the engineer contracted to design the bridge. What things would you have to consider to be sure the bridge did not have negative impact on the creek or the wildlife and plants?

Spilled loads from vehicles could not fall into or be washed into the creek. Wildlife can safe access under the bridge and its approaches were fenced off to keep animals off the road. As much possible the bridge and approaches follow existing gaps in the forest or go over the top of it.

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Create a wetlands food chain. Put the pictures in the correct order by numbering each picture. Number 1 will be the organism at the bottom of the food chain.

4 frog  1 algae  5 garter snake  6 weasel
2 scud  3 dragonfly nymph  7 coyote

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Park visitors are expected to quietly watch the frogs. Handling, harassing, feeding or collecting them are strictly prohibited.

Even handling the frogs very gently can cause illness or death for these animals. What might be on a person’s hands and how would this hurt the frogs?

Hands even just lightly contaminated with perspiration, sunscreen or insect repellent pass those chemicals onto the amphibians’ skin. Amphibians have very thin, porous skin that absorbs and passes through to their internal body systems water and air and chemicals on the skin can mix with the water to enter the body.
Wired Tree

Notice this tree has its trunk wrapped with wire. This is to prevent beaver from chewing the trunk. Beaver need the branches on the tree for both food and building materials. Why do you think we are preventing the animal from using this tree? (Hint: think about the location of the tree.)

As it was falling, the tree may hurt a Park visitor or damage the bridge.

Imagine how this area would look if there were beaver active in the area. A dam stretching across the creek would create a large pond behind. Many of the deciduous trees (those with broad leaves) would be cut down. There may even be canals dug by the beaver to access more trees. How would these changes benefit plants, trees and other animal species? (Hint: remember all living things need food, water, shelter and space.)

Changes in water would …………

Provide the deeper, cooler water that may fish species need. This would benefit species that eat fish and their eggs and minnows.

Changes in amount of sunlight reaching the forest floor would………..

Provide enough light for many more, different plant and tree species to grow.

Changes in soil would …………

Allow more plants to grow because the decaying wood releases nutrients into the soil, enriching it.
Wild Rose Bushes

Stand beside the trail and look towards the creek. Notice the bushes with thorns on the branches. These are wild roses. In 1930, schoolchildren selected this to be the provincial flower of Alberta. This common bush flourishes on dry slopes, open woods, roadsides and river banks. Its bright pink flowers are a common sight in May and June.

THINGS TO TRY

- **How many oranges can you see?** No, oranges don’t grow in the Park but the red berries (called rosehips) from the rose bushes are rich in vitamin C, just like oranges. In fact, just three little rosehips contain as much vitamin C as one whole orange. Can you find any rosehips on the bushes? Count the rosehips and divide by 3 to discover how much vitamin C is on the rose bushes.

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Natives and settlers had many uses for the rose bush. Match the rose part with a way you think it might have been used. Parts may have more than one use.

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- inner bark

  - salads
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  - smoking
  - tea
  - perfume/dries sachet
  - jam, jelly, syrup
Pick up a fallen needle from the ground at the control marker. Look at it closely. The needle is square: it has four sides. You can use needle shapes and growth patterns to identify evergreens.

- square - spruce

- flat - fir

- pairs or pie - pine

As you are standing on the hilltop, look around at the difference in vegetation. One side of the hill is a dry, grassy slope. The other side is a cool, moist spruce forest. Which side is facing north?

*The side where the spruce forest is growing is north.*

Explain the reasons for your decision.

*Spruce trees, like most evergreens, require moist growing conditions. A north facing slope receives less sunlight than a south facing slope so the temperatures are cooler. Less water evaporates.*
Flood Impact

Stand at least 1 metre back from the edge of the creek.

Look upstream. Draw the creek and its banks.

Look downstream. Draw the creek and its banks.

Compare the two areas. List the major differences you see.

What do you think caused these differences?

Many of the changes, including the large gravel bars, eroded hillside and fallen trees, are a result of the 3 floods that came in June, 2005.

Why did you have to stand well back from the edge of the creek?

The force of the flooding creek eroded the banks from underneath. The weight of people standing on the undercut bank may cause it to collapse, spilling the people onto the rocks and into the water.
Balsam Poplar

**FAST FACTS:**
- the bark is smooth, greenish-grey when the tree is young. The bark darkens and becomes rough and furrowed as the tree ages.
- the leaf stems are rounded.
- the egg-shaped leaves are dark, shiny green on top, whitish green underneath.
- the resin covering the buds has a strong sweet smell.
- nuthatches and chickadees find insects in the bark cervices. Woodpeckers drill into older wood looking for insect larvae.

Write a poem about these trees, using the fast facts and your own observations.

**TITLE:** ________________________________

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Trembling Aspen

FAST FACTS
- flat leafstalks cause the leaves to shake in even a slight breeze, giving this species its name.
- it is the most widespread tree in North America.
- the wood is used for many things including paper, matches, tongue depressors and ice cream sticks.
- it provides food for beaver and deer and shelter for cavity nesting birds.
- it frequently reproduces by suckers so each tree in a clump is a clone of the first one. This is why sometimes in the fall, you will see a clump of trees with yellow leaves while all the surrounding trees are still green.

THINGS TO TRY
- Guess how long the roots might be. Look at the tree to the left of the control marker that has cream coloured bark. This is a trembling aspen. How far to the left of it do you think this tree’s roots might go?

The roots may extend as far the evergreen tree next to the trail to the left of the aspen.

- Rub your hand along the tree trunk (or other aspen trunks nearby) and then rub your hand on your face. Look at each other. What do you see? Why do you think the aspens produce this?

The greenish-white powder is produced by the tree to protect its thin bark from the sun’s burning, drying rays.

- Rub your hand down the tree trunk until you feel a depression (an area that has sunk in.) Look carefully at the bark. Can you see any sign of animal activity here? No. What might have cause this depression?

Disease. This is hypoxylon canker: a very common disease in aspens that is caused by a fungus. The wood is rotting and within 5 years the tree will probably blow over in a strong wind, the trunk breaking at the point weakened by the canker.
Willans

For over 8,000 years people met their needs for food, water and shelter by using the resources in the Fish Creek valley.

One recent family was the Willans. Norman Willans, a ranch foreman for Patrick Burns built a ranch on this site in 1932 using the style of construction from the 1870’s. The Willans raised five children here in a very small house. Imagine what their lives were like compared to your life. In the left column, fill in details of your life. In the right column, fill in what life may have been like for children growing up in the 1930’s.

<table>
<thead>
<tr>
<th>Your Life</th>
<th>Willans Children</th>
</tr>
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<tbody>
<tr>
<td>Chores:</td>
<td>Chores:</td>
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<td>Clothes:</td>
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<tr>
<td>Entertainment:</td>
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</tbody>
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ANSWER TO CONTROL MARKER #1 ACTIVITY

The alien invaders are weeds and garden flowers.

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

Who are alien invaders? The Weed Control Act of Alberta classifies 66 plants as weeds that must be controlled. Most of these arrived from Europe or Asia as contaminants in crop seed or as seeds in ships’ ballast. A few were brought to North America as garden ornamental plants.

Why are alien invaders a problem? The alien invaders create problems for both grain and livestock farmers. These weeds reduce the value of the grain crops. They take over pastures, destroying plants the cattle graze. Livestock will not eat plants like common toadflax. Other weeds, like leafy spurge, injure the cattle when eaten. In natural areas, the alien invaders take over, choking out the native plants. The co-evolved predators and parasites of the invasive plants, which would normally help keep populations in check, are not found in the new ecosystems. There is also a concern about invasive garden plants gaining a foothold in the Park. Some, such as delphinium and gout weed, can be very invasive. Seeds from these plants are transported in to the Park by pets, birds, people and water.

How do alien invaders take over ecosystems? Alien invaders have reproductive patterns, adaptations and growth needs that enable them to survive adverse conditions. Many:
- are perennials: not annuals
- have deep roots enabling them to withstand drought
- reproduce by seeds AND new shoots from roots
- are allelopathic: produce chemicals that inhibit the growth and development of nearby species
- grow in dense clumps, robbing other plants of moisture and nutrients
- start growing early in the spring, using up the spring moisture and shading later growing species

What can you do to help control Alien Invaders?
- Do not pick wildflowers. They may in fact be invasive weeds. Picking them can spread the seeds.
- Stay on designated trails. Do not walk through weeds. Seeds may stick to the bottom of your shoes and spread to new areas.
- Encourage family and friends to plant only non-invasive flower species.
- Learn more about Alien Invaders.
FISH CREEK PROVINCIAL PARK

Provincial parks exist to protect significant natural, historical and cultural features and to provide recreational opportunities to enjoy these features.

Alberta’s parks are protected by the Alberta Parks Act to help keep them healthy and vibrant.

Do not feed or disturb wildlife. Feeding wildlife, including birds, is not necessary and is potentially dangerous. Quietly observe all wildlife from a comfortable distance.

Leave only footprints. Everything in the Park – living and non-living – is protected to help preserve the complex living system that thrives in Fish Creek Provincial Park. Leave everything as it is found.

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.

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.

Speed limit in the Park is 30 km/hour.

SAFETY TIPS

STAY ON THE OFFICIAL PARK TRAILS: those with a paved or shale surface. All the control markers are visible from these trails.

Send Orienteering participants onto the course in groups no smaller than 3 people. If there is an accident, this leaves someone with the injured person while the third person goes for help.

Watch carefully for hazards such as uneven ground, holes, tree roots and stumps. Around the creek, watch for eroded banks and thin ice.

Avoid touching stinging nettle. This plant can cause a skin irritation that may last several hours.

CONTROL CARD

1. Junction of roads.
2. Edge of clearing.
3. Top of curve.
4. Trail junction.
5. End of culvert.
7. Trail junction.
8. Top of hill.
10. Flynn memorial.
11. Creek side of trail.
12. Fence.
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