



**Fish Creek Provincial Park**

# HIDDEN WORLDS

A teacher conducted field study science program  
for Kindergarten students.



*Fish Creek Environmental Learning Centre*

(403) 297-7827

[www.fish-creek.org](http://www.fish-creek.org)



**Alberta**

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# **HIDDEN WORLDS**

**A teacher conducted field study science program  
for Kindergarten students.**

**This curriculum connected field study was developed to support the  
specific requirements in the Alberta Learning's Kindergarten  
Program statement and the mandates of Alberta Parks Service.**

**Developed by:**

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## 1.0 INTRODUCTION

Welcome to **HIDDEN WORLDS**, a teacher-conducted science program for kindergarten students.

This is a curriculum connected half-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 the kindergarten program statement as set out by Alberta Learning and also reflects 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

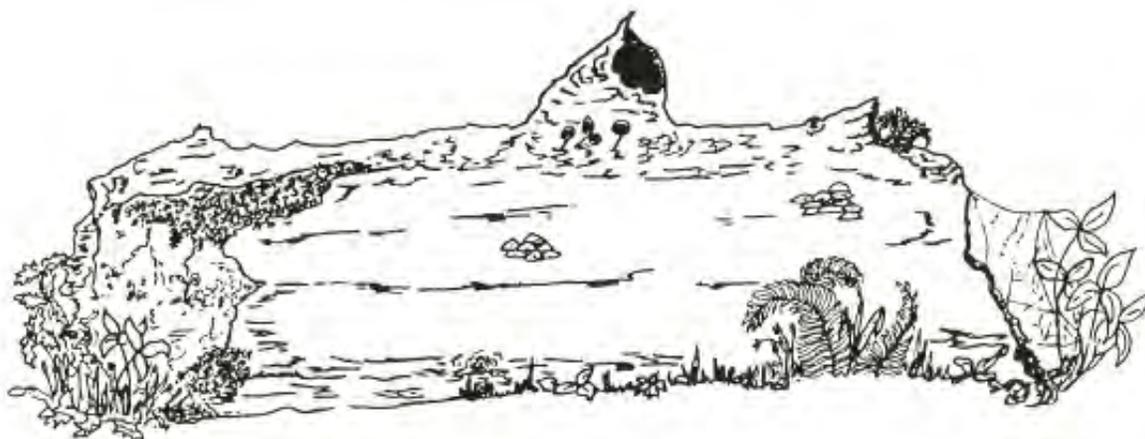
Welcome to **HIDDEN WORLDS**, a teacher-conducted kindergarten program focusing on the “hidden worlds” of insects and other invertebrates.

HIDDEN WORLDS program contains six activities that help young students investigate nature to learn about some of the creatures that are often overlooked because they are hiding. Students will discover these creatures on, in and under natural objects, using a variety of shapes, colours and movements to avoid predators. Teachers are encouraged to select the activities that best fit their lesson plans and the skill levels of their students. Teachers may choose to substitute their own ideas in place of some of the suggested activities.

Ideas for preparatory and post field study activities are included in this package. We strongly recommend teachers do some of each type to maximize the value of the field study.

The program includes a Student Journal, with a page for each activity. To limit dependency on reading and printing skills, the journal is primarily graphic in nature. Use of the Journal is **OPTIONAL**. We encourage use of the Journal as a post field trip activity so, while at the Park, the students can concentrate on their outdoor learning and discoveries.

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





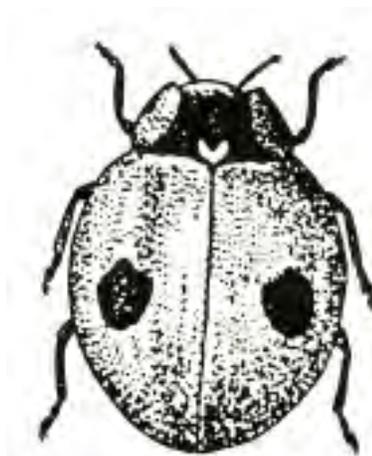
## 1.2 PROGRAM OBJECTIVES AND CURRICULUM FIT

This field study program, and the school based preparatory/post activities that complement it, have been designed to address six specific learner expectations from the **Community and Environmental Awareness Area** in the Kindergarten Program Statement:

- explores and investigates objects and events in the environment
- demonstrates awareness of the properties of objects and events in the environment by:
  - sorting objects according to common properties e.g. colour, size, shape
  - arranging objects or events in logical order
  - matching objects or events as being the same or as going together
  - distinguishing between similar objects, based on one or more characteristics
- identifies familiar shapes in the environment
- becomes aware of the importance of protecting the environment
- shows awareness of similarities and differences in living things, objects and materials
- describes a variety of homes e.g. for people, animals, birds

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 Community and Environmental Awareness based field study, but there are many other curriculum connections with the kindergarten program of studies.

### *LANGUAGE ARTS*

- experiments with pictures, diagrams, symbols, letters, words or phrases as a means of representing ideas or experiences
- begins to contribute ideas and opinions to a discussion
- questions or responds to others in collaborative learning settings

### *MATH*

- recognizes spatial relationships: inside, outside, in front of, behind, on, under, up, down, here, there, over, above, below, between, near
- drawing pictures and diagrams
- collect and use information
- compares objects using the terms big, small, long, heavy, light, hot, cold

### *PERSONAL AND SOCIAL RESPONSIBILITY*

- works cooperatively with partner or group
- takes turns in activities and discussions

### *PHYSICAL SKILLS AND WELL-BEING*

- observes safety rules
- participates in physical activity

### *CREATIVE AND CULTURAL EXPRESSION*

- uses shapes and colours in original artwork
- explores some familiar materials in new ways





## 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 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.

### 2.1 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.
2. Some equipment for the activities will be available at the Park. It is your responsibility to count all equipment and return it at the end of the your visit. Lost or broken equipment must be paid for.
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 15 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 break or inclement weather. No teacher preparation is required. All activities have written instructions and the correct answers where required.



## 2.2 SNACK/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 "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 go 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 SNACK/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 fire pit. Call 297-7827 to reserve.

**When using a fire pit 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.
- **DO NOT FEED OR DISTURB WILDLIFE**
- remind students to clean up the fire pit area of garbage and left over 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 they 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:
  - Dress in layers: it will be cooler at the Park than at your school.
  - There is nowhere to buy anything here so bring plenty to eat and drink.
- Complete some preparatory activities: either the ones in the next section of this package or some of your own.

#### PREPARE THE ADULTS

- Recommended ratio is 1 adult per 5 students: minimum is 3 adults per class including teacher.
- Review the Park rules (explained on page 10).
- Emphasis the following:
  - Dress in layers: it will be cooler at the Park than at your school.
  - There is nowhere to buy anything here, including **COFFEE**.
- The adults' role is to lead the activities with the same small group of students all day. Photocopy the activity instructions (make extras) and send them to the volunteers several days before the field study so they can become familiar with the activities.
- If you want your students to complete the Student Journals at school, ask your volunteers to make notes on the activity instruction pages about the students' discoveries to assist the students back at school with their Journal work. Collect these at the end of your Park visit.

#### BRING

- A cheque made payable to **Minister of Finance** for \$1.50 per student for half day visit: \$3.00 per student if you are staying over lunchtime (no charge for adults).
- Trail map for each adult (long map wrapped around teacher package).
- Student booklets and crayons if you want the students to work on their Student Journals at the Park.



### 3.1 PLANNING THE ITINERARY FOR THE FIELD STUDY

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.

**TIME      ACTIVITY**

- \_\_\_\_\_ Depart from school.
- \_\_\_\_\_ Arrive at Fish Creek Provincial Park and settle into classroom.
- \_\_\_\_\_ Participate in a class orientation meeting with a Park staff person.
- \_\_\_\_\_ Teacher and volunteer led program activities.

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

**ACTIVITY                      EQUIPMENT/MATERIALS**

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- \_\_\_\_\_ Gather together, inventory and return any equipment borrowed from the Park.
- \_\_\_\_\_ Gather personal belongings together and travel back to school.
- \_\_\_\_\_ Arrive back at school.

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## 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 ACTIVITY IDEAS

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

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

Select activities in addition to the ones described in this package that reflect each specific learner outcome from the Program Statement that will be addressed during the field study. (*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 VOCABULARY

**adaptation**: a special body part or way of behaving that helps a plant or animal to survive (live) where it does. e.g. Body Parts - grasshopper's strong, long back legs help to jump very well to escape danger. Behaviour - ladybird beetles hibernate (sleep) through the winter to avoid freezing cold temperatures.

**camouflage**: body colourings, markings or shape that help an animal hide from its predators.

**predator**: a creature that eats other creatures. Some birds are predators of insects.





## 5.2 INSECTS AND NON-INSECTS

Use a picture of an insect and a picture of a spider to help the students understand and learn the following information.

An insect is a creature that has 3 distinct body parts (head, thorax, abdomen), 3 pairs of legs attached to the thorax and a pair of antenna at some time during its life. Not all insects have wings.

A spider is an animal that has 2 body parts (head and abdomen), 4 pairs of legs and no antennae. Not all spiders spin webs.

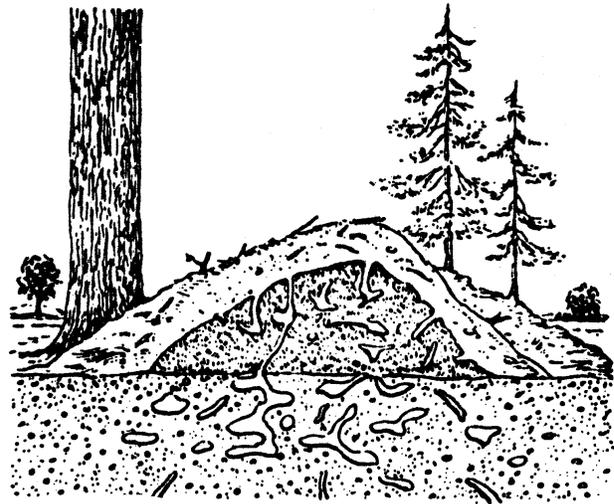
Provide the students with an opportunity to sort objects according to the above common properties by giving them pictures to group into insects and non-insects or by giving the students time in the schoolyard to capture small creatures and group them.

## 5.3 MAGNIFYING GLASSES

The Centre will be providing a magnifying glass for each student so they can distinguish the physical characteristics of the very small creatures they will be finding. To enhance the success of these activities, ensure the students know how to correctly use a magnifying glass and allow them some classtime to practise.

## 5.4 ANTHILLS

One of the on-site activities teaches the children about forest ants and their anthills. These are quite different than the anthills found in gardens and playgrounds. If possible, show your students an anthill in the school grounds or nearby playground. Discuss the size, shape and materials the hill is made with. Look for entrance holes and allow the students time to watch the ants' activities. Students will then be prepared to, at the Park, compare the two types of anthills and distinguish between them, based on one or more characteristics.

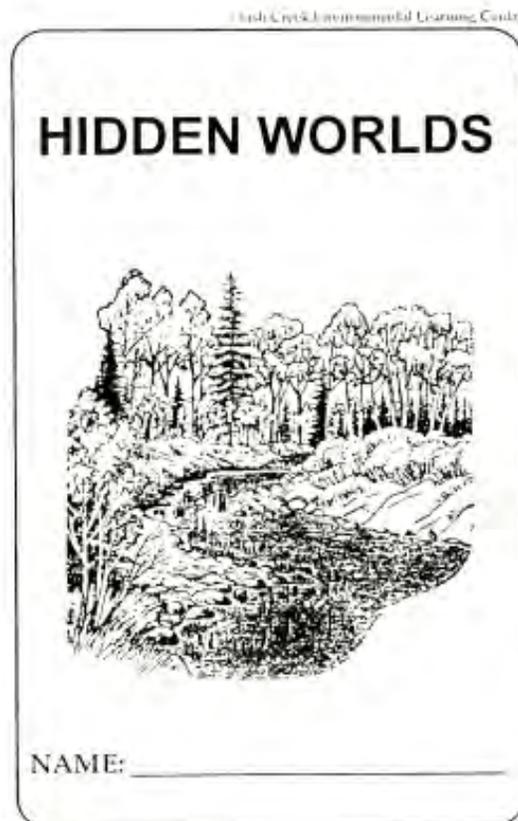




## 5.5 STUDENT JOURNALS

The Student Journal is an **OPTIONAL** method the students and parent volunteers can use to record and reflect on what they are learning during the field trip. We recommend students complete the journal as a post field study activity, rather than working on them while at the park. This method maximizes the students' time for exploration and discovery rather than drawing. If you wish to use the journals in this way, we suggest you make a copy for each adult volunteer. Ask them to record the information during the field study. Use these as a reference to aid students' recollections as they complete their own journals in the school classroom after the field study.

Photocopy the pages back to back as given in this program package. Place the cover page over page 3, fold in half across its width so the cover page is visible. Staple at the centre fold. Suggestions for completing pages 2 through 7 are listed under each field study activity description. Suggestions for completing page 8 are listed in the post field study activity section of this package.



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## 6.0 FIELD STUDY ACTIVITY DESCRIPTIONS

### 6.1 INSECT LASSO

**Objective:** Students will demonstrate awareness of similarities and differences in living things and an awareness of the properties of objects by sorting objects according to properties.

**Time:** 10 - 15 minutes

**Equipment provided by the Centre:**

- 1 rope lasso per group
- 1 bugkeeper per group
- 1 magnifying glass per student

**Equipment provided by the school:**

- Student Journal(s), pencil(s), clipboard(s)

**Setting:** grasslands

**Activity Description:**

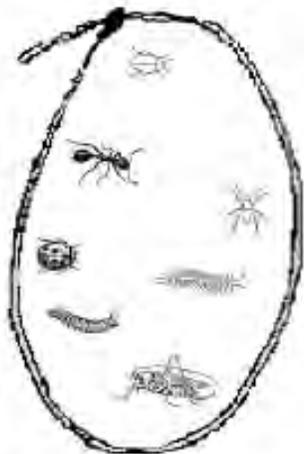
1. Move your group to a grassland area and spread the rope lasso in a circle on the ground.
2. Gather the students around the outside of the lasso and ask them to look for insects flying over the grass or crawling on the tops of the grass.
3. After a few minutes of observing the more obvious, introduce the program theme of “hidden world”. Explain that while we may easily see some small creatures, such as insects and spiders, there are millions more living in their “hidden worlds”. To discover these creatures, the students will need to find each of the “hidden worlds” and then look very carefully to discover who lives there.
4. Ask the students to look at the grass inside the lasso. What part of the grass is hard to see? The bottom of each blade of grass is hiding. The ground is also hard to see. This hidden world is home to many different kinds of small creatures.
5. Have the students reach inside the lasso and gently move the grass blades to observe anything clinging to the bottom of the grass blades or moving on the ground. Place the small creatures in the bugkeeper for a closer look. (Use a piece of paper to scoop up the creatures: that way you don't hurt them.)



## 6.2 SHRUB SHAKE

6. Have the students use their magnifying glasses to better see each small creature they find. Discuss characteristics of each creature:
  - number of legs
  - number of body parts
  - antenna
  - colour
  - wings
  - body shape
7. Review with the students that all insects have 6 legs, 3 body parts and a pair of antenna at some time in their life cycle. Therefore, some of the creatures they find are insects and some, such as spiders, are not. Have the students sort the creatures by deciding whether each creature they found is an insect or not.

To complete journal page 2, have the students circle the small creatures they found in the lasso. Print an "I" beside each one that is an insect. If they found something that is not pictured, they could draw it in.



**Objective:** Students will identify familiar shapes in the environment and show an awareness of similarities and differences in living things.

**Time:** 10 - 15 minutes

**Equipment provided by the Centre:**

- 1 plastic sheet per group
- 1 bugkeeper per group
- 1 magnifying glass per student

**Equipment provided by the school:**

- student journals, pencils, clipboards

**Setting:** grasslands

**Activity Description:**

1. Move your group to a small shrub in the grasslands area and have the students look for small creatures on the bark and leaves. Can they find any?
2. Explain that many of the small creatures on the shrub are small and coloured to match the shrub so they can hide from animals that will eat them.
3. Place the plastic sheet on the ground around the bottom of the shrub. Ask the students to squat or kneel around the plastic sheet and watch carefully for small creatures that drop off the shrub as you GENTLY shake it.



### 6.3 UNDER

4. Have the students use their magnifying glasses to better see each small creature they find. What colours are the creatures? Do they all match colours found on the bush? Some, such as ladybird beetles (ladybugs), may be brightly coloured. Explain to the students that these bright colours are a warning to predators. The predators should stay away because this creature can defend itself by stinging, bad smell or bad taste.
5. Explain to the students that the small creatures also use shape to help them hide. Some of the creatures are shaped like natural objects to confuse their predators. Have the students look carefully at the shape of the creatures on the plastic sheet. Can they find any that are shaped like twigs, buds or leaves? Are they round, oval, square or rectangular?
6. Ask the students to compare these creatures to those found in the lasso. Are any of them the same or are they all different?

To complete journal page 3, students can finish the creatures by adding legs, wings and/or antennae to the shapes pictured. Underline the ones that look like creatures found on the plastic sheet.

**Objective:** Students will demonstrate an awareness of the properties of objects in the environment by distinguishing between similar objects.

**Time:** 10 - 15 minutes

**Equipment provided by the Centre:**

- 1 bugkeeper per group
- 1 magnifying glass per student

**Equipment provided by the school:**

student journals, pencils, clipboards

**Setting:**

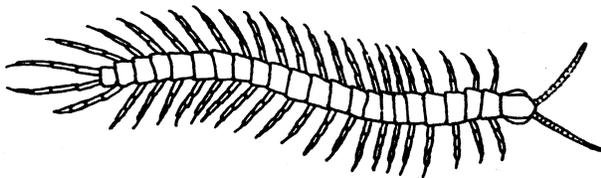
anywhere

**Activity Description:**

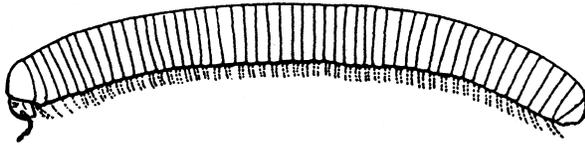
1. Move your group to an area where there is a variety of natural objects, such as branches, logs, bark, leaves or rocks, lying on the ground. Have everyone sit or squat around the object and watch carefully as you lift the object up and move it away.
2. What creatures live in the “hidden world” of under? Students should use their magnifying glasses to examine the insects, millipedes, centipedes, earthworms, slugs or spiders they may find.



3. For each of the creatures found, discuss the physical appearance (colour, shape, number of legs and body parts) and the behaviour (feeding, resting, trying to escape the light by running away or curling up).



centipede



millipede

4. Show the students the pictures of a millipede and a centipede if they find any. Explain that these two creatures look very similar. Can the students, using careful observation, find the differences? (Millipedes have 2 pairs of short legs on most body segments: centipedes have only 1 pair of legs on each body segment. Millipedes have 7 segmented antennae: centipedes have 14 segmented antennae).

5. Look under several different types of objects for a variety of creatures. Each time remember to **GENTLY RETURN THE OBJECT TO ITS ORIGINAL POSITION**. The creatures need the “roof” to their “home” back.

6. Ask the students to compare these creatures to those the students found living in the hidden world of “among the grass blades” or the hidden world of “on the shrub”. Are they exactly the same? (No, even ones that seem similar are different species, for example ants). Why are there different creatures in different places? (Different creatures require different conditions to meet their basic needs for food, shelter, water and space. The creatures living “under” need more moisture and less light than those creatures found in the grass or on the shrub).

To complete journal page 4, have the students find the 6 millipedes in the picture. Don't be fooled by the 1 centipede that is in the picture too.



## 6.4 CONE CREATURES

**Objective:** Students will explore and investigate objects in the environment and describe a variety of homes for animals.

**Time:** 15 - 20 minutes

**Equipment provided by the Centre:**

- 1 white plastic sheet per group
- 1 magnifying glass per student

**Equipment provided by the school:**

- student journals, pencils, clipboards

**Setting:** evergreen forest

**Activity Description:**

1. Move your group to an area where there are cones from the evergreen trees lying on the ground. Spread out the white plastic sheet.
2. Ask the students to gather some cones and place them on the sheet.
3. Tell the students that the inside of the cone is the next hidden world they are going to explore for creatures. Ask the students for ideas and opinions about what may be living inside the cone. What colours might the creatures be? How big are they? Why are they living inside the cone?
4. Explain to the students that tearing apart the cone not only destroys the creatures' home: it may also hurt some of the creatures. The way to discover what lives inside the hidden world of cones is to encourage the creatures to come out by gently banging the cone on the plastic sheet.
5. Have the students gather around the sheet, give each child a cone and then show them how to GENTLY bang it on the sheet. Bang once, look at any creatures that emerge, then bang again to dislodge any others that may be still inside. Remind the students that the creatures will be very small and may move quickly.
6. Have the students try to find their own "cone creatures". If, after several tries, nothing emerges, give the student a different cone. May be no one is "home" in the first one!
7. As a group, discuss the creatures that come out of the cones. How many different kinds of creatures did the group discover?

To complete journal page 5, have the students draw their "cone creatures".





## 6.5 TREE TRUNK TALES

**Objective:** Students will explore and investigate objects in the environment and describe a variety of homes for animals.

**Time:** 15 - 20 minutes

**Equipment provided by the Centre:**

- 1 white plastic sheet per group
- 1 magnifying glass per student

**Equipment provided by the school:**

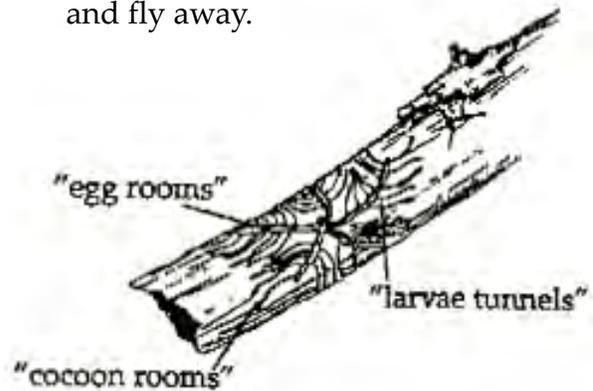
- student journals, pencils, clipboards

**Setting:** forest

**Activity Description:**

1. Have the students use their magnifying glasses to aid their investigations of various tree trunks. What can they find in the hidden world of bark cracks and spaces? Again, encourage sharing of discoveries and discussion of colours and shapes. How are these creatures protecting themselves from hungry birds?
2. Find a tree trunk with missing bark that reveals the tunnels of bark beetles. Show the students the very "hidden world" under the bark. Explain that the adult female bores a hole through the bark and crawls under the bark. She digs a tunnel in the surface of the wood, laying her eggs in little "rooms" off the tunnel

as she goes along. The eggs hatch into larvae (worm-like stage of insect development). These larvae eat their own tunnels through the wood, the tunnels getting larger as the larvae grow. The larvae finally chew a chamber (room) where they form a cocoon. When they come out of the cocoon, they are adult bark beetles. They bore their way through the bark and fly away.



3. Show the students the above labeled pictures of the bark beetle tunnels. Challenge the students to carefully look at the tunnels in the tree trunk to find each of the following:

- "egg rooms"
- "larvae tunnels"
- "cocoon rooms"

To complete journal page 6, have the students draw the tunnels they saw.



## 6.6 ANTHILLS

**Objective:** Students will explore and investigate objects in the environment, distinguish between similar objects, based on one or more characteristics and describe a variety of animal homes.

**Time:** 15 - 20 minutes

**Equipment provided by the Centre:** none

**Equipment provided by the school:**  
student journals, pencils, clipboards

**Setting:** evergreen forest

### **Activity Description:**

1. Complete this activity whenever your group discovers an anthill. If, by the end of your walk, your group has not noticed an anthill, move them to one as directed by Park staff or the teacher.
2. Allow the students several minutes to observe and comment on the anthill's size (very large) and the number of ants they can see (hundreds).
3. When the students initial excitement has died down a bit, explain that these kinds of ants, living in the forest, build a different kind of home than those ants found in our gardens and playgrounds. Ask the students to think about anthills they have seen in the playground or in their yards and compare those anthills to the one

they are looking at now. Discussion points should include the following:

shape:

forest ants: dome shaped hill

garden ants: flat or hill

size:

forest ants: very large hill

garden ants: small hill if any

materials used:

forest ants: needles, twigs, other bits of plants/trees

garden ants: soil

4. Focus the discussion now on similarities. Both types of anthills have many entrances and tunnels and chambers that go far underground. Inside these hidden worlds, the queen ants are laying eggs. The worker ants are cleaning, feeding the queen, taking care of the young and defending the colony from danger.
5. Give the students time to look carefully for signs that those activities are occurring inside the anthill. Things the students may see include:
  - food being carried into the anthill
  - "garbage" being carried out of the anthill
  - ants repairing the anthill

To complete journal page 7, students can add an anthill to the forest and to the school yard. Each anthill should be different shape and size but remind the students both anthills have many entrances.



## 7.0 POST FIELD STUDY ACTIVITY IDEAS

The following post visit activities will assist in summarizing the program and conclude the on-site visit to the Park. We recommend that you conduct these or your own activities with the students in the week after your Park visit.

### 7.1 STUDENT JOURNALS

Distribute the student journals and explain, page by page, what the students could draw. Use the adult journals as references if the students require some assistance. Page 8 provides space for the students to draw each of the 6 “hidden worlds” they investigated or their favourite creature in each of those areas.

Invite the students to share their completed journals with their classmates either verbally during a sharing circle or by adding them to the class “library” so others could look at them any time.

### 7.2 SAME AND DIFFERENT

Take the students out in the school yard to investigate “hidden worlds” there. They know the ants are different than the ones in the Park but what about the creatures of the grass, the shrubs and “under”? What “hidden worlds” can the students find in the school yard that were not investigated at the Park? What creatures live in those places?

### 7.3 WHY ARE THEY IMPORTANT?

Have a class discussion about the importance of the small creatures. How do they help plants and other animals? What might happen if all the insects and other small creatures disappeared? Insects pollinate plants, provide items for human use, such as silk and honey, are an important food source for other animals and can be pleasant to listen to and watch. Other small creatures are important because they help dead plants decompose (fall apart), adding important things such as minerals back into the soil to help new plants grow.

### 7.4 CREATURE CREATIONS

At the craft centre, set out items such as toilet paper tubes, egg cartons, walnut shells (if no one has nut allergies), toothpicks, pipe cleaners and felt markers. Have the students create their own special insects. Do the students remember how many body parts and how many legs insects have?



## 8.0 NOTES

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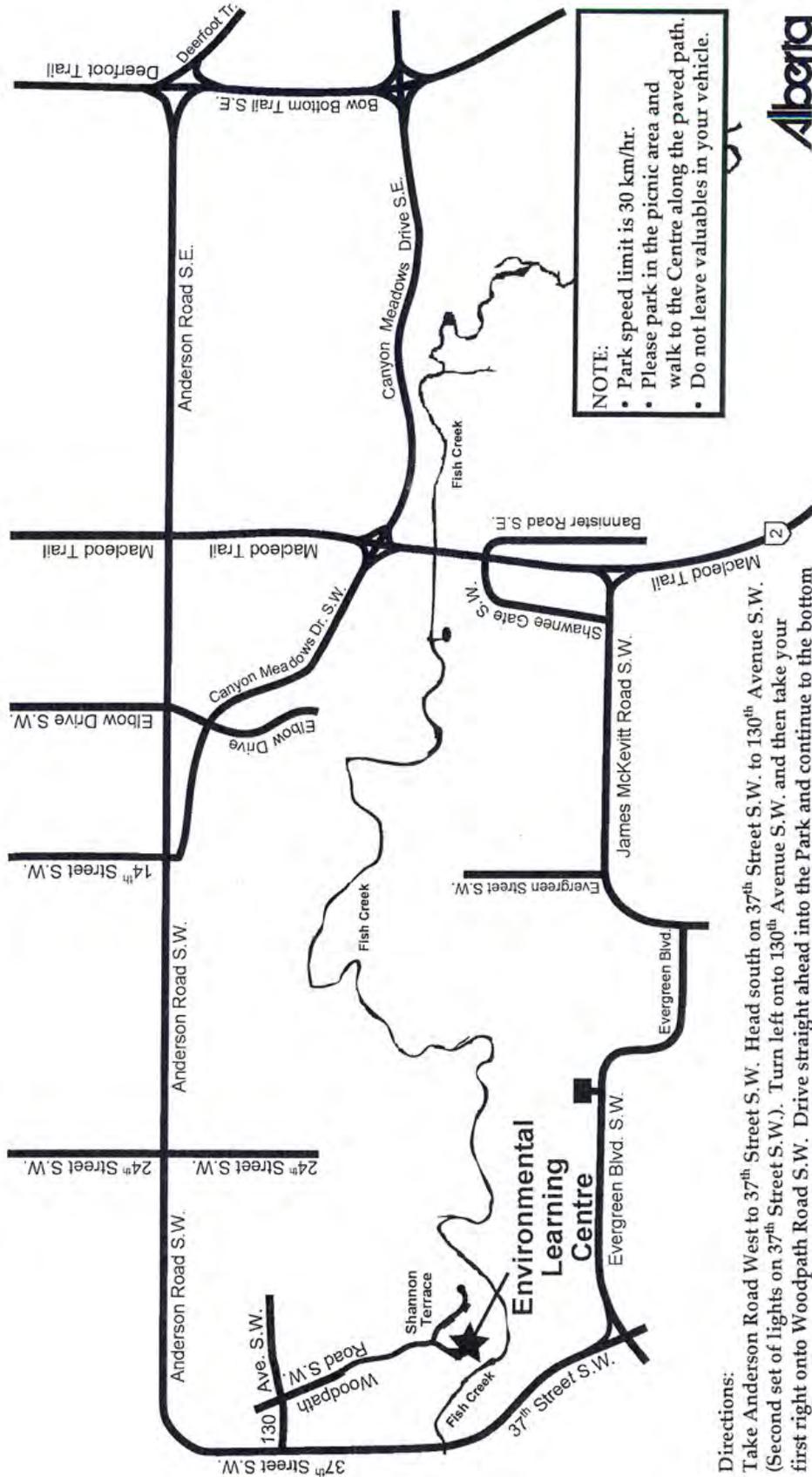


# ACCESS MAP - Fish Creek Environmental Learning Centre

13931 Woodpath Road S.W., Calgary, Alberta T2W 5R6

Phone: (403) 297-7827 Fax: (403) 297-7849

[www.fish-creek.org](http://www.fish-creek.org)



### Directions:

Take Anderson Road West to 37<sup>th</sup> Street S.W. Head south on 37<sup>th</sup> Street S.W. to 130<sup>th</sup> Avenue S.W. (Second set of lights on 37<sup>th</sup> Street S.W.). Turn left onto 130<sup>th</sup> 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).

**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.



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# Hidden Worlds of Fish Creek Provincial Park



# Hidden Worlds

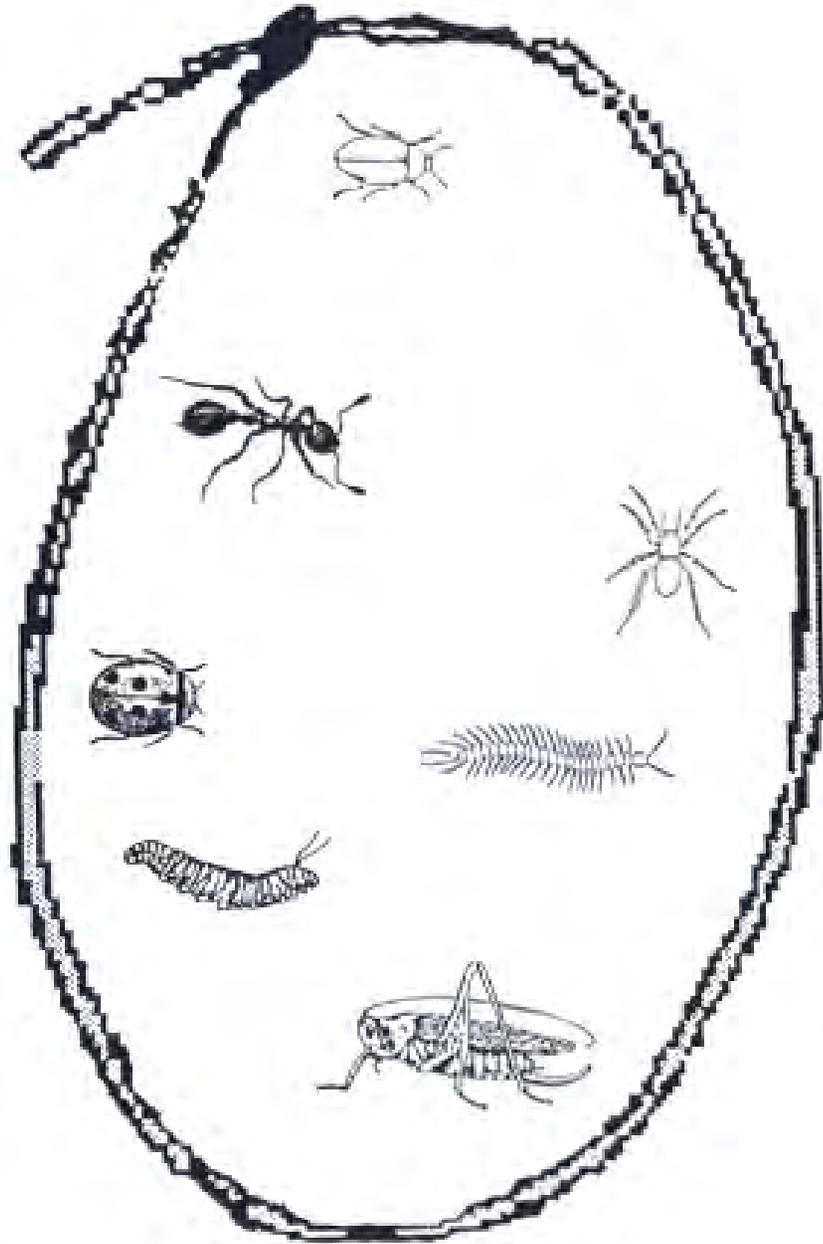


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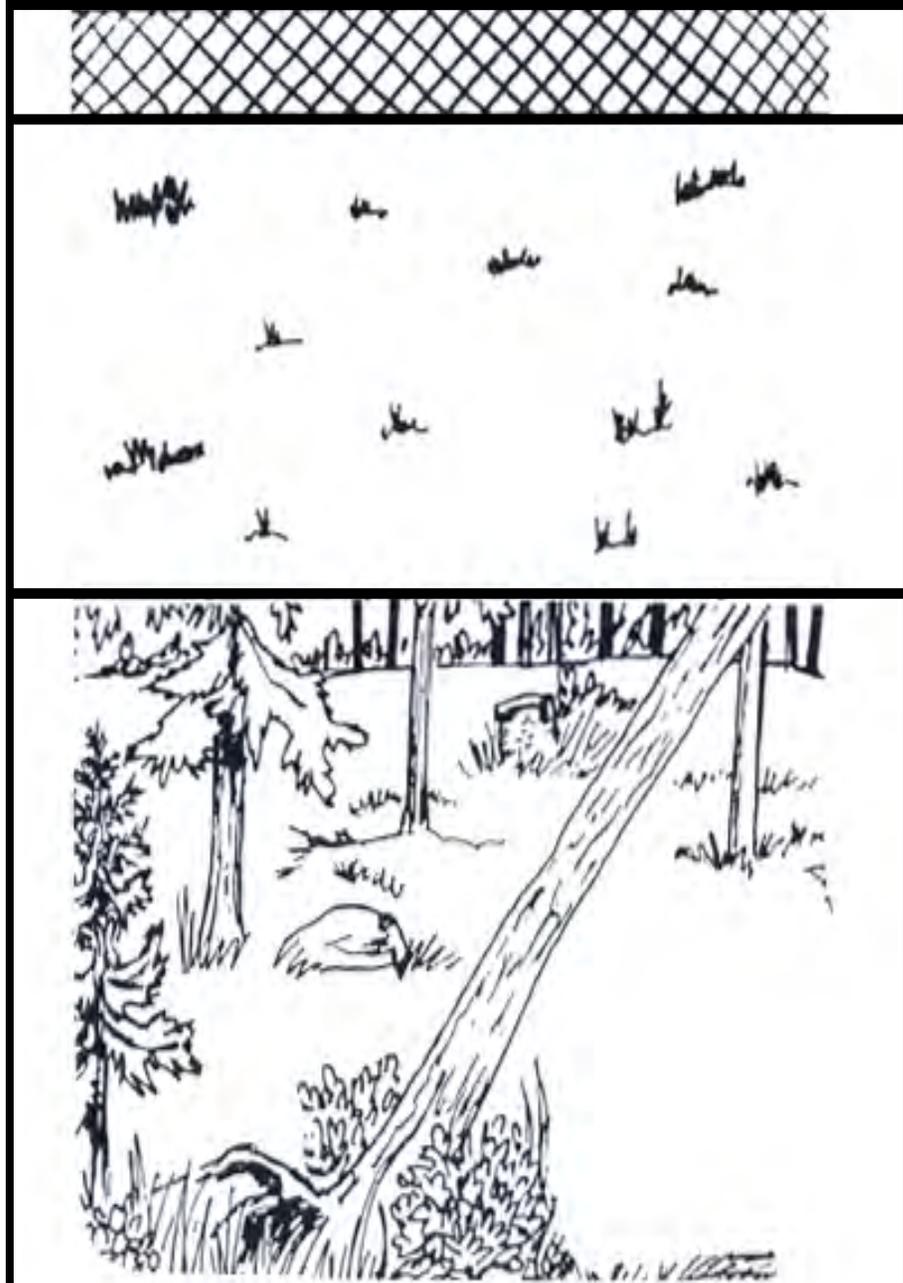
# Insect Lasso



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# Anthills



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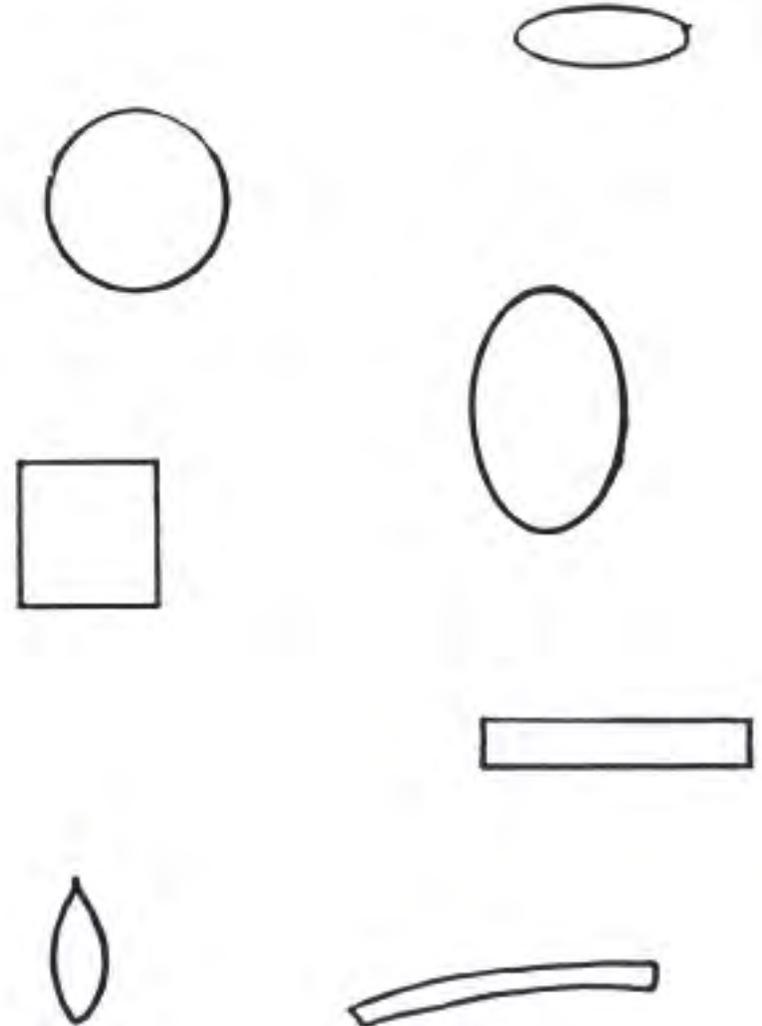


# Tree Trunks Tales

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# Shrub Shake

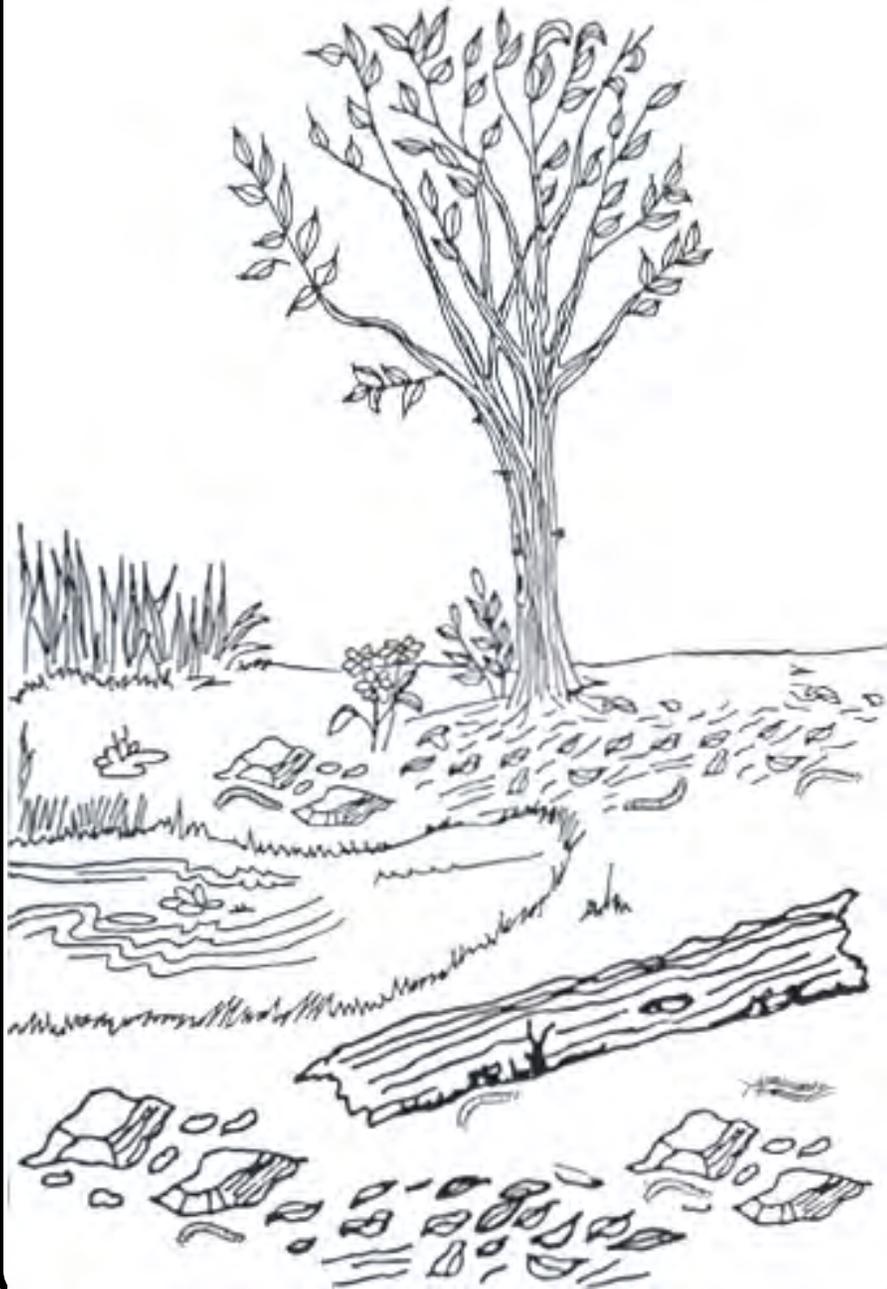


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## Under



## Cone Creatures



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