

**PARKS AND PROTECTED AREAS**

**IT REMAINS TO BE SEEN:  
A LOOK AT ANIMAL SIGNS**



**ACTIVITY BOOKLET**

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**Alberta**  
COMMUNITY DEVELOPMENT

*Kananaskis Country*



Welcome to a world of mystery and intrigue, of tracks and traces, of clues left behind by creatures you often do not see - a world of animal signs.

Often when we visit an area, we leave evidence or signs of our own passing—a footprint here, a broken twig there. Animals that call this area home also leave clues or signs—chewed leaves and branches, nests, webs, scats (droppings), fur, feathers and tracks.

The activities found in this booklet will take you on some explorations of animals and their signs. Glance through the booklet before you start, and choose the activities which interest you. They do not have to be done in order.

Two booklets are included in this Discovery Pack: a Take-home booklet and this Activity booklet. Feel free to keep the *Take-home* booklet so that you can discover which animals live near your home.

If you need any assistance, please ask at any Visitor Information Centre.

When you are ready to return the pack, please ensure that all the pack's contents are present. A listing of the contents is located at the back of this booklet.

**For Your Safety:** Please stay on marked hiking trails.  
Always use caution when observing scats.  
Animal signs are of interest to everyone, including other animals! Please leave them as you found them.  
**HAVE FUN!**

- 1 *A Field Guide to Animal Tracks*
- 1 plastic collar
- 1 cast of an animal track
- 1 compass
- 1 container of plaster of Paris with measuring cup and list of proportions for mixing plaster and water
- 1 full water container with measuring cup
- 1 litter bag
- 1 magnifying glass
- 1 map of park
- 1 5.64 metre rope
- 4 pencils
- 1 pencil sharpener
- 1 plastic container for mixing plaster
- 1 ruler
- 1 stir-stick
- 1 straw
- \*\* 1 *Take-home* booklet
- 1 30 cm long wooden doweling
- 1 soil measuring jar

\*\* Indicates that you may keep this item.

**A CHANCE TO LEAVE YOUR OWN SIGNS BEHIND.**

**WHERE TO GO:** Bow Valley Provincial Park: Bow River shoreline accessed by the Bow River Interpretive trail

Elbow Valley: Along the waterways in Little Elbow and Gooseberry campgrounds

Peter Lougheed Provincial Park: Lower Lake Picnic area along the shoreline

**TIME TO EXPLORE:** 30 minutes

**WHAT'S UP:** Many of the animal signs found in the forest are made by people. Professional trackers who look for lost people in the woods learn to read these signs so that they can follow the trail to the person. They look for broken twigs, footprints, scuff marks and other signs that are left behind when a person walks through the woods. Here is a chance to leave your own mark behind, without doing any damage in your passing.

**HERE'S HOW:** Go to one of the areas suggested above. Divide into two teams. There should be at least one adult on each team. One team should cover their eyes while the other team makes a variety of tracks. Try to leave an interesting story in the sand.



When you are finished, the other team can open their eyes and try to follow your tracks and guess what your team was doing. Go back over the trail with them and correct them if they were wrong. Now switch roles and see if the other team can make up a different track story.

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**A LOOK AT ANIMAL TRACKS AND PLASTER CASTS.****WHERE TO GO:**

Bow Valley  
Provincial Park: Bow River shoreline- accessed  
from Bow River Interpretive trail

Elbow Valley: River flats at Gooseberry  
campground or McLean Creek trail

Peter Lougheed  
Provincial Park: Marl Lake or Pocaterra trail

**TIME TO EXPLORE:**

45 minutes

**DISCOVERY TOOLS:**

*A Field Guide to Animal Tracks*  
plastic collar  
cast of animal track  
litter bag  
pencil  
plaster of Paris  
plastic container for mixing plaster  
stir-stick  
straw  
water container  
*Take-home* booklet

**WHAT'S UP:**

Tracks can tell you a great deal, including what kind of animal made them, the direction of travel and whether the animal was walking or running.



Good places to discover tracks include muddy areas near water and along game trails. This adventure, along with the enclosed discovery tools, will help you find a track... and bring it back!

If one mound weighs 5 kilograms, then 700 mounds weigh:

$$5 \times 700 = 3500 \text{ kilograms}$$

That means that the gophers moved 3500 kilograms of soil. That's equal to the weight of about seven half-ton trucks full of dirt. How long do you think it took the gophers to move that much soil? What happens to the soil after it has been lying on the surface of the ground for awhile? Next time you see a field of gopher mounds, think of all the work that went into moving all that dirt, and think of all the nutrients that are being recycled for use by the plants in the area.

**FOLLOW UP:**

When you leave, think about how you have affected the area on your visit. How do you affect your home or school environment (for example, how much food do you eat, how much garbage do you produce)?

**HERE'S HOW:**

Walk along the trail until you spot a mound of fresh soil. They are most often found in grassy clearings. See if you can find the entrance to the mound. If you can't see it, gently poke the mound with the doweling in your pack. You'll know you've found the entrance when the stick moves easily through the soil.

To discover how much soil one pocket gopher moves, use the measuring jar from the pack. How many times can you fill the jar with soil from one average-sized mound. The measuring jar holds approximately one kilogram of packed dirt. If you filled it five times, then that one mound weighs

$$5 \times 1 \text{ kg} = 5 \text{ kilograms}$$



Now figure out how much soil gophers move in a hectare. Poke the doweling into the ground in the middle of a field of gopher mounds. Clip the rope from your pack to the doweling. Now stand at rope's length from the doweling and walk in a big circle around the stick, keeping the rope tight. Count each gopher mound that the rope crosses until you make a full circle. Let's say you counted 7 mounds. The area inside the circle is equal to 1/100th of a hectare. To find out how many mounds there are in one hectare, multiply the number of mounds you counted by 100.

$$\text{e.g., } 7 \times 100 = 700 \text{ mounds in 1 hectare}$$

**HERE'S HOW:**

Search along the trail. When you find tracks, turn to page 3 in your *Take-home* booklet to find out what animal made them. If you can't find the track in the booklet, use the *Field Guide to Animal Tracks* provided in your Adventure pack.

If there aren't any tracks around, use the rubber cast provided to make your own. Push the cast firmly into a damp section of the ground and carefully lift it away.



Now you are ready to make a plaster cast. Place the plastic collar around the track, and press it lightly into the soil.



Check the lid of the plaster of Paris container to find out how much plaster and water you need. Put the measured water into the mixing container. Using the stir-stick, add the plaster of Paris to the water. Mix until smooth and thick, like pancake batter.



Quickly pour the mixture into the track, allowing the plaster to fill to the top of the plastic collar. To make a hole for hanging your cast, poke the straw through the plaster near one end. Leave it there until the plaster is almost dry and then remove it.

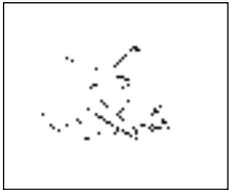


Let the plaster dry for 20-30 minutes. If you move it before it is completely dry, it may crack.

While you wait, browse through the *Field Guide to Animal Tracks*. It contains intriguing information about animals and their tracks. If your tracking senses have been aroused, search to see if you can find any more tracks. If you do, try and identify the animals they belong to and start to unravel the story they may tell.



After 30 minutes, carefully pry the cast out of the ground. Remove the plastic collar and brush off the loose soil from the cast. Write your name, the date and the animal's identity on the plaster cast with a pencil. Wait a day before washing off any remaining soil that won't brush away.



Use the litter bag provided to clean up pieces of leftover plaster. Put the litter bag back into the pack with the rest of the materials used. Before returning the pack to the Visitor Information Centre, throw the litter into one of the park's garbage containers and return the litter bag to the pack. Please rinse out the mixing container.

#### FOLLOW-UP:

Take your cast home with you and hang it on the wall.

Start a collection of tracks found or a collection of pictures and interesting trivia on your animal. Make a collection of track casts that you may find near your home or school. Plaster of Paris can be purchased in many hardware stores.

Follow the instructions on page 11 of your *Take-home* booklet on how to make a positive cast or your track.

## F. LIFE IN THE UNDERGROUND

### A LOOK AT POCKET GOPHERS AND THEIR MOUNDS.

#### WHERE TO GO:

Bow Valley

Provincial Park: Montane Trail or Middle Lake Trail

Elbow Valley:

Paddy's Flat Trail

#### TIME TO EXPLORE:

45 minutes

#### DISCOVERY TOOLS:

*Take-home* booklet  
wooden doweling  
5.64 metre rope

#### WHAT'S UP:

Animals such as beavers and pocket gophers greatly affect the environment in which they live. These effects are most evident from the signs these animals leave behind. You looked at some of the effects of the beaver in the *Life in the Pond* activity. Here you will look at what pocket gophers do to their surroundings.



Pocket gophers live underground and rarely emerge. They are most active at night when they are busy excavating long tunnels beneath the ground in search of roots and tender shoots. As they dig, they kick the soil behind them. After enough soil has accumulated, the gopher turns around and pushes it out to the surface, creating a mound which is the animal's most obvious sign. Some people mistakenly call these mounds mole hills, but since there are no moles in Alberta there is little chance of confusion. By the gopher's activities, buried soil nutrients are brought to the surface and reused. These animals are almost like mini-farmers, unknowingly fertilizing the plants which they will later eat.

When you find a gall, look at it closely and gently feel its shape. Please don't break it open as there is a young insect inside that depends on the gall for its survival. It won't last long without the plant's protection.

**FOLLOW-UP:**

Look around buildings for wasps' nests. They may be occupied by up to 5,000 wasps, so keep your distance.

Make your own spider web out of string.

When you return home, look for galls, webs and any anthills around your house and backyard.

Write a Haiku poem about one of the insects on page 16 of your *Take-home* booklet. A Haiku poem consists of three lines; the first line has 5 syllables, the second line has 7 syllables and the third line has 5 syllables. Here is an example:

*Long legs, black body  
Spinning webs capture insects  
Threads gleam in sunlight.*

**Answers to questions on anthills:** An anthill can contain anywhere from 20,000 to 40,000 ants. Anthills are usually south-facing so that they can absorb the warmth from the sun.

**B. LIFE IN THE POND****A LOOK AT BEAVER ACTIVITY AND SIGNS.****WHERE TO GO:**

Bow Valley  
Provincial Park: Flowing Water trail or Many Springs trail  
  
Elbow Valley: Beaver Flat trail

**TIME TO EXPLORE:**

1 hour

**DISCOVERY TOOLS:**

1 pencil  
map of park  
*Take-home* booklet

**WHAT'S UP:**

During this adventure you will explore for signs of beavers which can be found in and near a pond.

**HERE'S HOW:**

Check the trail map to find the quickest way to the pond. Walk along the trail until you find the beaver pond. Turn to page 12 in your *Take-home* booklet and see how many of the signs drawn in the picture can be found at or near the beaver pond.

Now see if you can match these signs with objects that might have a similar use in the human world, (e.g. A beaver pathway is similar to our roads or trails). Write your ideas down on page 12.

**FOLLOW-UP:**

Find a chewed stump beside the trail. What kind of tree is it? To find out, look for a living tree with a base that resembles the stump. Match the needles or leaves of the living tree with the pictures on page 7. This match will give you a good idea of what the tree looked like before the beaver chewed it down. Now look at other

chewed stumps in the area. Which kinds of trees do the beaver seem to prefer?



Willow



Aspen Poplar



Balsam Poplar



Lodgepole Pine



White Spruce

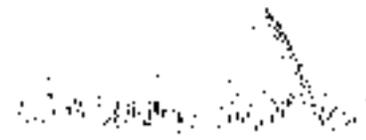
Find a partly chewed tree. What do you think the beaver will do with the tree once it is felled? How will the beaver move the tree to the pond? Can you see any evidence of where this has been done before? What will the beaver do with the tree once it is in the pond? Look around the pond and in the pond for the answer.

**Answers:** Beavers chew the branches of the tree into manageable pieces and drag them to the pond. Once in the pond, the trees may be used to build or repair dams and lodges or they may be eaten. The beaver only eats the inner layer of bark called the cambium as well as the leaves of the tree. Any branches which are not eaten are stored at the bottom of the pond for future use.



south facing

north facing



Anthill

**Anthills** - Ants build hills to protect themselves and their young. Under the hill is a complex series of passageways. To excavate these passageways, the ants have to carry each individual grain of soil to the surface to be dumped. When you find an anthill, note which direction it is facing (the gentlest slope faces south). Use the compass to help you. Why do you suppose it is facing that way? Can you see any activity around the hill? Follow one ant for five minutes. What is it doing? What happens when it meets another ant? How many ants do you think live in an anthill? Look for ants in other places, such as on tree trunks, on bushes and under logs. Are they the same kind of ants or are they different? Can you find their homes? Turn to page 17 for the answers.



Spruce Gall

**Galls** - Galls are formed when an insect disrupts the normal growth of a plant and the plant reacts by growing around the insect, providing it with food and protection.

Watch for Spruce galls which look like brown hard cones at the end of spruce tree branches. These are the old gall. The green ones are still occupied by an insect called an aphid.



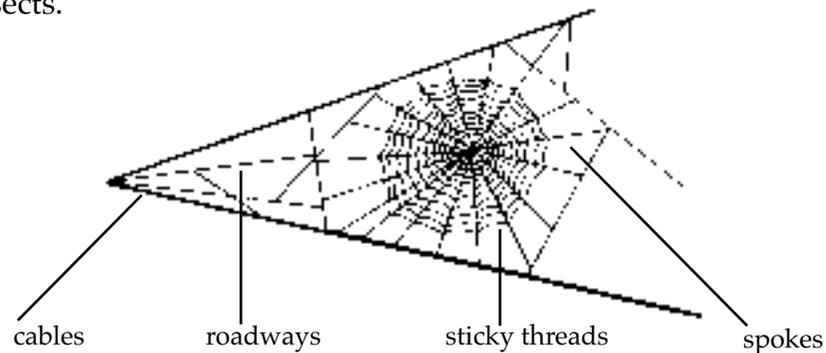
Rose Gall

Rose galls appear on the leaves of rose bushes as small, round bumps about 1 cm in diameter. Rose galls can be many colours including red, yellow and orange. The galls are caused by a type of wasp.

Make it a contest to see who can find the first sign (10 points) and other insect and spider signs along the way (5 points each). Keep track of your points on page 15 of your *Take-home* booklet. The person with the most points will win the title of **Super Entomologist**. An entomologist is a person who studies insects. Try to find three signs before you end the game.

When you find evidence of spiders or insects, try these different activities:

**Spiders' Webs** - Find a spider's web and look at the strands with your magnifying glass to see if they are all the same size. See if you can distinguish the four different kinds of threads in a spider's web. The four kinds are: **cables** which support the web by attachments to nearby objects; **roadways** which provide transportation routes which lead the spider to and from the centre of the web and transmit vibrations of struggling insects to the spider; **spokes** which give support to the web and provide spacing for the threads and their points of attachment; and the **sticky threads** which catch the insects.



Look at the pattern of the web. Draw the spider web design on page 16 of your *Take-home* booklet. Can you find the spider? Are there any insects caught in the web? Find another web of the same pattern and one of a different pattern. Start a collection of drawings of web patterns. Do you think that different species or kinds of spiders make different patterns of webs?

### A LOOK AT IDENTIFYING SCATS.

#### WHERE TO GO:

|                                 |  |
|---------------------------------|--|
| Bow Valley Provincial Park:     | Montane trail, Flowing Water trail, or Many Springs trail  |
| Elbow Valley:                   | River flats at Gooseberry campground or McLean Creek trail |
| Peter Lougheed Provincial Park: | Black Prince, Mt. Everest or Boulton Creek trail           |

#### TIME TO EXPLORE:

30 minutes

#### DISCOVERY TOOLS:

*A Field Guide to Animal Tracks*  
ruler  
*Take-home* booklet

#### WHAT'S UP:

This adventure will give you the opportunity to find out more about animals by looking at what they have left behind. Scats (droppings) are the most common sign seen. By examining the scats, you can usually tell which animal left them and occasionally, the kinds of food the animal was eating.

**CAUTION:** Scats can contain bacteria and parasites which are harmful to people. Do not touch or pull them apart. Keep at arm's length and use only a stick to examine them (not the ruler).

**HERE'S HOW:**



3.5 cm  
coyote (carnivore)



2.0 cm  
elk (herbivore)

Keep your eyes peeled as you head out on the trail. When you find animal scats, use the key on page 13 of your *Take-home* booklet to find out what they are.

Long rope-like scats usually belong to meat-eaters (carnivores) such as the coyote. Firm, oval-shaped scats called pellets are made by plant-eaters (herbivores) such as deer and elk. Elk and deer scats produced in spring and summer may look soft and flattened rather than firm because of all the fresh, green vegetation these animals are eating. Loose, large clumps of scats in which berries or green leaves are visible are usually left by bears. Look in your *Take-home* booklet to find out what the animals eat. Can you see any evidence of food in their scats?

In areas of Kananaskis Country where grazing is permitted, large pie-shaped droppings are made by cattle, and big pellets, sometimes called *road apples*, are left by domestic and wild horses.



cattle  
(herbivore)



horse  
(herbivore)

**TAKING A CLOSER LOOK AT SPIDER WEBS, INSECT GALLS AND ANTHILLS.**

**WHERE TO GO:**

- Bow Valley Provincial Park: Flowing Water trail, Many Springs trail or Middle Lake trail
- Elbow Valley: Beginning of Ford Knoll trail, various trails in Gooseberry campground or Little Elbow Interpretive trail
- Peter Lougheed Provincial Park: King Creek, Canyon, Mt. Everest or Black Prince trails

**TIME TO EXPLORE:**

1 hour

**DISCOVERY TOOLS:**

- compass
- magnifying glass
- pencil
- Take-home* booklet

**WHAT'S UP:**



spider  
2 body parts and 8 legs

Sometimes the most common and obvious things, such as spiders and insects, are overlooked. Here is an opportunity to find out where they live and to discover some of their secrets. When looking at them, keep in mind that spiders are not insects. *Spiders have eight legs and two body sections while insects have six legs and three body sections.*

**HERE'S HOW:**



insect  
3 body parts and 6 legs

Walk slowly down the trail looking closely at the trees and shrubs for spiders' webs and insect galls. Galls are the swellings, growths or discolourations on the leaves and stems of plants. Check the ground for anthills.

**HINTS:**

Here are some hints to help you identify the signs on trees:

1. This bird drills holes in trees searching for insects to eat.
2. This animal likes to use a tree as a scratching post. The animal may mark its territory by leaving scratch marks on the bark.
3. As the antlers of this large animal grow, they are covered by velvet. The velvet is a soft skin, full of blood vessels, which covers and nourishes the developing antlers. When the antlers are fully grown, the animal rubs them against trees to get rid of the velvet, which is no longer needed.
4. This sign is made by a prickly animal which has a sweet-tooth. This animal will chew off the bark to get at the tree's sugary inner layer which is called the cambium.
5. These animals make galleries or tunnels in wood which provides shelter for their very large families.
6. This animal often has a favourite spot where it sits and eats large quantities of spruce and pine cone seeds. The discarded cone scales accumulate in large piles called middens. You may hear the animal chattering at you from a nearby tree.
7. These large, antlered animals only have lower incisors (front teeth) which bite against a hard plate in the roof of their mouth. When they eat, they close down on the twig and then, by jerking their heads up, break it. As a result, the twig end is ripped rather than neatly cut.
8. This animal has both upper and lower incisors (front teeth) and when it nips off a twig, it leaves a neat 45° cut. This animal also turns white in the winter.

**Answers:** (spelled backwards)

- |               |                     |
|---------------|---------------------|
| 1. rekcepdoow | 5. stna retneprac   |
| 2. raeb kcalb | 6. lerriuqs der     |
| 3. kle        | 7. kle, esoom, reed |
| 4. enipucrop  | 8. erah eohswons    |

**FOLLOW-UP:**

Wildlife biologists use scats to determine what kinds of animals live in an area and how many of these animals there are. How easy do you think it is to find the scats of all the different animals that live in an area? Can you guess how many of each kind of animal live in this area? How would you find out? Some useful references on mammals and wildlife management are listed at the back of your *Take-home* booklet. Look for scats in your neighbourhood park, schoolyard and green spaces. Is there a variety of animals represented, such as carnivores (dogs, cats) and herbivores or seed-eaters (horses, birds)?

**A LOOK AT SCRATCHES, CHEWINGS, HOLES AND OTHER SIGNS FOUND ON TREES.**

**WHERE TO GO:**

Bow Valley  
 Provincial Park: Flowing Water trail, Montane trail, or Middle Lake trail

Elbow Valley: Paddy's Flat or Gooseberry campgrounds

Peter Loughheed Provincial Park: Marl Lake, King Creek, Mt. Everest, or Ptarmigan Cirque trail

**TIME TO EXPLORE:** 1 hour

**DISCOVERY TOOLS:** *Take-home* booklet

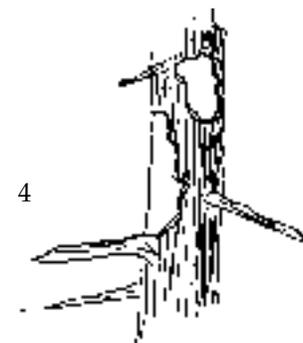
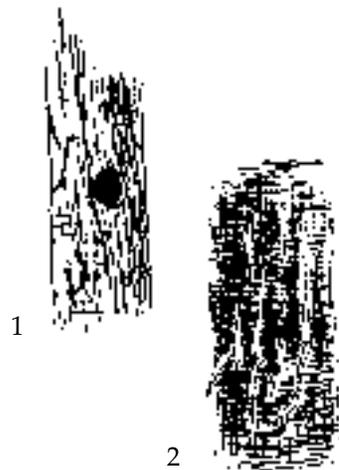
**WHAT'S UP:**

Ecologists are people who are interested in the relationships between the living and non-living world. They use a variety of techniques to gain this information. One such technique involves looking for signs on trees to find out how trees and animal interrelate.

**HERE'S HOW:**

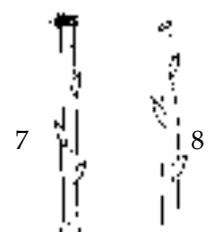
As you walk down the trail, look for examples of each of the following signs. Try to guess what animal made them and why. Write your answers on page 14 of the *Take-home* booklet.

1. Sawdust on the ground and holes in the trunk of the tree.
2. Three to five lines scratched in the bark two to four metres off the ground.
3. Bark rubbed off the young aspens from one to two metres off the ground.



4. Patches of bark stripped off the tree a few metres off the ground. Tooth marks are visible.
5. A series of carved galleries or tunnels under the bark of a dead tree. (Please be sure to put the bark back where you found it.)
6. A large pile of cone scales covering the ground next to a tree or log. (Pine and spruce cones are made up of dozens of scales which are attached to a central core. Animal chew the scales off to get at the seeds hidden underneath.)
7. The ends of the shrubs have been chewed off, leaving ragged edges.
8. The ends of the shrubs have been chewed off, leaving neat 45° cuts.

After you have tried to identify the animals, turn to page 13 for hints and the answers.



**FOLLOW-UP:**

Choose one of the animal signs found on trees and try to imagine the events which may have led up to the making of the sign. Write your story down or play a game around the campfire where one person begins the story, and each person in your group adds a line to the story. For more information on animals and their signs, refer to the books listed at the back of your *Take-home* booklet.