



Making a difference...together

TRACKS AND TRACES

Educators Guide

Program at a Glance

Animals are not always easy to find in the woods. This investigative and inquiry driven program will encourage students to keenly observe their natural surroundings for hidden clues and use their problem solving abilities to discover the diversity of wild animals in our ecosystems. We will investigate animal clues along a trail, solve a nature mystery and make casts of an animal track. To begin, we discuss the



most obvious clues animals leave behind-tracks. After casting their own track, students will go outside to look for real tracks and traces that animals have left behind. The group will discover a nature “mystery scene.” By investigating clues such as feathers, scat, and tracks and with the help of scientific tools, the students will examine the evidence, form hypotheses and deduce what happened. This activity will challenge the students’ knowledge, teamwork and problem solving abilities.

In this program, your students will...

- Observe a diversity of tracks and other signs left by animals
- Discover that animals leave many clues about their identity
- Identify a diversity of animals based on the clues they leave behind
- Explore the forest and lakeshore and see that many animals live here
- Evaluate the impact of our actions on animals and their forest home

Curriculum Connections

Our place based school programs directly relate to the K-5 science curricula. Below you will find some big ideas, curricular competencies and content that will be addressed on your program.

Big Ideas from BC Curriculum:

- Living things are diverse, can be grouped, and interact in their ecosystems (grade 3)
- All living things sense and respond to their environment (grade 4)

Curricular Competencies from BC Curriculum:

- Demonstrate curiosity and sense of wonder about the world
- Observe objects and events in familiar or unfamiliar contexts
- Make predictions based on prior knowledge
- Safely use appropriate tools to make observations and measurements
- Make and record simple measurements using informal or non-standard methods
- Make observations about living and non-living things in the local environment
- Collect simple data
- Use equipment and materials safely, identifying potential risks
- Experience and interpret the local environment
- Transfer and apply learning to new situations
- Generate and introduce new or refined ideas when problem solving
- Make simple inferences based on their results and prior knowledge
- Demonstrate an understanding and appreciation of evidence
- Identify some environmental implications of their and others' actions
- Represent and communicate ideas and findings in a variety of ways
- Express and reflect on personal or shared experiences of place

Content from BC Curriculum:

- Biodiversity in the local environment (grade 3)
- The ways organisms in ecosystems sense and respond to their environment (grade 4)

Suggested Pre-Trip Activities

- Look through books of animal tracks. Try to guess which animal made what track.
- Discuss what animal signs students have noticed near their homes.
- Look for animal tracks in the schoolyard. If there is a sandy area, have the students make their own tracks and notice how they look different when they walk, run, or jump.

Follow-up Activities

- Use a classroom story board where students report animal signs they see each day.
- Visit a sandy place in or near the schoolyard and look for animal tracks, like those of dogs, deer, or birds. Have the students try to determine what type of animal it was, where the animal went, how fast it was moving, if it was alone or in a group.
- Have students look at the paws and the tracks of their pets at home. Have them report their findings and observations to the class.

Background Information

Animal tracking is an art that sharpens our skills of observation. To find animal signs each of our senses must be fully engaged in order to find the subtle markings that animals leave behind. Tracking involves noticing animal signs and then joining these observations with knowledge of an animal, including its food, habitat, movement, and behaviours.

It is difficult to directly observe animals or to follow them as they move from place to place. Many animals are secretive, out at night, or move over very large areas. But all animals that move on the ground have the potential to leave tracks. Tracks can sometimes be seen long after an animal has left the area. Not only can you identify an animal by its track, you can also tell whether an animal was running or walking, whether it was injured, or whether it was traveling with another animal.

Animals also leave behind other markings in addition to tracks. Fur, tree scratches, chewed leaves, and trampled grasses are all signs that an animal has passed by. Scat, or droppings, can also hint at what animal is in the area. By examining scat scientists are able to find out what animals eat, and deduce if they are finding enough resources in the wild.

Some skilled trackers become so good at following and reading these animal signs that they are able to follow wolf packs or caribou herds for days without being detected. These skilled trackers are also able to find rare and endangered species, and let scientists know where they exist.

Key Word Definitions

carnivore: An animal that eats other animals.

digitigrade: Animals that walk on their toes. A digitigrade animal leaves only four toe marks in the soil. Cougars and wolves are digitigrade animals.

herbivore: An animal that eats plant matter.

omnivore: An animal whose diet includes both plant and animal material.

plantigrade: An animal that walks with its foot fully placed on the ground. It leaves an impression with five toe marks. Bears, humans, and raccoons are all plantigrade animals.

predator: An animal that kills and eats other animals.

scat: Animal excrement; dung or droppings.

unguligrade: An animal that walks on its nails, or hooves. It leaves only two toe marks in the soil. Deer and elk are unguigrade.

Online Resources

NatureWatch

NatureWatch is a community that engages all Canadians in collecting scientific information on nature to understand our changing environment. Find out how you can be a citizen scientist in your local area.

<https://www.naturewatch.ca/>

Capital Regional District

Information about the features, amenities and directions to Capital Regional District Parks

<https://www.crd.bc.ca/parks-recreation-culture/parks-trails/find-park-trail>

Wilderness Awareness School

A about scientists who use animal tracking to study animal life.

<https://www.youtube.com/watch?v=XW8k-qFtrLc>

Additional Resources

Teacher References

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Searfoss, Glenn. Skulls and Bones: A Guide to the Skeletal Structures and Behavior of North American Mammals. Stackpole Books, 1995.

Stokes, Donald and Stokes, Lillian. Stokes Guide to Animal Tracking and Behavior. Little Brown and Company, 1984.

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