

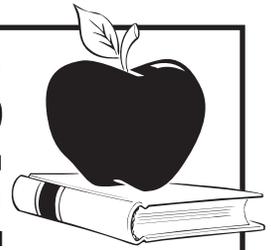
GRADE LEVEL: 2

CORRELATION TO NEXT GENERATION SCIENCE
STANDARDS: 2-LS4-1

SKILLS/PROCESSES: observation, data collection & interpretation, analysis, comparison & generalization, grouping, identification

OBJECTIVE: Students will become familiar with evidence showing that mammals inhabit a given area.

TEACHER'S GUIDE



UNIT ONE ■ LESSON TWO

Mammal Signs

BACKGROUND

Wherever they live, mammals produce evidence of their presence. This evidence is most commonly seen in the form of footprints or **tracks** in the soil or snow, indications of feeding activity and obvious kinds of habitation. Any walk in the wild will present numerous examples of each . . . if you know what you're looking for and where to look.

Areas of soft soil, mud, sand or snow are the best places to look for tracks. Along stream banks or at the edge of any body of water you're likely to find the footprints of many kinds of animals which come there to drink or feed. Using a field guide, you should be able to identify many of the tracks.

Evidence of feeding activity includes any collection of nuts, seeds or fruits stored in a concealed spot (under logs and tree roots, or inside log piles and hollow stumps). Tooth marks on anything indicate feeding—look for gnawed mushrooms or chewed nuts, fruits, leaves or twigs. Areas of bark are often chewed or stripped off as food—look for tooth marks on the exposed wood.

Signs of habitation can be especially interesting. Any natural cavity in a tree, stump or fallen log is likely to contain signs of use by some animal. Look for tracks, droppings and bits of food around the opening or signs of nesting within (piles of leaves, grasses or twigs).

Many mammals live underground, and any undeveloped area will reveal many openings to such **dens** and **burrows**.

Finally, some mammals build easily recognizable homes of their own. Squirrel nests are a common and highly visible sight in the trees of woodlands, parks and urban areas. Lakes, ponds, streams and swamps are likely to contain muskrat or beaver lodges.



RACCOON

PROCEDURE AND DISCUSSION

Review the student information with the class. Emphasize the variety of mammal living conditions, the diversity of their living arrangements, their adaptability and the importance of observation and attention in recognizing the signs of habitation (homes).

1. What are the three categories of evidence indicating the presence of animals?

tracks; evidence of feeding activity; and signs or places of habitation

2. Where is the best place to look for mammal tracks?

Tracks are most easily found in soft, damp soil, mud, sand or snow, especially at the edge of any body of water where animals come to drink.

3. Where are you most likely to find collections of nuts, seeds and fruits?

Collections of nuts, seeds and fruits gathered for food are commonly found under logs and tree roots or inside log piles and hollow stumps.

4. What would indicate that a mammal has been living in an opening or hollow space?

piles of leaves, grasses, twigs; food remains; scratch marks or bits of hair or fur

VOCABULARY

burrow—a tunnel or system of tunnels dug underground by an animal and used for a home

den—a hollowed chamber or space used as a home by an animal

tracks—the footprints left by an animal in soft soil, mud, sand or snow

CHALLENGE YOURSELF EVALUATION

1. The three clues that may be used to determine the presence of mammals are tracks, homes and feeding.
2. The least useful clue in a dry, rocky area is tracks. Tracks can only be made where the ground or ground covering is soft.
3. Mammal tracks are often seen in large numbers around water because the soil is soft, and the animals come there to drink and/or eat.
4. You would be most likely to find collections of nuts, seeds or fruits left by mammals under logs or tree roots, or inside log piles or hollow stumps.
5. Scientists study mammal signs because many times you don't see the animal, but you do see its signs. The signs can tell you much information about the animal.

ACTIVITY PAGE EVALUATION

Answers will vary but should include the coyote walking, then running, capturing a cottontail and returning to its den.

EXTENSION

Visiting the wooded areas of a local park or even a large field or clearing will provide ample opportunity for students to apply the information contained in this lesson. They can look for examples of all three categories of evidence.

Mammal Signs

STUDENT'S GUIDE

Wherever they live, mammals produce signs that show they are present. Learning about and looking for these signs can tell you whether mammals are living in an area even if you never actually see them. These same clues will often tell you exactly what kinds of mammals are present.

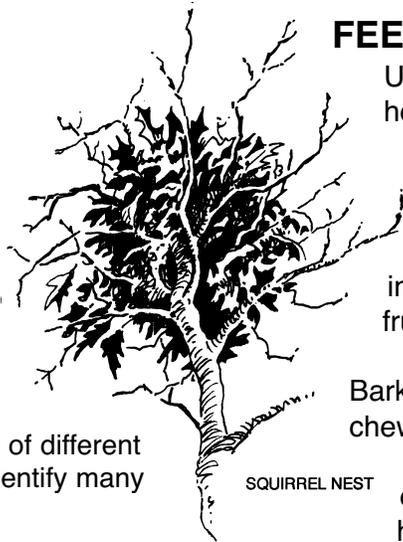
TRACKS

When an animal walks across soft ground, mud, sand or snow, it will leave footprints or **tracks**. Near the edge of any body of water, such as a stream, a pond, a river or a lake, you're likely to find the tracks of many kinds of animals that have been there to eat or drink. Using a field guide, that contains pictures of different animal footprints, you can identify many of these tracks.

HOMES

Mammals' "homes" are especially interesting. Any natural hollow place in a tree stump or fallen log is likely to contain signs that some mammal has used it for a home. Tracks and signs of feeding near the opening, or piles of leaves, grasses and twigs inside used as bedding can show that a mammal lives here.

Many mammals, like woodchucks and moles, live in burrows that are underground. In some areas, openings to reach **dens** (small chambers) and **burrows** (systems of tunnels) can be seen. Some mammals even build themselves rather fancy homes. Squirrel nests are a common sight in trees. Lakes, ponds, streams and swamps are likely to contain muskrat or beaver lodges built of mud, cattails, sticks and logs.



SQUIRREL NEST

FEEDING

Under logs and tree roots, or inside log piles and hollow stumps, you're likely to find collections of nuts, seeds and fruits gathered by some mammal.

Tooth marks can be found on many things, including gnawed mushrooms, chewed nuts and fruits, and nibbled leaves and twigs.

Bark on trees and bushes may be chewed or stripped off as food. Tooth marks can be seen on the exposed wood. Generally the higher off the ground the bark has been removed, the larger the mammal that ate it, or the deeper the snow was.



CHEWED BARK

CHALLENGE YOURSELF

1. What three clues may be used to determine the presence of mammals?
2. If you were in a dry, rocky area, which of the three clues do you think would be the least useful to you in finding evidence of mammals? Why?
3. Why are mammal tracks often seen in large numbers around water, such as at a pond or along a river bank?
4. Where are you most likely to find collections of nuts, seeds or fruits left by mammals?
5. Why would scientists want to study mammal signs?

VOCABULARY

burrow
den

tracks

ACTIVITY PAGE: Mammal Signs

What you will need

- paper
- pencil or ink pen

WHAT YOU DO

Read the following story, then follow the directions.

Trail of Tracks

A scientist went for a walk in the country on a sunny day after a recent snowfall. She had been studying coyotes for several months in the area and wanted to see if there were signs of their activity in the snow. She had not been walking long when she saw a set of coyote tracks. She followed the tracks. At first, the tracks were easy to see. They were close together and evenly spaced. Soon she found a place where the tracks became farther apart. Then she saw some eastern cottontail (rabbit) fur and a little blood on the snow. The coyote tracks became closer together again. The tracks led to a hole in the ground. The snow was packed down all around the hole. Many tracks were seen around the hole.



What did the tracks tell the scientist about the coyote and its activities? Write a story to explain what the coyote did while roaming in the snow.