



# Tracking Wolves

Outdoor learning activity for middle school (6-8th grade)

For elementary students, check out our lesson, "[A Family Pack](#)"

## Background:

*This lesson is best done in areas where wolves are found; however if you do not live in, or are unable to travel to wolf country, you can modify parts of the activity to include animals in your area. You may share this background as an introduction for the students or use it for your own personal knowledge.*

Washington Department of Fish and Wildlife wolf biologist Gabe Spence is a [certified tracker](#). He uses his animal tracking skills to estimate how many wolves live in the different packs throughout northeast and northcentral Washington. Because [wolves are an endangered species](#) in Washington, knowing the numbers of wolves in individual packs can help wolf biologists and wildlife managers better understand if the wolf population is closer to recovery.

The first step of tracking an animal includes finding tracks. To find tracks, Gabe looks in areas that are muddy, sandy, or snowy (in the winter). Once Gabe finds tracks, he must then identify them. Could they be coyote? Cougar? Dog? Gabe uses toe shape, patterns, and track size to determine what animal he has found.

For example:

- Toe shape: Round, oval, long, narrow? Are the toes connected or disconnected to the heel pad?
- Heel pad: Is there one heel pad or two?
- Claws: Are there visible claw marks?

Once Gabe determines he has found wolf tracks, he follows the tracks. This process is called trailing. While trailing wolf tracks, he looks at gait (how the animal moves). By looking at the patterns of an animals' gait, he can determine if there is one or more individuals that were in the area, and what the wolf/wolves were doing (e.g., travelling, walking slowly, running, etc.). This gives him insight to how wolves behave.

To count wolves in a pack, Gabe will count tracks, set trail cameras, and then track again to see if the number of individuals remained the same, or changed.

## Why is animal tracking important?

Data collected from animal tracking can help us understand how individual animals and populations may migrate or move within a territory. Additionally, it can show us how populations may change throughout generations. Tracking data helps biologists and wildlife managers address challenges that species' populations may face such as biodiversity loss, land use change, climate change, invasive species introduction, fire disturbance, or the spread of diseases.

## Objectives:

In this activity, students will:

1. Differentiate wolf tracks from other animal tracks.
2. Measure length and width of a track.
3. Identify the gait of an animal.
4. Search for tracks in an outdoor area.
5. Draw tracks, identify the animal, and explain the environment they found the track in.
6. Work together to draw connections between the environment and animal signs.

## Materials:

- Computer(s) or projector for watching videos, journal, pencils, animal identification cards, (see suggested resources below), ruler or measurement tape, butcher paper, markers/colored pencils, Wolf Track Comparison teacher and student sheets, Wolf Identification PowerPoint
- Optional: backpacks, clipboards, lunches, water, snacks



## Vocabulary:

**Gait:** How an animal moves on foot.

**Substrate:** The different types of surface of ground, e.g., sand, snow, mud, leaf litter, etc.

**Tracking:** Gathering evidence of wildlife through physical signs like animal foot tracks, scat, fur, etc.

## Learn and Practice:

**Learning animal/wolf tracks:** Have learners watch the "[Introduction to wolf tracks video](#)" and then immediately after, "[Tour of Wolf Country](#)". Afterward, have students pair with a partner and share.

1. Describe what the wolf habitat looked like.
2. What were some of the non-track signs of wolves that Gabe found?
3. How did Gabe determine there were wolf pups in the area?

Next, have students watch the videos, "[Hindfoot of a wolf](#)" and "[Front paw of a wolf](#)". Have students write down three characteristics of a wolf track that Gabe shares. Afterward, have students share their answers and write them down so students can see.

Finally, watch the video, "[Comparing Animal Tracks](#)".

Distribute physical copies of the student version "Wolf Track Comparison" sheet to groups of two. Have students measure and record the tracks. Next, have them identify characteristics of each print. Applying what they learned in the "Comparing Animal Tracks" video, ask them to identify each track. You can also distribute any of the materials listed under the "resources" section if you find students have difficulty with this. You can check student work by using the teacher copy of this document.





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## Background: Why is gait important?

Gabe uses the gait to determine how many individual wolves are in the area. Different types of gaits (walking, trotting, running) make different patterns on the ground. By looking at these patterns, Gabe can determine if there are multiple individuals in a pack or just one. Additionally, he describes being able to identify gait as being the, "doorway into what the animal was doing." Every animal has their most common gait they use, and if they switch gaits, there is a reason for that. There are many wolf gaits, here are three of the most common:



**Side trot:** When wolves are in a side-trot this often means they are travelling. Side trot- tracks can be identified because the hind feet always land slightly ahead of the fronts and on the same side of the trail. i.e., front on the left, hind on the right. This allows them to travel a bit faster than the direct register trot without their feet hitting as they move. When using a side trot, wolves often travel many miles.

**Direct register trots:** Just as the front foot is leaving, the hind foot lands in the same spot. They can also travel long distances using this gait. A direct register trot is slightly slower than a side trot. It is most often used in snow or when wolves travel off trail through grass, brush and branches. It is efficient and quiet.

**Walking:** In the most common wolf walking gait, the track of the hind foot is way past the track of the front foot. This is called an "overstep walk" because the hind foot "oversteps" where the front track is. Wolves walk when they are investigating something, are curious, are moving short distances (like from one bed to another) or are interacting with each other.

## Identifying Gaits:

Open the video, "[Wolf Gaits](#)" and have your group watch the two-minute video. In this video, Gabe explains the three most common wolf gaits you might find.

After you're done watching the video, open the Wolf ID PowerPoint where students will look through four photos and determine how many wolves might have been in the area and what type of gait the animal was using. Educator prompts and answers can be found under "Notes".

## Finding and Recording Animal Sign:

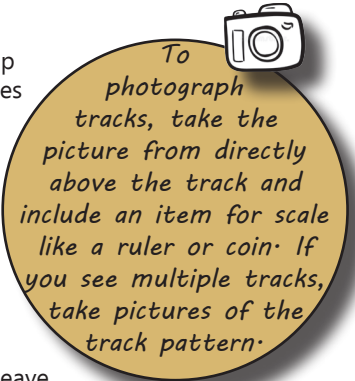
*In this section of the activity, you will use the knowledge learners have gained from the previous activities to try and identify and track wolves (or other animals). It's time to get outdoors!*

To prepare for your trip, determine how long your trip will be. We recommend giving students a minimum two hours to explore and find signs of animals.

If you live in or can travel to northeast, northcentral, or southeast Washington, check out [this map of wolf packs in Washington](#). Look for public lands in this area where you might be able to find wolf tracks.

**Safety and etiquette:** If students have concern about seeing wolves, ask them to watch the video, "[Washington Wolf Encounters](#)" and/or read the, "[Tips for Hiking in Wolf Country](#)" blog from Conservation Northwest. Make sure students do not take any animal sign they may find. If the groups is not already familiar, introduce and/or remind them of [Leave No Trace Principles](#).

Once onsite, split participants up into small groups. Set boundaries as needed. Give them plenty of time to search the area for signs of wildlife. If they find something, ask them to record it in their journal. They can draw a picture, take a photo, and write down what the environment was like that they found the animal sign in. Remember, take only pictures, leave only memories.



**The story:** Now that we've learned about how to identify animal tracks, Gabe needs our help counting wolves (If you're in an area without wolves you can say counting animals). He's asked us to go to our [local park, schoolyard, nearby [WDFW wildlife area](#) or other public land] and find evidence of animals present in the area and then report them so that the Department of Fish and Wildlife has a better idea of the wildlife populations and locations. Your goal is to capture as much information about wolves and the animals who live near wolves as you can.

- Ask students to journal about their day along the way. They should record any animal sign observations or sightings.
- Is there any evidence wolves have been or are in the area? What other animal sign did you find?
- Describe the environment. What were the plants like? The weather? The ground/substrate? What time of year is it?

Before students go, have them develop one or two research questions they would like to know and that their field trip might be able to answer. Examples could be (but are not

limited to): What types of wildlife live in my nearby park? What types of habitats do wolves prefer to live in? Where am I most likely to find animals? Ask students to try and answer these questions using evidence they find on their trip.





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After students come back, have the groups share highlights from their experiences—funny moments, animals they saw, animal sign they encountered, things they noticed about the environment, etc. After sharing, have students individually journal for five to ten minutes and answer the following questions:

- 🐾 How did you use your resources and knowledge to identify tracks and other animal sign?
- 🐾 Although we've mostly learned about tracks, what are other things you found that prove evidence of an animal in the area?
- 🐾 Can you think of other ways biologists might track animals?
- 🐾 Can you think of other reasons tracking animals might be important?



For the culmination activity, give students a large piece of butcher paper and markers/colored pencils and have them create a map of the area they explored. Ask them to include landmarks such as rivers, lakes, tree stands, meadows, parking lots, etc. Next, they will add areas where tracks and animal sign(s) were found.

After each group has contributed to the map, ask the entire group to find connections between the stories occurring in the map and in the whole area explored. Each groups' experiences will serve as one part of this landscape's story, giving learners a larger picture of what is happening in this area.

## Optional Extension:

If you and your group do find evidence of wolves, including tracks, Gabe has asked that you report them using the [Washington Department of Wildlife's Report Wolf Observations](#) tool! (Please note this is only for wolf reports.) For all other wildlife observations, please use [this wildlife observation reporting](#) tool.

## Resources:

### Free animal tracks/tracking materials

- 🐾 [Animal Tracking Cards](#)-Princeton University
- 🐾 [Methow Mammal Tracks](#)- Wenatchee Naturalist
- 🐾 [Where to find animal tracks](#)- Nature Mentor

### Purchasable materials

- 🐾 [Track molds](#)- Acorn Naturalist
- 🐾 [iTrack Wildlife](#)- A wildlife track ID app. Comes in free, and paid versions.
- 🐾 [Animal Track Pocket Naturalist Guide](#)
- 🐾 [Washington and Oregon Animal Tracks](#)
- 🐾 [Mammal Tracks and Sign: A Guide to North American Species](#)



💡 **Idea:** Show off your students' work! Share student projects from this lesson with WDFW.  
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