

4-H NATURE CONNECTIONS



TRACK PATTERNS

Purpose:

Understand how animals move and why different animals might make different types of tracks

Location:

A place where you can observe tracks. Newly fallen snow is great. Sand or mud works too. You can also use a pan of water and a long sidewalk.

Time required:

30 minutes or more

Materials:

- Nature journal for each participant
- Tape measure for each pair or small group

Background: Looking at animal tracks in new fallen snow can reveal a huge amount of information about the wildlife living in a particular area.

Getting Ready: Make sure the area you have planned is good for observing tracks. Walk through the area at various times to see how long tracks remain visible. If you are using a pan of water and a long sidewalk, observe how long tracks remain before evaporating.

Procedure:

1. Ask: *Do you think all people will make the same tracks? Does a particular animal's track always look the same?*
2. Have several participants (ideally of different heights) walk at a normal pace through an area and leave tracks.
3. Using a tape measure, have participants measure the distance between the tracks. It does not matter how they measure, as long as they are consistent and measure each track the same way. Allow participants to make observations about the footprints. Ask: *Is the whole foot making an impression or only part of the foot? How deep are different parts of the footprint in mud, sand, or snow?* Have participants create a table in their nature journals like the one shown on the next page to record observations.
4. Ask participants to predict how moving differently might change the track pattern.
5. Repeat the experiment with participants moving in different ways, such as running, skipping, or hopping. They can also try walking on their heels or tiptoes, marching, trying to walk silently (like a ninja), stomping, or walking backward.
6. They can even try moving on all fours like different animals. (Check out the Michigan State University Extension Diddy-Squat science lesson: *Why Are Animals' Feet Different?* at https://www.canr.msu.edu/resources/teaching_science_when_you_dont_know_diddly_why_are_animals_feet_different.) Ask participants to move like a rabbit, squirrel, or deer. Compare it to actual track patterns in a book or online.



Track Observations:

Person	Height of person	Type of movement (such as running, walking, or hopping)	Distance between tracks	Other observations

Wrap-Up: What conclusions can you make about tracks? Do taller people make longer tracks? How does speed affect the tracks? Can you tell if someone was walking backward or forward by looking at their tracks? What discoveries did you make about tracks?

Variations: If you have pets or livestock, walk or run with them. Then, make guesses as to how the change of pace changes the tracks.

Resources:

Michigan State University Extension. (2018.) *Teaching science when you don't know diddly-squat lesson: Why are animals' feet different?* https://www.canr.msu.edu/resources/teaching_science_when_you_dont_know_diddly_why_are_animals_feet_different

Murie, O. J., Elbroch, M., & Peterson, R. T. (2005). *Peterson field guide to animal tracks* (3rd ed.). Houghton Mifflin.

Selsam, M. E. (1999). *Big tracks, little tracks: Following animal prints*. Harper Collins.

4-H and MSU Extension Strengthening Michigan's Academic Standards

The Michigan 4-H Nature Connections lessons are intentionally designed to enhance the Michigan Academic Standards from the Michigan Department of Education (<https://www.michigan.gov/mde/0,4615,7-140-28753---,00.html>). These lessons provide an opportunity for youth to engage in and apply Michigan's formal education standards. In doing so, young people develop the skills needed to succeed with critical thinking, collaboration, communication, and additional career-necessary competencies. Youth develop these skills in a real-world setting to experience direct concept application and personal growth. This is accomplished in a way that includes hands-on activities, experiential learning to meet students where they are, and recognition of various ways of synthesizing and applying knowledge.