Discovering STEM Program

Who Made That Track?

Description: Students will examine, analyze and simulate tracks made by various animals.

Groups: All ages; recommended group size: two.

Estimated Time: 15 minutes.

Key Question: What kind of tracks do animals leave behind? What can animal tracks tell us about the animal's behavior?

Content Expectations Addressed: Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.

Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.

Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science through history and within society.

Observable Characteristics- Plants and animals share many, but not all, Characteristics of their parents.

Environmental Adaptation- Different kinds of organisms have characteristics that help them to live in different environments.

Teacher Background: Studying animals can be tricky. Sometimes they are only out at night or they are very stealthy and are hard to watch. However, animals leave tracks behind when they move on the ground. Examining animal tracks can tell you a lot about them. You can tell paths they have traveled, where they may have strayed from the path to stop for something, and if they were running, walking, hopping, etc. Tracks can also tell you if an animal was being chased or if they were traveling with others. The habitat the animal uses can also be determined by following the tracks. In-depth examination of tracks can also help you conclude the size of the animal. A goal of this activity is to pique students interest in animals and their tracks and encourage them to look for tracks in nature.

Science Process Skills: Describing, inferring, observing, - questioning, concluding, information gathering and recording.

Materials: Canvas cloth with tracks on it, 3-D animal track molds on blocks, sand, track rubbing plates, crayons, paper, tape.

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Goal: The goal of this kit is to pique students' interest in their environment and the animals who live around them. It is hoped that after this activity students will look for animal tracks around their school and home. Tracks included in this kit are animals found in west Michigan woodlands.

Procedure:

For all students: Making tracks in sand

Fill the trays with between 1/2 and 1 inch of sand. (It might be a good idea to place a tarp under the trays as sand may spill out). Using a spray bottle, wet the sand until it is a medium tan color. Students may freely use the 3-D tracks to make prints in the sand and observe the shape each animal makes. Supervisors may show students the footprint patterns and photos of the animals that made them in the reference book. Note: The tracks were made from casts taken from actual animal tracks.

Clean up: Please only put clean sand back in tub. (Please discard sand that falls on the floor.)

For preschool and lower elementary students: Track rubbings

Various animal track rubbing plates are available to the students. They need to place a piece of paper on top of the track and use crayons to lightly color over the plates to create the image on their paper. (The paper may need to be taped to the plate to hold it in place for younger children.) They can use these plates to create a pattern of tracks and also draw in the background the animal would live in.

For older students: Inferring animal behavior by examining tracks on a tarp.

Students may work in groups of two or larger to examine tracks made on a canvas cloth. Students should try to guess what animals made the tracks, and what their behavior was that caused them to travel through that area.

Please make sure that students do not stop on the canvas. *It is* ***recommended that the canvas is roped off*** **to** ***protect it.***

These instructions should be read to the students:

"This is a scene that has taken place in a local woodland when snow was on the ground. Various animals have come to the stream. Your job is to be detectives and determine which animals made the tracks, why they came to that area, and what they did as they traveled across the area.

Things to keep in mind:

The stream is drawn in but not any trees, bushes, dens, brushpiles, or other natural objects found in the woods. Keep in mind that these objects are going to affect the animal behavior and you need to infer where these objects are and how they affected the track pattern."

Using a tracks guide, they will determine which animals made the tracks on their cloth. They will also need to answer the questions on the worksheet that go along with the tracks they are examining. In doing so, they will infer whether the animal was traveling alone, was being preyed upon, was acting as a predator, and where the animal was headed.

A notebook with pictures of the animals, their track and track pattern, and a drawing of their scat is included for reference. (A "scat" is the excrement of an animal.)

Resources:

Reference Book (included in kit)

Pembleton, Ed and Vincent, Howard, K., The Leopold Education Project. Pheasants Forever, Inc.

http://www.rmrs.nau.edu/wildlife/tracks/tracks.pdf

http://nationalzoo.si .edu/Education/ClassroomScience/Ani malTracks/default.cfm