

Photo Description



This image shows two deep footprints pressed into wet soil surrounded by grass and small flowering plants. The prints appear to be from a four-legged animal that walked across this muddy ground. You can see the clear shape and depth of where the animal's feet sank into the soft earth.

Scientific Phenomena

Anchoring Phenomenon: Animal tracks in mud reveal evidence of which animals live in an area and how they move.

Why This Happens: When animals walk on soft surfaces like mud or sand, their feet push down and displace the soil, leaving an impression. The weight of the animal's body creates a depression in the ground that stays visible even after the animal has left. Different animals have different foot shapes and sizes, so their tracks look different. This allows us to identify which animals have been in a location—even if we don't see the animal itself. Tracks are evidence that scientists and naturalists use to study animal behavior and habitats.

Core Science Concepts

- **Animal Identification Through Evidence:** Different animals leave different-shaped tracks because they have different foot structures. By observing track size, shape, and depth, we can infer what kind of animal made them without seeing the animal directly.
- **Habitats and Animal Movement:** Animals move through their environments looking for food, water, and shelter. Muddy or sandy areas near water are common places to find tracks because many animals need these resources.
- **Physical Properties of Materials:** Soft materials like mud, sand, and wet soil hold impressions better than hard, dry ground. The softer the surface, the clearer the track will be.
- **Observation and Scientific Thinking:** Scientists use careful observation of small details (depth, size, claw marks, toe patterns) to gather information and answer questions about animals and their behavior.

Pedagogical Tip:

Before showing this image, take students on a "track hunt" during recess or outdoor time. Have them look for tracks in dirt, sand, or mud near your school. This real-world experience will make the photograph much more meaningful and will activate prior knowledge. Students will be excited to identify tracks they've actually seen!

UDL Suggestions:

Offer multiple ways for students to represent their learning: some students could draw and label animal tracks, others could create a "track guide" poster, and others could act out how different animals move (hopping, padding, galloping) to physically understand how different feet create different track patterns. This addresses diverse learning modalities (visual, kinesthetic, linguistic).

Discussion Questions

1. What can scientists learn about an animal just by looking at its footprints? (Bloom's: Understand | DOK: 2)
2. Why might an animal's tracks be deeper in one spot than another? (Bloom's: Analyze | DOK: 3)
3. How could you figure out which animal made these tracks if you couldn't see it? (Bloom's: Apply | DOK: 3)
4. Where in our neighborhood or school do you think we could find animal tracks, and why? (Bloom's: Create | DOK: 3)

Extension Activities

1. **Track Hunt & Documentation:** Take students outside after rain or to a sandy/muddy area. Have them find real animal tracks, photograph or sketch them, and create a classroom "Track Field Guide" by matching their findings to pictures of common local animals (squirrels, birds, rabbits, deer, insects). This combines observation, recording data, and animal identification.
2. **DIY Track Making Station:** Set up a sensory station with shallow trays filled with sand or playdough. Provide model animal feet (toy animals or clay molds) and have students press them into the material to create "tracks." They can then compare and sort tracks by size, shape, and number of toes. This hands-on experience helps them understand how different animals make different impressions.
3. **Animal Movement & Track Prediction:** Show students pictures of animals with very different body structures (bird, dog, deer, frog). Have them predict what the tracks of each animal would look like and draw them. Then reveal actual track photos. Discuss why their predictions were similar or different. This builds inferential thinking and helps them connect body structure to movement and track patterns.

NGSS Connections

Performance Expectation: 3-LS1-1 - Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Disciplinary Core Ideas:

- 3-LS4.A - The many different kinds of animals and plants that live in a place and the many different environments support different combinations of life.
- 3-LS1-1 - All organisms have inherited traits that influence their survival and reproduction.

Crosscutting Concepts:

- Patterns - Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
- Evidence - Evidence is used to support explanations of natural phenomena.

Science Vocabulary

- * **Track:** A mark or footprint left behind by an animal as it walks or runs.
- * **Evidence:** Information or signs that help us learn the truth about something we can't see directly.
- * **Habitat:** The place where an animal lives that has the food, water, and shelter it needs.
- * **Impression:** A mark or shape made when something pushes into a soft material like mud or sand.
- * **Identify:** To figure out what something is or recognize it.

External Resources

Children's Books:

- Who Took the Cookies from the Cookie Jar? by Bonnie Ritchie (engaging story with track-following elements)
- Stranger in the Woods by Carl R. Sams II and Jean Stoick (photography-based book showing animal tracks and habitats)
- Forest Tracks by Betsy Bowen (focuses specifically on identifying animal footprints)

YouTube Videos:

- "Animal Tracks Identification for Kids" by National Geographic Kids — <https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Shows clear examples of common animal tracks with explanations of which animals made them; approximately 5-7 minutes, suitable for third grade)
- "How to Identify Animal Tracks" by Science Kids — <https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Interactive and age-appropriate explanation of track features and what they tell us about animals; approximately 6 minutes)

Teacher's Note: This lesson naturally connects to animal classification, biodiversity, and ecosystem concepts your third graders will explore throughout the year. The track photograph is an excellent "hook" for scientific thinking because it presents a mystery to solve—students love being detectives!