

"Animal Tracks"

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Audubon at the Francis Beidler Forest

Overview: Using an animal track field guide, students will identify and compare mammal tracks placed at various stations around the nature center. Rubber replicas of scat and skulls (if available) of the mammals will be placed next to the appropriate track. After identifying the tracks, students will create a plaster cast for a track of their choosing.

Connection to the Curriculum:

- 5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.
- 6-3.2 Summarize the basic functions of the structures of animals that allow them to defend themselves, to move, and to obtain resources.

Suggested Grade Range: 5-6

Time: 45 minutes

Materials Needed:

1. Animal track identification sheet, one per student
2. Student data sheet, one per student
3. Clipboards
4. Ruler, one per student
5. Rubber molds of animal tracks to create plaster track
6. Rubber molds of animal scat
7. Rubbermaid trays, one per two students
8. Fine sand, 2" deep per tray
9. Plaster of Paris
10. Popsicle sticks
11. 2-liter soda bottles, one per student
12. Animal skulls (optional)

Objectives:

1. Students will be able to use a key to identify the tracks of mammals that inhabit the swamp ecosystem.
2. Students will be able to describe the differences between the foot structures of mammals found in the swamp.

Procedures:

1. Purchase rubber replicas of animal tracks and scat (see resources).
2. Prior to the activity, at stations placed outside in such a way that all students can be supervised from a central point, use the rubber animal track to create tracks in sand or prepared (cleared and loosened) soil. The rubber tracks can also be pressed in to Model Magic or Sculpey Clay (and baked) to create a reusable track. Along with the animal track, place the rubber scat and skull associated with that track. (at FBF the stations are placed around the loop of low boardwalk)

3. Set up the sand-filled trays and plaster cast materials for students to create animal track casts once they have identified the tracks at all the stations.
4. Provided each student with a student data sheet, an animal track identification sheet and a ruler.
5. Have students rotate to each station and record the animal track identification on their data sheet. Leave at least 20 minutes to complete the plaster cast activity.
6. Have students make a plaster cast of an animal track that they have selected (adapted from *Project Wild's* "Tracks!"). **Note: Group size or time at Beidler Forest may preclude this portion of the activity.**
 - a. Cut the top and bottom out of a 2-liter plastic bottle. The top should be cut at the point where the bottle begins to narrow toward the opening. The bottom should be cut 3" from the bottom of the bottle. The remaining cylinder should be cut into 2"-wide bands.
 - b. Carefully clean the track of twigs, leaves, and other litter (if naturally occurring) or press the rubber track into the prepared sand in the tray. Tracks make a better impression if the sand is prepared by wetting it with water from a spray bottle. Fingers should be used to gently turn the sand to ensure all the sand in the area of the track is moist.
 - c. Press a circular band firmly into the ground or sand tray so that the track is surrounded by the plastic.
 - d. Mix about 1.5 cups of plaster in the "bowl" (which was the bottom of the bottle), adding water slowly until it is about as thick as heavy cream (it should flow smoothly off of the stir stick). This should be done at the site of the track as the plaster will begin setting quickly in the bowl.
 - e. Pour the plaster carefully into the mold (as close to the track as possible to avoid obliterating the track) until the plaster is about one inch above the ground. Allow the plaster to harden at least fifteen minutes before lifting it out of the track. If soil is moist, hardening may take longer.
 - f. Once the cast is hardened, lift it out of the track and remove the plastic band. Once the plaster has completely dried, the track can be carefully cleaned of soil or sand using a soft brush.
 - g. The track cast can be preserved by applying a coat of spray enamel in two or three light coats, allowing each coat to dry thoroughly before adding the next. Two or three coats of acrylic spray can be added for additional protection, if the track is to be handled frequently.

Suggested Evaluation:

1. Using a mammal track identification guide, have students identify drawings of tracks or plaster casts of tracks.
2. Given drawings of two or more mammal tracks, have the students describe the differences between the foot structures and how those differences benefit a particular animal.

Extending the Lesson:

1. Explore the grounds around the school and identify what animals are in the area. Create sandy plots around bait to capture the tracks.
2. Historically, what animals have existed in the area where the school is now located? If the animals are no longer in the area or exist in greatly reduced numbers, what events or

conditions caused the change? (*these will include large mammals such as elk, wolves, cougars, beavers, bison, etc.*)

Resources:

1. Acorn Naturalists Online Store at <http://www.acornnaturalists.com/>
2. Brown, Jr., Tom. *Tom Brown's Field Guide to Wilderness Survival*. Berkley Books. New York. 1983.
3. McDougall, Len. *The Encyclopedia of Tracks and Scats: A Comprehensive Guide to the Trackable Animals of the United States and Canada*. The Lyons Press. Guilford, CT. 2004.
4. South Carolina Department of Natural Resources. *Guide to Animal Tracks*. Adapted from *Project Wild's* "Tracks!"

Animal Track Data Sheet

Name:

Station	Track id	Track similar to this animal
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Circle the station number for the animal track that you want to cast (the bear track is too big).