Track Traps & Habitats

Educational Elements

Key Concept:
Identifying tracks, habitats and animal adaptations

Overview:
Participants will discuss animals’ habitats and make and place “track traps” to capture some animal tracks for identification. Further discussion follows about how animals adapt to living in specific habitats.

Age Level:
Ages 8 to 12

Life Skills:
Problem solving, critical thinking, learning to learn

Success Indicators:
After completing this activity, participants will be able to:

• Identify one to two common animal tracks.
• Identify habitats of common Michigan animals.
• Name some adaptations that an animal has.
• Explain how adaptations help an animal to survive.
• Explain the importance of animal habitats and adaptations to humans.

Materials & Methods:

Preparation Time: 15–20 minutes
Lesson Time: Two 60-minute sessions
Space: Indoors and outdoors

Materials:

- Field guides for animal tracks
- Soft sand (about 5 gallons)
- Containers for sand (one for each participant
- Bait or lure (birdseed, apples, marshmallow, sardines or similar items)
- Clip boards, paper and pencils
- Camera or phone for taking pictures
- Trail camera (optional)

Background Information:
Youth can learn many things from tracking animals such as their size, behavior and habitat. Identifying animal adaptations provides clues to what they eat, how they move and where they live. This information can be used to manage wildlife for population, preferred habitat, disease and human conflicts.
Vocabulary:

- **adaptation** – The physical attributes that enable an organism to live where it does.
- **domestic** – Trained or adapted to living with humans.
- **feral** – Living wild, not domesticated.
- **habitat** – The place or environment in which an animal or plant normally lives, which includes food, water, shelter and space.

Instructions:

Before the meeting:
1. Review the lesson and be familiar with the activity.
2. Arrange a meeting area with seating in a circle that is about 20 feet across.
3. Identify six to eight different animals that might live in the surrounding area. This might include squirrels, mice, rabbits, numerous birds, raccoons, opossums, along with feral or domestic cats and dogs.
4. Locate the logical habitat for each species identified and the places you think these animals might frequently travel. Look for trails and feeding areas.

During the meeting:
1. Begin by asking participants the following questions:
   - *What do animals need to live?* (food, water, shelter, space)
   - *Where do they live?* (forest, meadow, shore, wetland and other places)
   - *What is that called?* (habitat)
   - *What are the components of habitat?* (What makes up an animal’s habitat?) (food, water, shelter, space)
   - *How are animals adapted to living in their environment?* (camouflage, fur, web feet, beaks, claws and other adaptations)
2. Discuss what habitat is. Explore how different animals have different habitat needs. Mention specific adaptations and explain how they help an animal to survive. (Examples: Deer have hollow hair as an insulator to help them in cold weather. Beavers have clear eyelids to assist seeing underwater.)
3. Explain to participants that they will be going outside to set some “traps.” Bring them to the area that you previously scouted out for animals and their habitats. Give each participant a container and have each fill his or her container with sand. Have the bait or lures in a location where participants can get to them. Read aloud or paraphrase the following.
   - *To make one track trap, spread sand in an area one yard (3 feet) square and about ½ inch deep where you think animals frequently travel. You can also use bait or lure to entice a visitor. Choose some from what I have supplied here for you. Place the bait or lure in the center of the sand “trap.” Remember, even with bait or lure, there is no guarantee that an animal will visit your track trap. Set three to four track traps. Experiment with different trap locations to see which sites are more productive.*
   - Remind participants that these track traps will be set for overnight, and they will be checking them within 1 to 2 days.
4. Continue with the following questions and discussion:
   - What animals do you think live in this area?
   - What animals do you think will visit?
   - Can you predict what sites are best and why?
   - What would make an animal visit one site over another?
   - What baits are best?
   - Does each track trap site look natural?
   - Have you done everything you could to make it look normal to an animal?
   - What else could you do?

Follow-up meeting:
The following steps need to be done at a follow-up meeting (preferably within 1 to 2 days).

1. The next step is to check each track trap site for signs of any animals that visited overnight. Have participants bring clipboards, paper, pencils, field guides, cameras or phones for camera use. Approach each site slowly and allow each participant the opportunity to look for signs of animals. Remind them to look for tracks but also for signs left by wings, tails and other disturbances. Read aloud or paraphrase the following:
   - Write down descriptions of any tracks or other animal signs found at each track trap. Note the number and size of each track.
   - Try to identify the tracks found using your field guides.
   - You may want to take pictures with a camera or phone for later reference.

2. After all sites have been checked ask the following questions:
   - What did you find?
   - Can you identify what type of animal made the track or sign?
   - Did you find more or less signs than you thought?
   - If there is a sign, what made the sign, or what kind of animal was here?
   - Try to determine where the animal came from and where it went.
   - What did the animal do while it was at the site?
   - Did it take the bait or investigate the lure?
   - Predict where the animal went, when it left and if it might return.
   - What locations are best to “trap” animals?
   - How can we best predict where an animal might visit?
   - Is there anything we could do differently to get an animal to visit our site?

Ways to Extend
- Place trail cameras near some of the sites if available as an additional way to “capture” the animal visiting the “track trap.”
- Bring in some actual traps to explain how they are used. Ask the following questions:
  - What do real traps look like? (single/double spring, jaw, body/conibear, metal, cable, and other types)
  - How are real traps used? (blend with environment, permanently catch animals)
  - Who uses real traps? (trappers, nuisance control)
  - Why do people want to trap animals? (sport, recreation, income, animal control)
  - Can we make a trap that we can use? How good would it be? (We could but likely not as good as a manufactured product.)

Check for Understanding:
Ask the group the following questions:
- What are the components of habitat? (food, water, shelter, space)
- Can you give examples of animals and their specific habitats? Examples might include:
  - Waterfowl – marshes and wetlands
  - Grey squirrels – hardwood forests with nut trees
  - Fish – lakes, streams and rivers
- How does understanding habitat help us to better manage for wildlife?
- How does knowing animal adaptations help us to better manage habitat?
Alignment to Science and Engineering Practices

How does 4-H increase science literacy?

Nationally and in Michigan, 4-H has long enjoyed a reputation for engaging young people in positive, experiential (hands-on) and nonformal activities that are inquiry based. The activities in the 4-H Science Blast series can be used to enhance classroom science education. The activities are aligned with the eight Science and Engineering Practices from A Framework for K-12 Science Education. (National Research Council, 2012, p. 42).

The activities in Track Traps & Habitats were evaluated for their alignment with the Science and Engineering Practices by Michigan State University Extension Educator Tracy D’Augustino in 2017.

Alignment to the National Research Council Science and Engineering Practices

<table>
<thead>
<tr>
<th>Science &amp; Engineering Practice</th>
<th>Action</th>
<th>Activity Step</th>
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<tbody>
<tr>
<td>Asking questions and defining problems</td>
<td>Participants discuss habitats and animals.</td>
<td>During the Meeting 1 &amp; 3</td>
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<tr>
<td>Developing and using models</td>
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<tr>
<td>Planning and carrying out investigations</td>
<td>Participants plan where to set the track traps and determine if bait should be used.</td>
<td>During the Meeting 3</td>
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<tr>
<td>Analyzing and interpreting data</td>
<td>Participants capture data, record the tracks, and determine which animals visited the site. Participants discuss why the animals might have visited the site.</td>
<td>Follow-up meeting 1–2</td>
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<td>Using mathematics and computational thinking</td>
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<tr>
<td>Constructing explanations and designing solutions</td>
<td>Participants discuss why they think certain animals visited the sites where their track traps were set up.</td>
<td>Follow-up meeting 2</td>
</tr>
<tr>
<td>Engaging in argument from evidence</td>
<td>Participants discuss animals, their adaptations and habitats.</td>
<td>Check for Understanding</td>
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<tr>
<td>Obtaining, evaluating, and communicating information</td>
<td>Participants learn about habitats, where animals live and why they visit certain areas.</td>
<td>Entire lesson</td>
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References & Resources:

Michigan Department of Natural Resources, Project Wild: http://www.michigan.gov/dnr/0,4570,7-153-10369_51120---,00.html


The Nature Conservancy, Animal Species Profiles: https://www.nature.org/newsfeatures/specialfeatures/animals/

Skyenimals, Animal Habits for Kids: http://www.skyenimals.com/browse_habitat.cgi

Acknowledgements:

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