Nature Detectives Resource Packet

Encourage both children and adult learners to become nature detectives by observing a specific outdoor area and finding evidence of the animals that live there!

This packet includes:


- **Nature Detectives Recording Sheets**, developed by the Educator Resource Center at the Cleveland Museum of Natural History

---

**Nature in the City: A Guide to Leading Nature Activities with Young People**

*Nature in the City* is an innovative educational program designed to open the eyes of young people to the natural diversity that thrives around them, wherever they may live — city or suburb. Developed by the Cleveland Museum of Natural History, *Nature in the City* is intended for use by teachers, homeschool parents, youth organizations and others who work with grade-school-age children. The program provides a range of activities, many of them game-oriented, that center on an outdoor Field Site. These activities help children develop observation and critical thinking skills as they learn real-world, hands-on science lessons. At the heart of the Nature in the City program is the belief that providing children with opportunities to experience the joy of discovery in nature can be the start of a lifelong appreciation of the natural world.

Purchase a copy: https://www.amazon.com/dp/0692838147

---

To learn more about the Educator Resource Center at the Cleveland Museum of Natural History, please visit:

https://www.cmnh.org/learn/educator-resource-center
Good detective work is important in understanding animals. Look for clues that tell you not only that they exist but also how they exist.

Missions:
• To discover that the presence of an animal can be detected without observing the animal itself.
• To practice identifying animals from animal evidence.
• To learn baiting techniques useful in collecting animal evidence.
• To become more comfortable in handling, caring for and observing live insects and other invertebrates.
• To speculate about what happens to animal evidence.
• To discover that human beings are animals.
• To become more conscious of the growing problem of human litter and what individuals can do to help the situation.

At the Lab

Discussion
During this visit to the Field Site, you will be looking for animal evidence, rather than animals themselves. Discuss what kinds of evidence you may see at your Field Site. (Review your Field Site inventory to jump-start your discussion.) Group examples under the following major categories:

• Animal homes (Examples: nest, burrow, web)
• Parts of an animal’s body (Examples: bone, fur, feather, discarded skin)
• Droppings
• Tracks
• Evidence of animal activity (Examples: webs, mucous trails, partly eaten plant or animal material, holes, scratches or gnaw marks)

After the discussion, make a chart for “The Search.” There should be a column on the chart for each of the five major categories above.

<table>
<thead>
<tr>
<th>Animal homes</th>
<th>Parts of animals</th>
<th>Droppings</th>
<th>Tracks</th>
<th>Evidence of activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
At the Field Site

The Search
Look for animal evidence. Record what you find in the proper column on your chart.

Detective Work
The following is a list of useful techniques for observing and collecting insects and other invertebrates:

- Leave a yellow bowl with water in a partially sunny spot.
- Paint honey or molasses on a tree.
- Hide old fruit or anything sugary among the plants.
- Bury a bowl so that its top is level with the surface of the ground. (You have made a pitfall trap.) Add a piece of banana or beer to make the bowl even more attractive. Cover with a piece of wood propped up by small stones.
- Smooth out the dirt in one area and bait with food, or bait after a fresh snowfall. Look for tracks.
- If you have dead trees, peel away some of the bark and see what’s underneath.
- Observe visitors to blooming flowers.

Check the baits as early as possible the next day. Note the number, kind and direction of any animal tracks. Draw pictures of them. Look for insects and other invertebrates in the water trap, on the tree, on the fruit, in the pitfall trap and around the baits on the ground. Collect in a container a sample of each kind of insect. (Possible containers: plastic food container, zip-seal baggie. Do not use glass. Don’t forget that animals need air. Either poke tiny holes in the lid of the container or secure fabric over the opening of a container with a rubber band.)

Place bird seed feeders or hummingbird feeders at your Field Site.

Plan on returning your animals to the Field Site after a period of observation.

For the very adventurous, set up a nighttime light trap. It’s as simple as placing a white sheet or blanket out on a fence. Ideally, you should shine a light on the sheet. You’ll be amazed at what you see in the morning!

Helpful Tip
Save your empty plastic jar for a useful temporary home for observing animals.
**At the Lab**

**Discussion**
What will happen to each item of animal evidence that you have listed on your charts? (Examples: the wind blows away fur and feathers, rain erases tracks, animal wastes decay to become a component of the soil.)

Did you find any litter at the Field Site? Is litter animal evidence? Look up the word “animal” in the dictionary. Are you an animal? Remember to pick up any litter you find and dispose of it properly.

**Leader:** Point out that human beings are mammals and therefore are members of the animal kingdom.

Do you remember any evidence that a human being has visited your Field Site? Did you include human evidence on the team chart? What will happen to this evidence? Is there anything you can do about human litter? Consider the 4 Rs: Rethink, Reduce, Reuse and Recycle.

**Leader:** Discuss the relative time for the natural decay of solid waste. Cans will not be completely decomposed for 100 years, aluminum for 400 years, 4,000-year-old glass has been found in archaeological excavations. Plastic pollution such as bags and bottles never really goes “away,” it simply breaks down into smaller pieces.

**Follow-up Detective Work**
Try to identify the animal tracks you have drawn and the animals you have collected. If any of these animals are not already on your Field Site inventory, add them.

**Alternate Activity**

**Creative Cartoon**
Using clues from your detective work, draw a cartoon strip in your journal that tells a story about one of the animals that visited the bait.
Journal Activity

Plant of the Week: ______________________
Bug of the Week: _______________________
Word of the Week: _____________________

Word Review (fill in the blanks):

evidence, speculate
If we have collected data and think we have enough __________, we can __________ about what will happen in the future.

gnawed, droppings, bait
If we set out ____________ and come back later to find that some animal has __________ it, we then have to make a detailed study of all the evidence, such as tracks or _______________, so that we can eliminate some of our guesses and perhaps find out exactly what animal visited the Field Site.

clues, techniques, baiting
Using the ______________ we have learned for ______________, perhaps we can find some ______________ that will tell us what animals visit the Field Site when we are not there.

Notes

______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
______________________
Look all around you. What evidence of animals do you see? Record your observations in the T-Chart.

<table>
<thead>
<tr>
<th>EVIDENCE</th>
<th>TALLY MARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Homes</td>
<td></td>
</tr>
<tr>
<td>Animal Parts</td>
<td></td>
</tr>
<tr>
<td>Animal Tracks</td>
<td></td>
</tr>
<tr>
<td>Animal Droppings (Scat)</td>
<td></td>
</tr>
<tr>
<td>Evidence of Animal Activity</td>
<td></td>
</tr>
</tbody>
</table>
Look all around you. What evidence of animals do you see? Record your observations below.

Animal Homes  Animal Parts  Animal Tracks
Animal Droppings (Scat)  Evidence of Animal Activity
NATURE DETECTIVES

Date: ________________

Location: _____________________________________________________

Look all around you.
What evidence of animals do you see?
Circle every item that you find.

Animal Homes

Squirrel Nest

Wasp Nest

Spider Web

Bird Nest

Burrow

Tree Hollow

Animal Parts

Bones

Feathers

Fur

Animal Tracks

Animal Droppings (Scat)

Evidence of Animal Activity

Holes in Seeds/Nuts

Insect Gall

Holes in Leaves

Bark Beetle

Holes in Ground