

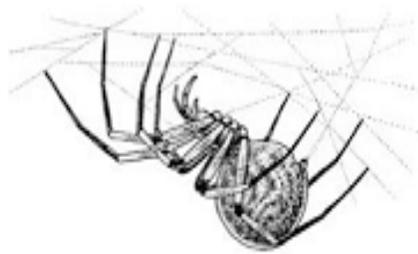
# Wild Foods

Students will look for evidence of animals feeding—from woodpecker holes to insect-chewed leaves. They will try to determine which animals were feeding and what they were eating. With some perseverance they should also be able to observe feeding behavior—birds coming to feeders, spiders in their webs or insects on plants. Students will learn the importance of a steady food source for healthy animal populations. They will also learn which animals eat plants, meat or both, and they will try to find specialists—animals that eat only one or two food items.

## Background

All animals have to eat to survive. Some animals have specialized adaptations to help them obtain particular types of food. Woodpeckers have a strong, sharp bill to drill through wood to reach the insects that they like to eat. Bobcats have sharp teeth and claws to help them catch and hold onto their prey. Butterflies have a long coiled tongue that they can unfurl to reach nectar deep within flowers. Other animals are generalists—they will eat just about anything.

The objective of this activity is to learn about what foods animals eat and how they go about obtaining their food. In the classroom, foods and feeding activity will be discussed. At the park, feeding activity and evidence of feeding will be observed.



## Procedure

### *Before the trip:*

1. Lead a discussion about how animals can be classified as plant eaters (**herbivores**), meat eaters (**carnivores**) or animals that eat both types of foods (**omnivores**).
2. Brainstorm examples of each consumer type. For example, discuss deer as herbivores, tigers as carnivores and pigs as omnivores. Discuss what classification (most) people fall into.
3. Engage the class in a detailed discussion about some less obvious or less traditional carnivores and herbivores. One way to focus this discussion is to get away from mammalian and (eventually) vertebrate examples. Non-traditional carnivores might include insect eaters like spiders, many birds (for example, woodpeckers), some fish (like bass) and frogs. Some less traditional herbivores could include geese and many insects. Some students (and some classrooms) will have fish tanks that include algae-eating fish or snails.
4. Discuss the signs animals can leave behind that show *what* they have been eating. Examples might include insect damage to leaves or other parts of plants, empty nut shells, small piles of feathers, chewed bones, empty mussel shells, owl pellets and animal droppings.
5. Discuss the signs that animals leave behind to show *how* they've gotten their food. Examples might include teeth marks on bones, woodpecker damage to trees, spider webs, trees cut and stripped by beavers, and deer **browse lines**.
6. Organize teams of three or four students who will work together in the park. If possible, have a camera available to record "signs."

## Grade Levels: 3-10

### Objectives

Students will:

- *observe* and *understand* the different food preferences and feeding strategies of animals.
- *collaborate* to *collect, assemble* and *present* (orally and in written form) observational information;
- *record* field observations;
- *investigate* different animal groups;
- *determine* how animal adaptations are related to food preferences; and,
- *hypothesize* how animals could be affected by (and may themselves affect) their environment.

### Materials

*For the class:*

- various field guides

*For each team:*

- worksheets, notebook
- digital camera
- park map

*To wear:*

- appropriate seasonal clothing.

### Where

All parks and several natural areas. Check with staff for good locations.

### Credits

J. S. Beard, Virginia Museum of Natural History

### When

All seasons, however spring or fall is best.

## Wild Foods

### At the Park:

1. Assign each team a specific area to investigate. You may want different teams to look in slightly different habitats. For example, there might be an upland forest team, a pine forest team, a marsh team and a grassy field team.
  2. Each team looks for evidence of animals feeding. The evidence could include actually seeing an animal feeding (such as birds at a feeder or a spider in its web) or it could be signs showing what they ate or how they fed (see above). The evidence should be described, drawn or photographed. Depending on skill level, observations could also either be written down or simply noted. In the latter case, make a few detailed observations rather than many less detailed ones. Be sure to note as specifically as possible what is being eaten, what is doing the eating and how you can tell.
  3. Look for areas where animal eating has changed a habitat. A good example in many Virginia parks is damage to pine forests caused by pine bark beetles. Deer have also eaten much underbrush in many parks. Note and describe these areas.
  4. Have the class assemble for a meeting and discuss what they have seen and found. If there have been any particularly exciting finds (maybe a tree felled by a beaver, for example) the whole class might visit it before leaving.
2. Have groups of students investigate various animal groups (such as spiders, woodpeckers and butterflies) for which they found feeding evidence. Have the students give an oral report on their group to the class.
  3. Make sure the students are focusing on adaptations that reflect an animal's food preferences.
  4. Discuss various habitat changes and what species would either be hurt by or benefit from the change. Which animals would be most affected by change (for example, specialists such as squirrels can be affected by hardwood mortality from gypsy moths)? *Which animals would be least affected (generalists, such as raccoons, can eat almost anything)?*
  5. Discuss the relative abundance of evidence for carnivorous versus herbivorous feeding. *Which would you expect to be more common? Why?*

### Follow-up:

1. Have students choose a description, drawing or photo and write a short story about what happened and what animal was involved.

### Time Required

At least two hours are required at the park.

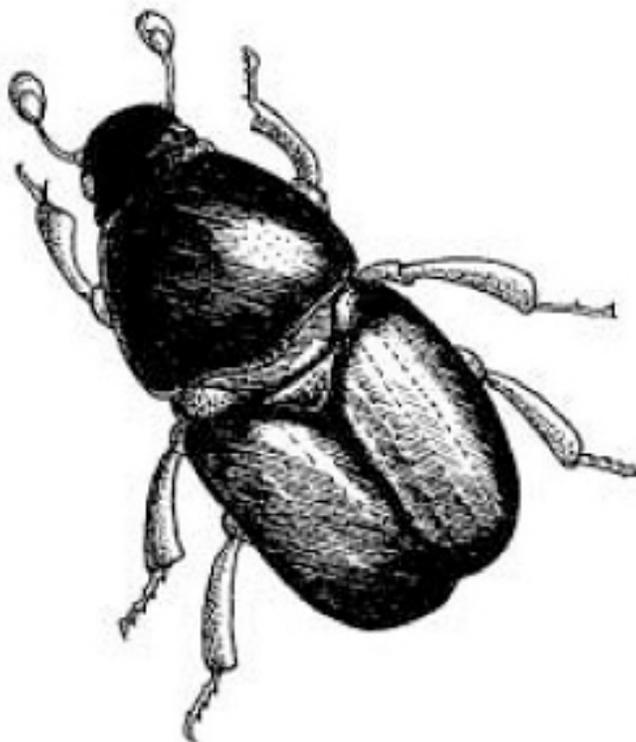
### Extensions

#### For younger students:

- In turn, have students act out animals as they eat. Other students will try to guess the animal and what it is eating.

#### For older students:

- Investigate animal mouthparts in detail. Discuss how tooth shape, jaw construction, and other mouthpart adaptations are related to feeding behavior. Examples could include carnivore teeth, the extensible jaw of a snake, and the biting, chewing, piercing and sucking mouthparts of insects, spiders and other invertebrates.



Standards of Learning: Science: 3.1, 3.4, 3.5, 3.6, 3.10, 4.1, 4.5, 4.9, 5.1, 5.5, 6.1, LS.1, LS.4, LS.5, LS.7, LS.8, LS.9, LS.10, LS.11, BIO.1, BIO.7, BIO.8, English: 3.7, 5.1, 5.7, 6.1, 7.1, 10.1, 10.5, Computer/Technology: C/T.3-5.1, 6-8.1