

## Learning by Nature

By Peggy Ashbrook

Children learn to love the natural world through positive experiences. Getting them comfortable with nature through encouraging and facilitating positive outdoor experiences early in life can bring young children a step closer to becoming the environmental stewards who know they can have a positive effect on their surroundings. Sowing the seeds of environmental awareness and stewardship can be simple; asking students to draw pictures of and discuss their favorite outdoor experiences; scaffolding outdoor time gradually to greater levels of outdoor immersion; and pointing out surprises or discoveries like a sprouting plant, moving clouds, and a line of crawling ants will all increase a child's familiarity with nature. Children will want to return when outdoor time is comfortable, safe, interesting, and memorable.

Understanding the effect of human activity on the environment is part of the National Science Education Standard F: Science in Personal and Social Perspectives, changes in environments (NRC 1996). Asking questions and defining problems, planning and carrying out investigations, and analyzing and interpreting data are some of the science skills emphasized in the new *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (NRC 2011).

Birds are one of the most common living organisms that children can see in the wild—whether they live in a rural, suburban, or urban setting—and in any geographic area. For this reason, designing lessons about the needs of birds is a great way to teach young students an awareness of the environment. Students can observe drinking and bathing behavior at a birdbath, nearby pond, or puddle, and it can be documented and analyzed for patterns. Through this, students can develop habits of observing and looking for evidence to support their ideas about living organisms while developing an attitude of stewardship toward the environment.

A walking field trip to inventory the existing water sources available to wildlife may raise the class' awareness of how development has covered many of the small streams and creeks in an urban area, or how agriculture has altered the plant community around streams, limiting water sources available to birds and other wildlife. Assure students that wild animals are able to find water sources without human help except in times of drought or extreme changes to the environment and that birds may not come to a birdbath if there are many natural sources of water.

Have students record how many birds or other animals they observe, if any, at natural or human-provided water sources and the behavior ob-



served (drinking or bathing). Establishing a school birdbath and adding the outdoor task of stewardship of replenishing water to the job chart will give an additional reason to go outside and collect data. Perhaps no animals will come to the water—this is data, too, and students can wonder where they get their water. Daily record-keeping and tending of the water supply will make children aware of the needs of animals, which is a beginning of stewardship of the natural environment. ■

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### References


- National Research Council (NRC). 1996. *National science education standards*. Washington, DC: National Academy Press.
- National Research Council (NRC). 2011. *A framework for K–12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: National Academies Press.

## Bird Watchers

### Objective

To collect data on natural water sources available to local wildlife and observe animals at a natural or human-maintained water source.

### Procedure

1. Ahead of time, search the immediate school neighborhood for sources of water, both natural and human-provided (e.g., streams, ponds, and birdbaths) to become familiar with these sources. (If natural water sources are plentiful, a birdbath may attract only a few birds.)
2. Discuss living organisms' need for water with students during snack or lunchtime, or while getting drinks from a water fountain. Ask students if they know where wild animals that live near the school might get a drink of water. Tell students that they can make observations of animals at water sources on a walking field trip, or by maintaining a water source on school grounds.
3. If possible, take students on a walking field trip to find the locations of water sources described by students or located in your search. Follow your school guidelines for field trips. Have them draw or write about their observations of the water source and any animals using it. Tell the students that they may set up a birdbath near the school. 
4. Set up a birdbath near the school, in a location that can be seen from a window or the playground (see Internet Resources). Allow a week to pass for animals to become aware of the water before beginning to record observations.
5. Add the jobs of "water changer" and "observer" to the class job list to make changing the water part of the daily routine. Prepare an animal observation log or data collection sheet (see NSTA Connection) for students to record observations every day, noting the date, time, general weather observations, and animal life observed, if any. Tell students that scientists record their observations by writing and drawing what they notice so they will be able to look at it later to remember what happened each time. Children can draw a picture of the animal behavior observed (drinking or bathing) and ask for help with writing if needed. Choose a time of day for students to observe when animals are often at the water source.

### Materials

- Drawing materials
- Animal observation log or data collection sheet for animal observations (see NSTA Connection)
- A birdbath (commercially available or just a flower pot saucer)

6. After a period of a week or month, have the class count the number of days that animals were observed and what the animals were doing.

The class' observations may raise more questions than they answer. Do only birds come to your water source? Does that mean there are no other wild animals in your area? How many different kinds of birds have the class observed? Do the animals come to the water source at particular times of day, and if so, why? What does it mean if no animals are observed at the birdbath? Some of these questions can be answered by searching online for lists of local birds and other wildlife, but some questions can only be guessed at without a lot more study and data collection.

### Internet Resources

- Cornell Lab of Ornithology, All About Birds, Other Ways to Attract Birds  
[www.allaboutbirds.org/Page.aspx?pid=1144&ac=ac](http://www.allaboutbirds.org/Page.aspx?pid=1144&ac=ac)
- National Wildlife Federation Kid's Page  
[www.nwf.org/kids](http://www.nwf.org/kids)
- North American Association for Environmental Education  
[www.naaee.org](http://www.naaee.org)
- Project Learning Tree  
[www.plt.org](http://www.plt.org)
- Project Wild  
[www.projectwild.org](http://www.projectwild.org)
- Roots & Shoots for Young Children  
[www.rootsandshoots.org](http://www.rootsandshoots.org)

### NSTA Connection

Download an animal observation log at [www.nsta.org/SC1203](http://www.nsta.org/SC1203). Share your wildlife observations on the Early Years blog, [www.nsta.org/earlyyears](http://www.nsta.org/earlyyears).

