

STEM in the lab

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EARTH DAY: Feed the Birds



GRADE LEVELS

This activity is appropriate for grades K-5.



MISSION

Create a bird feeder out of a milk carton.



VOCABULARY

ORNITHOLOGY: the scientific study of birds.

EARTH DAY: an annual event celebrated around the world on April 22 to demonstrate support for environmental protection.

RECYCLING: the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products.



MATERIALS

Teachers should provide:

- » Empty milk carton (*Teachers will need to collect one milk carton for each of their students from their school lunchroom*)
- » Scissors
- » Glue
- » Supplies for decorating (*Make sure that anything you use to decorate the birdhouse is safe for birds. Try to stick to as many natural materials as possible.*)

Included in your kit:

- » Dowel
- » Yarn
- » Bird seed
- » *Why Should I Recycle?* by Jen Green
- » Masking tape

ABOUT THIS ACTIVITY

Our planet is an amazing place, but it needs our protection! We all need to do our part to reduce, reuse or recycle the things we use every day. Taking care of the Earth is so important that the whole world has dedicated a day to remind us of our responsibilities. Dating back to 1970, people have set aside April 22 to remind everyone of things they can do to keep our Earth healthy for many generations to come. From turning off water or lights, to planting a tree, or even riding a bike instead of taking the car, we all can be part of a global opportunity for change.

At Idaho National Laboratory, scientists and engineers lead the way in creating innovative ideas for renewable energy solutions. The National Reactor Innovation Center (NRIC) is just one of many groups at INL that is working to create change for a sustainable future. One project that NRIC is working on involves advancing nuclear energy technologies to decrease harmful air pollution.

We can all help reduce pollution. Recycling is a great way to help decrease the amount of pollution that is put into the air. In this activity, you will learn about recycling by turning a lunchroom milk container into a bird feeder.

INSTRUCTIONS

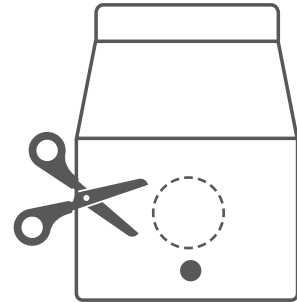
Recycling is a process where used materials can be converted into new materials. Rather than throwing items away, many can be reused for future use. By saving the milk container from your school lunch, you are recycling. In this activity, you will recycle your milk container and turn it into a bird feeder.

PREPWORK

Teacher: Clean out the carton with water and soap. Let the container dry completely. Before you start the activity, review what recycling is by reading aloud the book *Why Should I Recycle?* by Jen Green.

INSTRUCTIONS

- 1 Carefully, cut a small hole (circle) in the side of your carton. The opening should be at least one inch above the bottom of the container and at least two to three inches in diameter.
- 2 Use masking tape to cover the sharp edges of the opening so the birds don't get harmed when coming into your bird feeder.
- 3 Cut a small hole below the opening and insert a wooden dowel to build a perch for the birds. Secure the stick in place with glue.
- 4 Loop yarn around the neck of the milk container and tie a knot. Leave a long tail of yarn to attach the bird feeder to a tree.
- 5 Once you are done, start decorating or coloring your bird feeder. Make sure all the materials are safe for birds. Good choices are natural materials such as pebbles, shells, and tree bark.
- 6 Fill the bird feeder with bird seed.
- 7 Set up the bird feeder outside. You can hang it in a tree or let it sit on a table. Observe the birds that come to your feeder.



? QUESTIONS

- » *What do the birds look like that visit your bird feeder?*
- » *Which birds can you identify?*
- » *Can you differentiate them by their appearance or their songs?*
- » *If birds do not show up to your feeder, try moving it to different locations where a bird might feel safer.*

THE SCIENCE BEHIND IT

Once you set up your bird feeder, it may take a while before you see birds visiting. Birds first have to get used to the bird feeder, so they know it is safe. After a couple of days, you should start seeing birds come to your bird feeder. They will come for the bird seed that you have provided for them. If you have binoculars and a field guide for birds, you might be able to identify some of the birds you saw. The type of birds that live in your outdoor space depends on the area where you live.

Different places on Earth have different birds living there. If you tested different bird seeds in your bird feeder, you might have noticed that different birds prefer different seeds. This is because every animal has their own special diet and can only eat certain things. Some seeds that birds like to eat are millet or sunflower seeds.

Every animal on our planet, including birds and humans, needs food, water, air, and shelter to survive. Animals need to eat regularly to get energy for their bodies to function. In the wild, birds build nests made of twigs and other materials as their shelter. This is where they lay their eggs and raise their young. Some birds also live in hollow trees. Building a place that provides birds with some of the things they need to survive, such as a bird feeder, is a great way to learn more about the birds in your area. A bird feeder will attract birds, allowing you to get a closer look without disturbing the birds. When bird watching, features such as the bird's size, plumage color, or beak shape help to identify specific bird species. People who study birds are called ornithologists. They try to learn as much as they can about each of the different types of birds. They study what each bird looks like, what they eat, where they fly, and how they sound.



EXTENSIONS

- » In addition to using your bird feeder to find out what kinds of birds live in your neighborhood, you can also find out what kind of food these birds like best. Instead of a bird seed mix, put just one kind of bird seed into your bird feeder. Some seeds to try are sunflower seeds, millet, or corn. Then observe the bird feeder for about one week to see which birds visit the feeder. The next week, change the type of bird seed in the feeder and again observe the birds that come to your bird feeder. Test several different seeds this way. Which seeds are most popular? Do some types of birds prefer a specific seed?
- » Build several bird feeders and decorate them each with different colors. Hang them up in a tree and observe how many birds come to each bird feeder. Is there a certain color that the birds are more attracted to compared to the others?
- » Compare the types of birds that come to your feeder. Observe their size, shape, or behavior. How are they different or similar to each other?
- » Find out more about the types of birds that come to your feeder. Where else in the world do they live? What do they usually eat? Where do they build their nests? Are they common birds or endangered? Create a report about one specific type of bird with all the information that you can find.

RESOURCES

- » <https://inl.gov/inl-initiatives/partnering-with-inl/k-12-stem/resource-library/>
- » <https://www.sciencebuddies.org/stem-activities/build-bird-feeder#summary>
- » <https://www.epa.gov/recycle/recycling-basics>

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For information on grants, training and student opportunities, curriculum ideas, and other resources, please visit stem.inl.gov.