

Bird Feeders

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Overview: Students can use recycled and natural materials to create bird feeders. Students can observe a variety of birds and learn about patterns of seed dispersal, different habitats, migration and life cycles. This lesson integrates ELA, Math and Science standards and can be conducted on multiple grade levels. This is a good activity for the fall and winter months, that can carry on into the spring.

Targeted Grade: 2

Additional Connections: K, 3, 5

| NGSS Standard(s) | CT Social Studies Standards |
|---|---|
| 2-LS2-2. Seed Dispersal 2-LS4-1. Diversity of life in different habitats. | GEO 2.1. Construct geographic representations GEO 2.6. Characteristics of a place/region |
| Common Core Math Standard(s) | Common Core ELA Standard(s) |
| 2.MD.1-4 Measuring lengths and Comparing lengths 2 MD.9-10. Generate Data and Drawing graphs | W.2.2-3 Writing explanatory texts and narratives W.2.5-8. Research & Writing Projects SL. 2.1. Collaborative conversations |

The standards presented here are suggestions only; you may identify others! Please refer to your grade level at Next Generation Science Standards (<http://www.nextgenscience.org/search-standards>) and Common Core State Standards (<http://www.corestandards.org/>).

This lesson has been designed to scaffold student learning using the following to connect students' understanding of science:

| Scientific and Engineering Practices of NGSS | NGSS Crosscutting Concepts |
|---|----------------------------------|
| <i>Asking questions and defining problems</i> | <i>Patterns</i> |
| <i>Planning and carrying out investigations</i> | <i>Cause and effect</i> |
| <i>Using mathematics and computational thinking</i> | <i>Systems and system models</i> |
| <i>Constructing explanations and designing solutions</i> | <i>Structure and function</i> |
| <i>Obtaining, evaluating, and communicating information</i> | |

Materials needed:

- Bird Seed
- Toilet paper tube, paper towel tube or pinecones
- Peanut butter or Crisco (if allergies exist)
- String or rope
- Plastic gloves
- Bird Identification books and websites

Check with local farms, stores or parents for donations of materials. Students could collect toilet and paper towel rolls from home to bring in or explore school grounds for pinecones.

Suggested Procedure:

1. Each student takes a tube or pinecone and covers it with either peanut butter or Crisco.
2. Student covers tube or pinecone with bird seed.
3. Students can tie a piece of string to bird feeder to hang it from a tree or may leave it as is.
4. Students can hang or place their bird feeders around school grounds from trees and bushes.

Standards-Based Curricular Connections: Bird Feeder lesson can support your curricular goals in many ways including, but not limited to, the example below

- **2-LS2-2.** Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
 - Students can create bird feeders to hang around school grounds. Students can monitor bird feeders and look for evidence that would show the dispersal of seeds such as finding bird seeds dropped on the ground. Using this evidence students can conduct research on how birds disperse seeds and what this means for the environment. Students can create “Bird Notebooks” to track which types of birds visit their feeders, and photo journal their research and process. Students could also create a map of the school grounds and where they placed the bird feeders. (W.2.7) (GEO 2.1)
 - Students can mimic animals dispersing seeds by planting seed mix. Some areas might be sprinkled with seeds in the fall and winter, while others covered by varying depths of soil, with areas marked with tags (and photo journaled) to facilitate returning to the same locations in spring. Students can monitor their success by measuring and recording growth of the seeds in the spring. Students could then draw conclusions about the impact seed dispersers and pollinators

have on the environment, and what practices seem to be most successful.
(2.MD.1-4 and 2.MD.9-10)

- **2-LS4-1.** Make observations of plants and animals to compare the diversity of life in different habitats.
 - Students can gather information about the types of birds that live in the area, their preferred habitats and foods and whether they migrate or stay for the winter. Students in groups might learn about different native birds. Students can observe bird feeders to see if they can identify any of the birds they have learned about. If some bird feeders are set up in open areas, field/lawns, at edges of woods or deeper in woods, students can compare the different birds that visit each location. Students can engage in conversations to learn about what makes each bird visit specific habitats. Students could also study other animals that may be attracted by bird feeders (squirrels, chipmunks etc.). (W.2.8., SL.2.1)

Other Potential Connections: The following list provides a general overview of other possible uses for **Bird Feeder Lesson**. Check your NGSS and CCSS standards documents (links provided on page one) to explore how these suggestions may assist in achieving your grade-specific curricular goals.

ELA- Students could create stories or poems about the birds they observe feeding from their bird feeders. Students could read fictional and informational texts about birds around the world. **Check with your librarian for bird books!** (SL.2.5) (RI.2.3)

Art- Students could use items in nature (pinecones, leaves, sticks) to create art such as bird feeders, nests and sculptures. Students could sketch, paint or use clay to recreate birds they've seen feeding from bird feeders.

Food- Students could study the different types of bird seeds that attract different birds. Students could also learn which seeds both humans and birds like to eat and create a trail mix (sunflower seeds, pumpkins seeds etc.)

Social Studies: Students could identify cultural and environmental characteristics of their school grounds. They could explore how the birds that appear in their school grounds may be different from ones that appear in another. They could answer questions such as which environmental characteristics do CT birds like that may not be available for birds in a different state? (GEO 2.6)

Community Involvement- Students could visit the CT Audubon Society or invite a speaker to teach students about different CT birds. Students could bring bird feeders home to observe birds around the community and add to their "Bird Notebooks".

Additional Connections: Grades, Topics, and DCIs



This investigation was written on a 2nd grade level. You could also apply this investigation in other grades, to support your curricular goals. The Disciplinary Core Ideas appear in other grades, allowing similar investigations discussed above to be conducted at other grade levels. You may also use this concept to connect your lesson with other grade-specific standards. Some additional examples to consider are presented here:

| NGSS Standard(s) | CT Social Studies Standards |
|---|--|
| K-LS1-1. Plant and Animal Survival needs K-ESS3-1. Relationship of animals and habitat | GEO K.1. Construct maps |
| Common Core Math Standard(s) | Common Core ELA Standard(s) |
| K.CC.4-5. Counting and Relationship between numbers and quantities. | RI.K.7. Integrating information and Ideas SL.K.1. Conversations with partners W.K.2. Draw/Write Informative texts |

- **K-LS1-1.** Use observations to describe patterns of what plants and animals (including humans) need to survive.
 - Students could investigate the types of foods different animals need to survive. Students could create bird feeders and observe what animals visit the bird feeder. Students could use picture books of different birds as a framework of similarities and differences between them and the birds that visit their feeders. They could also discuss patterns they see with what birds eat and what other animals they have studied eat. (SL.K.1) (RI.K.7)
- **K-ESS3-1.** Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
 - Students can learn about where animals in their area live such as birds, squirrels, and rabbits. Students could then make bird feeders and hang them up on school grounds, and then make observations about visitors to the feeders. To help keep track of where birds feed, students could create maps of their school grounds. Students might count and answer questions of “how many” pieces of evidence they could find. Evidence may include birds’ nests, bird feces or feathers. Students could use drawings or writing to explain why they believe birds live in the places they do. (W.K.2) (K.CC.4-5) (GEO K.1).

| NGSS Standard(s) | CT Social Studies Standards |
|--|---|
| 3-LS4-3. Survival of Organisms | GEO 3.2. Use maps and other representations to explain relationships |
| Common Core Math Standard(s) | Common Core ELA Standard(s) |
| 3.NF.1. Fractions as numbers 3.MD.3. Using graphs to represent data | W.3.7. Research SL.3.4-5. Report on topic or make audio recordings |

- **3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well and some cannot survive at all.
 - Students could conduct short research projects to understand which animals, specifically CT birds, survive well, less well or not at all in our environment. Students could break into teams to study birds that stay through the winter, others that migrate, and ones that can't survive in CT at all. Using bird feeders throughout the fall, winter, and spring, students could observe and document which birds appear in each season. Students could also use maps, or photographs to build evidence. (W.3.7) (GEO 3.2)
 - Using research and evidence, students can report on their findings or create audio recorded stories of the habitats in which birds live and survive. (SL.3.4-5)
 - Using research on birds and observations from the bird feeders students could use fractions to understand what fraction of birds survive in each settings or what fraction of birds migrate. Students could also use picture graphs or scaled bar graphs to answer questions of "how many more or less" birds are in a particular habitat. (3.NF.1) (3.MD.3)

| NGSS Standard(s) | Common Core ELA Standard(s) |
|-------------------------------|--|
| 5-PS3-1. Food & Energy | W.5.8. Gather information from multiple sources SL.5.5. Use multimedia components |

- **5-PS3-1.** Use models to describe that energy in animals' food (used for body repair, growth, motion and to maintain body warmth) was once energy from the sun.
 - Students could make bird feeders and observe as different animals use the food for energy. Using this as a backbone students in groups could investigate the types of seeds that are used for the bird feeder. Using a variety of sources for their research, students could study where each seed comes from and how those seeds use energy from the sun to then become food for the birds. (W.5.8.)



- Students could create diagrams or flow charts to show their understanding of the processes. Students may also represent their findings using multimedia components to explain the main process that the bird seed took to become bird food. (SL.5.5)
- Students might research how some of the same seeds used for bird food and other animal feeds are also used for human consumption.

These suggestions are examples only, and may require adaptation. Check your grade-specific standards to determine whether or not the suggestions provided meet your individual curricular needs.



Bird Feeders lesson was seen in action at: WCAIS – Magnet, Danbury, CT

For more information, contact ctgreenleaf@ctgreenschools.org

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