

Agree >>>> Disagree





Inspire the Next Generation to Feed Wild Birds. Here's How!

Jennifer Fee
Manager of K-12 Programs



The **Cornell** Lab  of Ornithology

To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds.

TheCornellLab 
K-12 Education

Mission: To create innovative K-12 resources that build science skills while inspiring young people to connect to local habitats, explore biodiversity, and engage in citizen science projects.



"This book is an absolute must-read for parents." —The Boston Globe

Last Child in the Woods

Saving Our Children
from Nature-Deficit
Disorder



Richard Louv

Nature Deficit Disorder

Describes the human costs of alienation from nature, among them:

- **Diminished use of the senses**
- **Attention difficulties**
- **Higher rates of physical and emotional diseases**

Implications are spiritual, social, environmental, physical



“I like to play indoors better ‘cause that’s where all the electrical outlets are.”

The Endangered Nature Enthusiast?

- **Childhood experiences are significant precursors for adult activism on behalf of the environment.**
- **As the proportion of people with hands-on emotional attachment to nature shrinks... what happens?**



What influenced you to care about the environment?



What builds environmental identity?



- **Time spent outdoors as a child in a green space**
- **An adult to mentor love of nature**

A group of approximately ten students are standing in a field of tall grass. They are all holding binoculars to their eyes, looking intently in the same direction. The students are dressed in casual summer attire, including t-shirts and a baseball cap. The background is a soft-focus field of green grass.

“I have seen 30 students get as excited about spotting birds as they do about playing their PS2s.”

(Cornell Lab Field Test Teacher)

The **Cornell** Lab K-12 Education



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Investigating Evidence
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Your feeder birds can help you teach science content!



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**Nature
Connection**



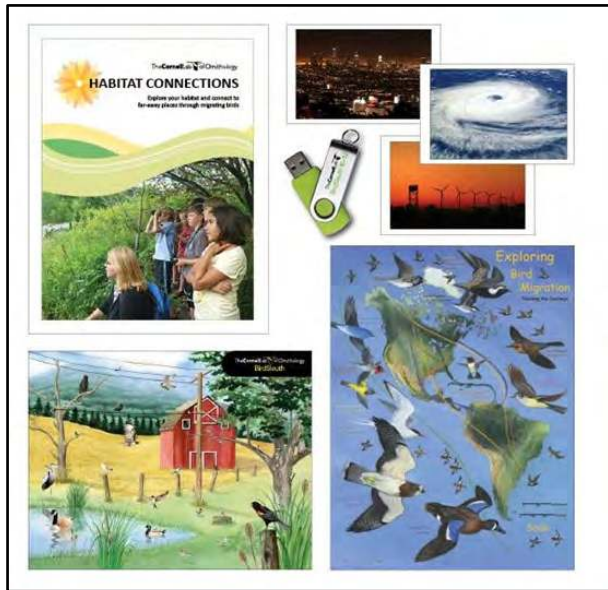
**Citizen
Science**



**Inquiry
Investigations**

K-12 Outreach

Curriculum Resources



kits & free downloads

Educator Training



online & in person

Next Generation Science Standards

✓ Crosscutting Concepts

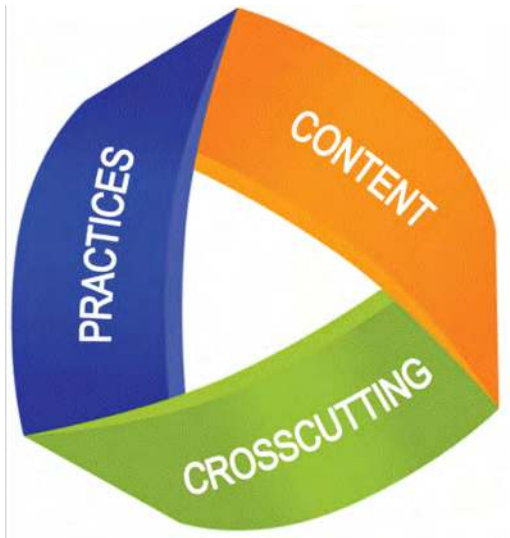
- ✓ Scale, proportion, and quantity
- ✓ Structure and function
- ✓ Stability and change

✓ Scientific Practices

- ✓ Asking questions
- ✓ Planning and carrying out investigations
- ✓ Analyzing and interpreting data
- ✓ Using mathematics and computational thinking
- ✓ Obtaining, evaluating, and communicating information

✓ Content

- ✓ **LS2: Ecosystems: Interactions, energy, and dynamics**
- ✓ **ESS3: Earth and human activity**



STEAM



SCIENCE



TECHNOLOGY



ENGINEERING



ARTS



MATHEMATICS

Why Birds?



What STEAM content can children learn from feeder birds?

- Diversity & Adaptations
- Habitats, Ecology, Food Webs
- Bird Identification & Citizen Science
- Human Impacts
- Scientific Skills



PINE WARBLER



PINYON JAY



PURPLE FINCH



PYGMY
NUTHATCH



PYRRHULOXIA



RED-BELLIED
WOODPECKER



RED-BREASTED
NUTHATCH



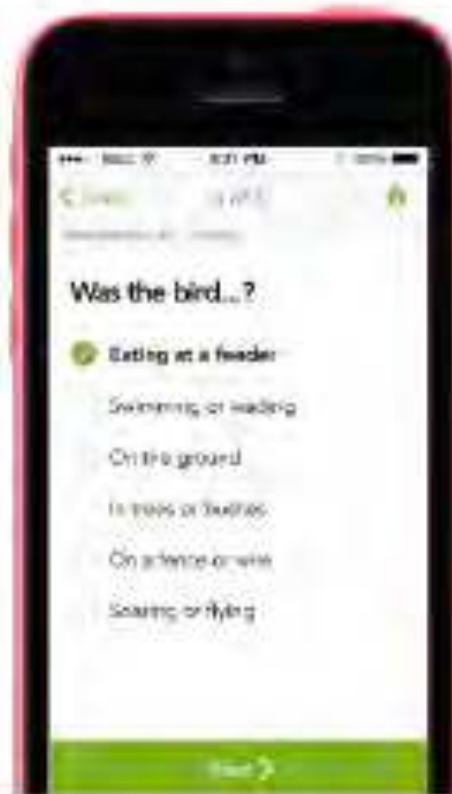


What species can you recognize?



What bird is this?

Merlin Bird ID Wizard





Northern
Flicker



Black-capped
Chickadee



2 chicks in a nest



Northern Cardinal



Cedar Waxwing



Blue Jay



Please rank the educational goals...

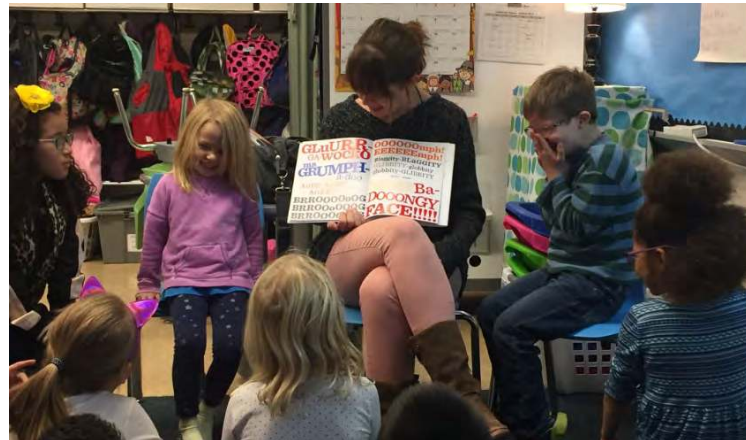
(322 educators, mostly public school teachers)

- Getting students outside and connected with nature as much as possible.
- Contributing to citizen science.
- Meeting education standards.
- Creating scientifically literate students.
- Engaging kids with Science Technology Engineering and Mathematics (STEM).
- Using technology in meaningful ways



Classroom Challenges

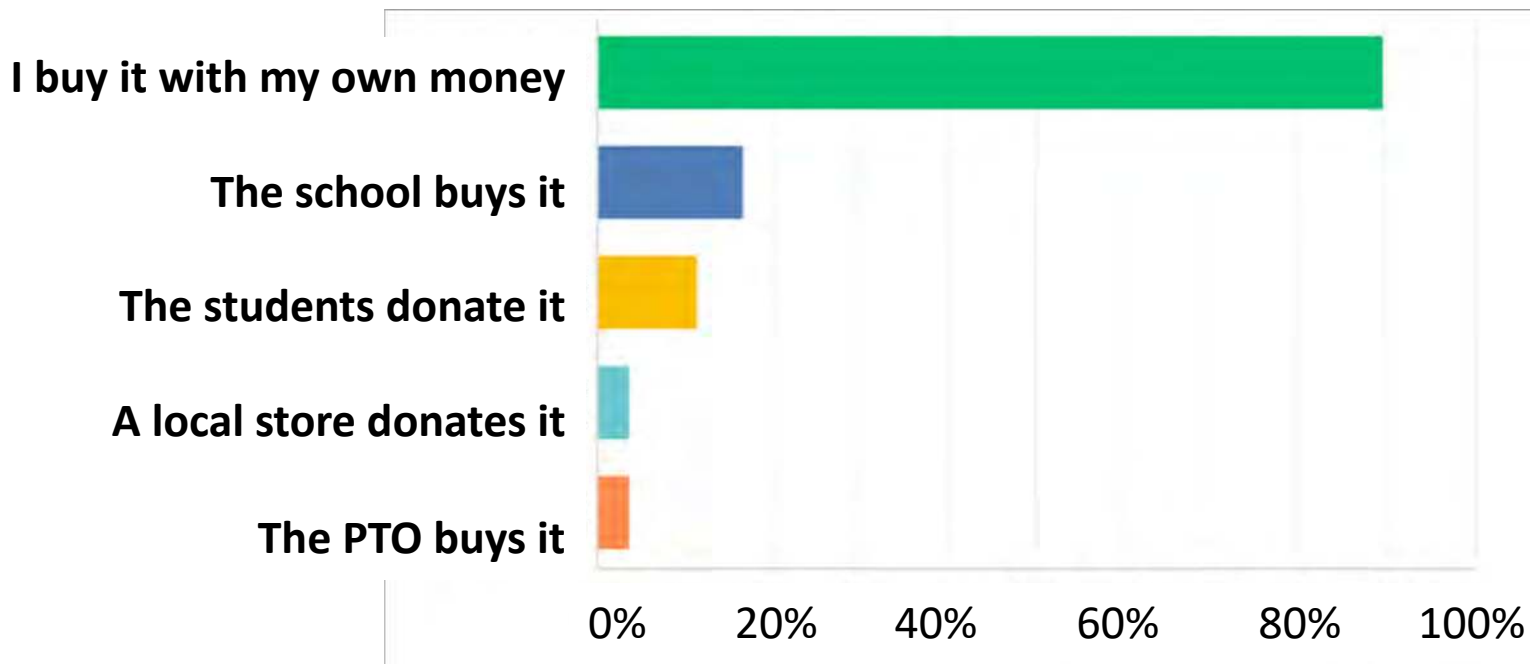
- Time
- Access and funding
- Balance of meeting standards and engaging kids
- Lack confidence to successfully do the activities



How do teachers pay for bird seed?

How do you pay for bird seed for your school feeders? (check all that apply)

N= 78



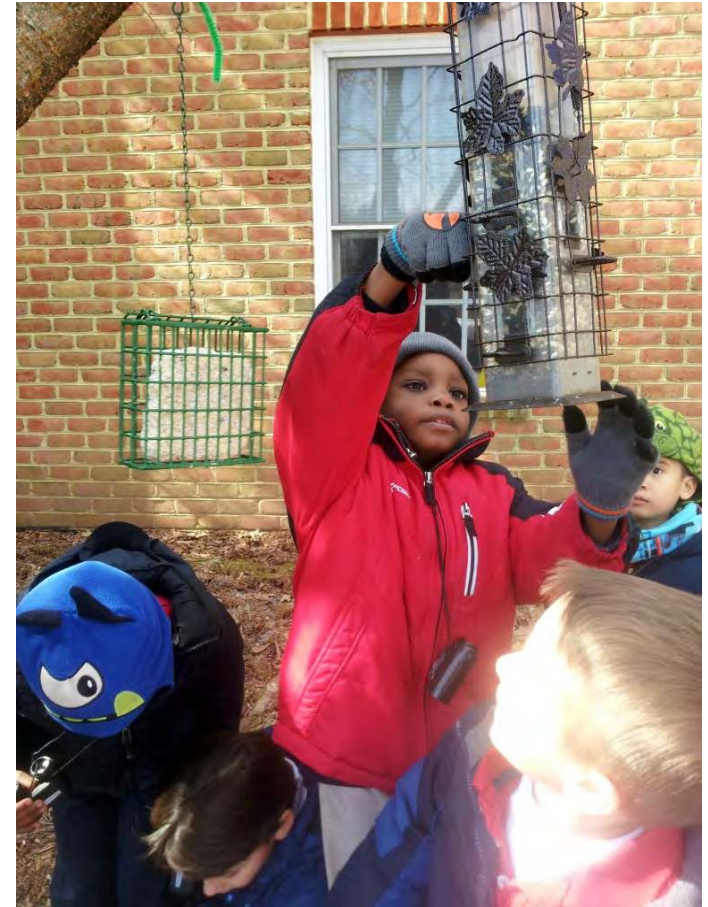


Partnership Overview

Cornell Lab of Ornithology
and
D&D Commodities Ltd.

Partnership Objectives

- Inspire a new generation to love feeding birds
- Create innovative, useful, free content for teachers and distribute it widely
- Create visibility for and inspire goodwill about D&D brands



Science Investigations



CLO Citizen-Science Projects

1. Observe birds and their habitats/behaviors
2. Collect data
3. Enter data online
4. Retrieve and view online data



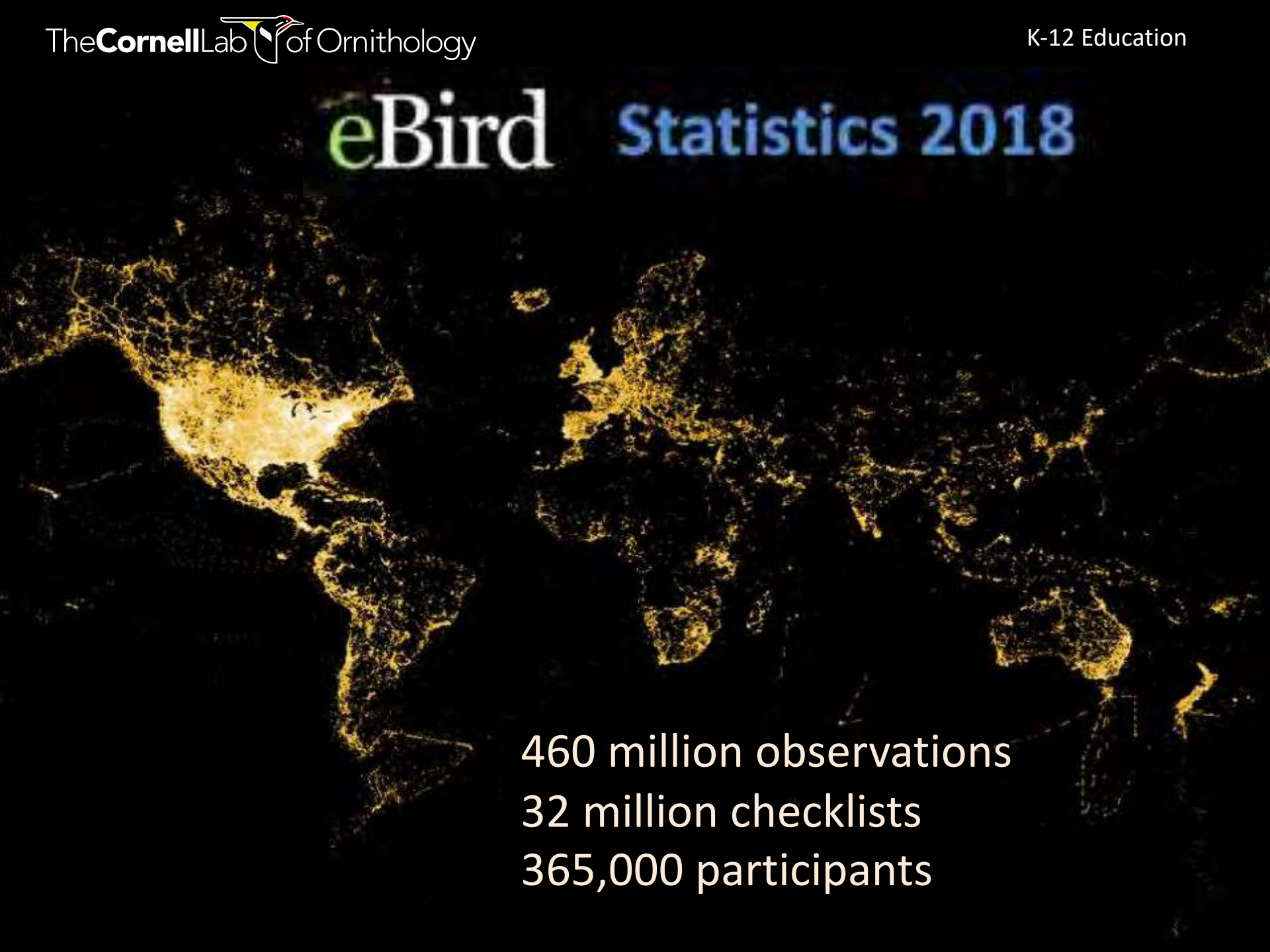
Citizen Science as motivation. What is it?



Gathering Data Together



eBird Statistics 2018



460 million observations
32 million checklists
365,000 participants

eBird Mobile



Pt. Pinos--seawatch only
Apr 27, 2015, 2:15 PM

All Likely **Checked - 5**

🔍 # species name/code Cancel

Are you submitting a complete checklist of the birds you were able to identify? ⓘ

ⓘ

Number of observers

Duration (minutes)

Distance (km)

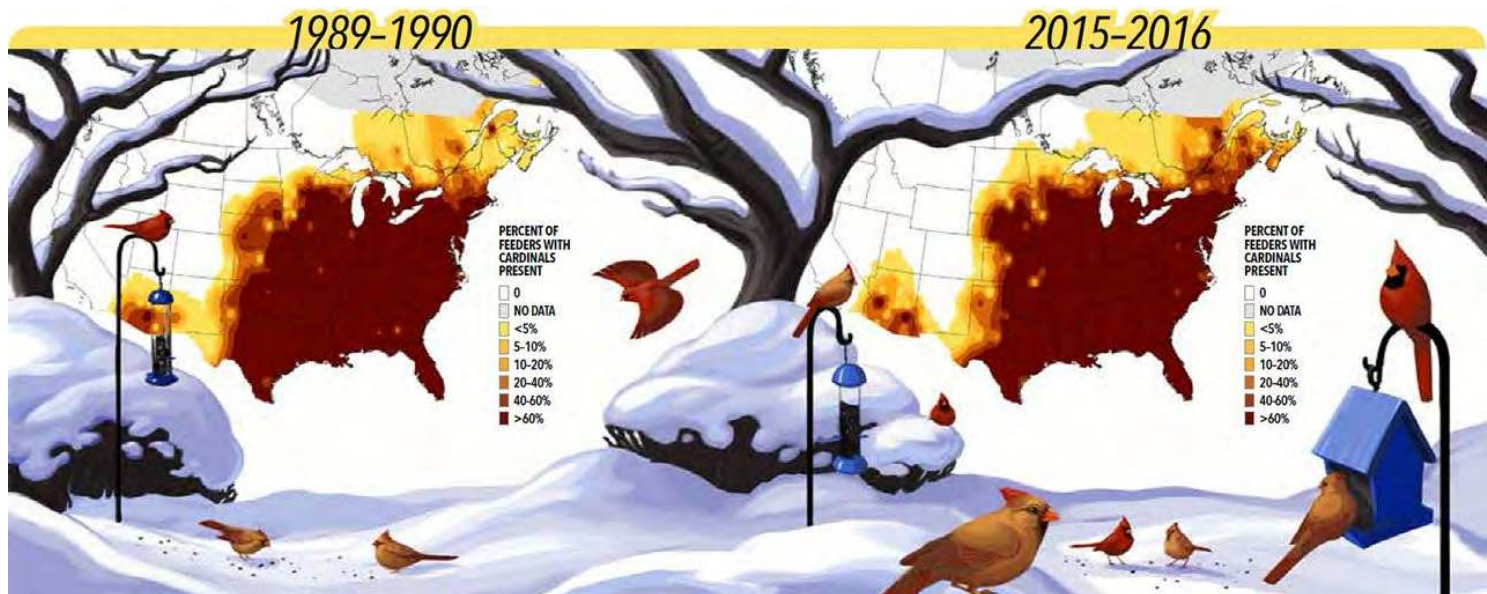
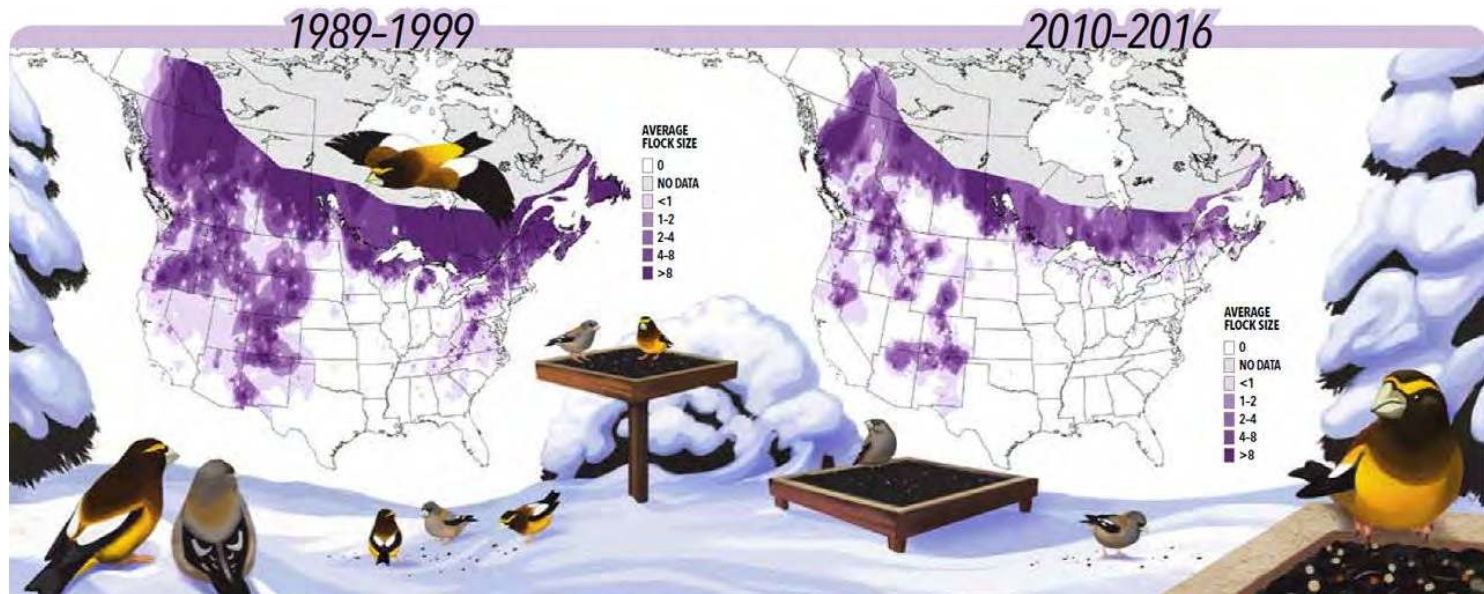
Comments

3 Common Loon

1 Western Grebe

3 Western/Clark's Grebe

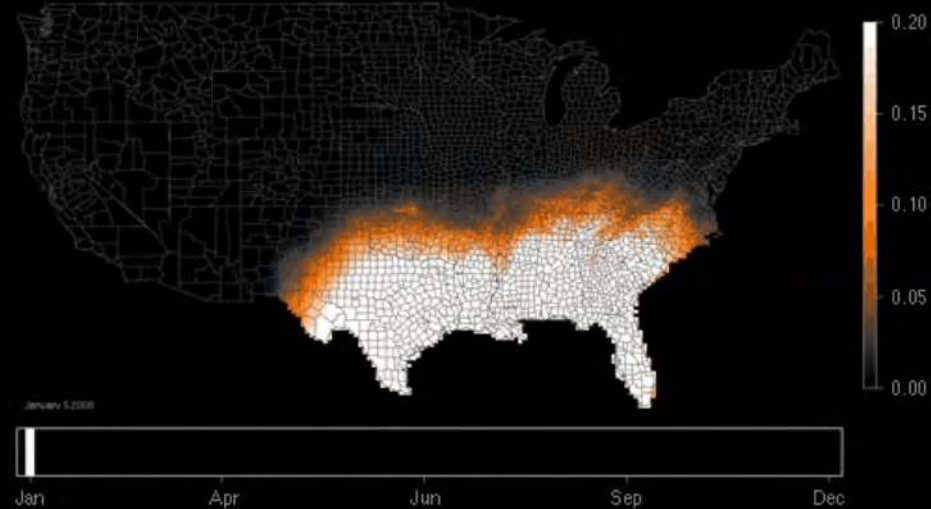
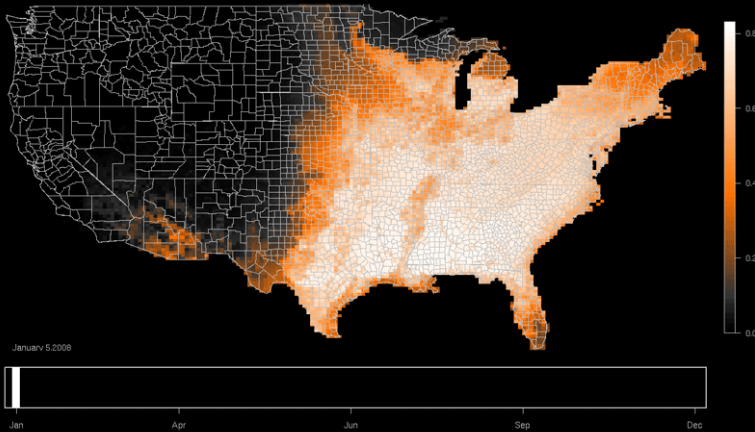
Home



Where are birds throughout the year?

Mystery Map 1

Mystery Map 2



Northern Cardinal



Mystery Map 1

Eastern Phoebe



Mystery Map 2

“Citizen science gives the students the ability to participate in science. To feel like their observations count for something.”

– Phil Kahler, BirdSleuth teacher



Research shows that the 400,000+ people who participate in the Cornell Lab’s citizen-science programs **purchase more bird seed and bird feeders than the general population.**

The Cornell Lab of Ornithology

I WONDER

Investigating Evidence
RESOURCE PAGES

Kinds of Questions

You may have already come up with some questions about your observations. Different types of questions lead to different types of research projects. You can classify questions by how you can answer them. This graphic shows four ways to answer your scientific questions.

WHAT DO YOU THINK?
Look at the graphic and read the paragraph in the box below. What are the four ways to answer your scientific questions?

I wonder...?

conduct

OBSERVATIONAL STUDY

EXPERIMENTAL STUDY

DATA

explore and analyze

read the data

The Cornell Lab of Ornithology

Variables in Science Experiments

What makes an experiment "fair"?

Investigating Evidence
The Cornell Lab of Ornithology
BirdSleuth K-12

The Cornell Lab of Ornithology

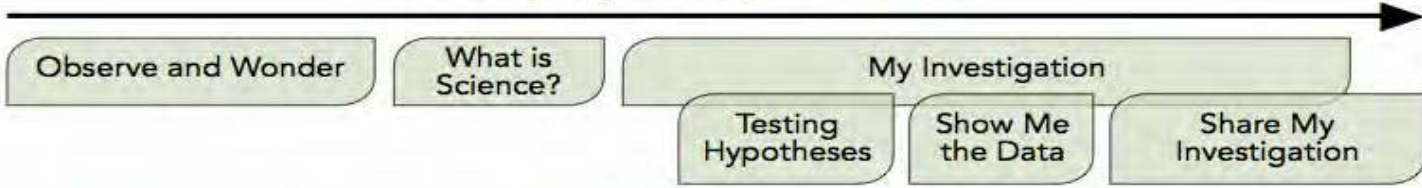
Investigating Evidence

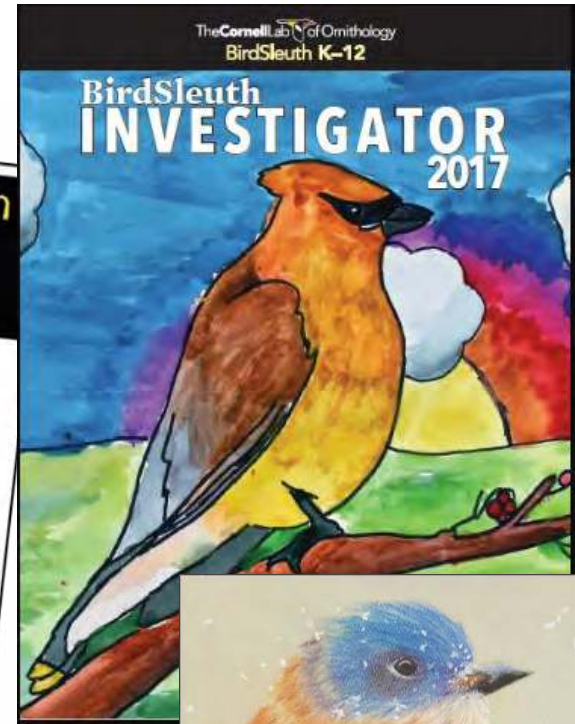
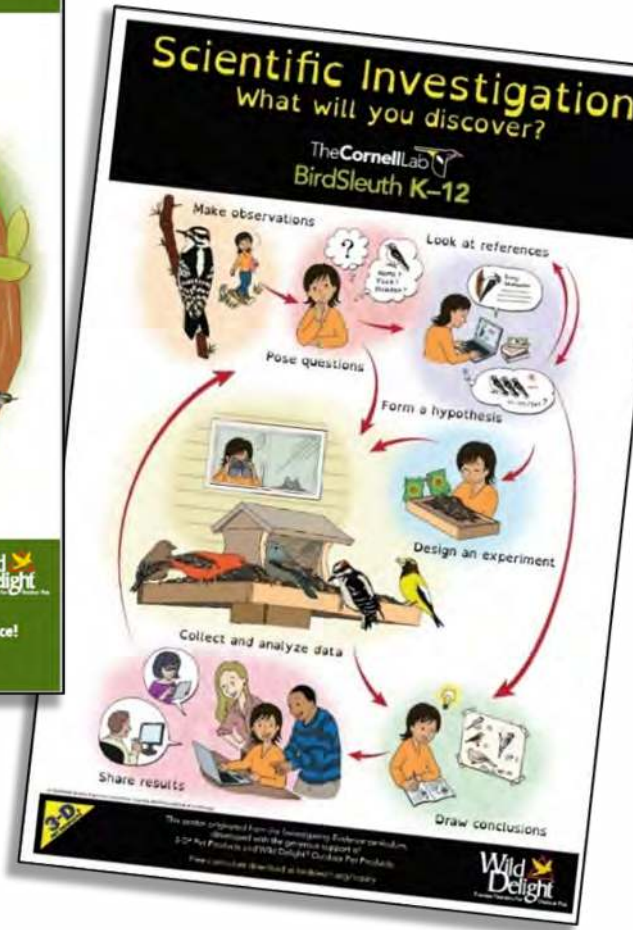
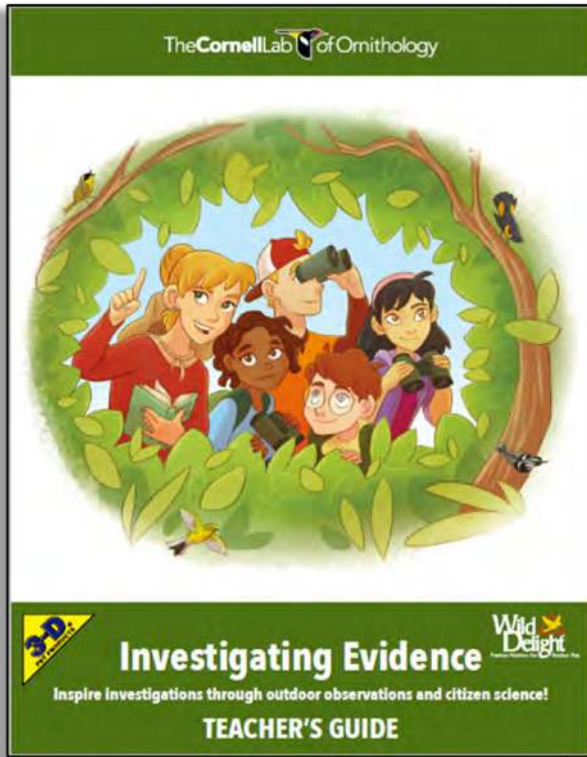
Inspire investigations through outdoor observations and citizen science!

TEACHER'S GUIDE

Wild Delight

Unit Timeline: 1 week, a semester, or a year-long project...
it's up to you and your students!





Estimated Distribution to date: **20,000**

Over 1 million kids!

Conference & Webinar Outreach



“Thank you for the webinar, ‘Independent Students Investigations, Data Analysis, and Interpretation.’ I have new resources I can't wait to test with students.”

**Maureen Foelkl
Elementary Teacher, Oregon**

**National Science Teacher Association
Green Schools
STEAM Symposium**

BirdSleuth
Published by Jennifer Fee | 11 | August 26, 2015

Kick off your school year with inquiry!

For ten years, our "Investigating Evidence" curriculum has inspired kids' schoolyard science experiments. Now, in time for the new school year, we are proud to announce the release of the Second Edition, revised and aligned with Common Core and NGSS standards.

Thanks to our sponsors, 3-D Pet Products and Wild Delight, this amazing resource is available as a free download for a limited time!

Art: Anna Rettberg Illustration



6,559 people reached [Boost Post](#)

Like Comment Share

Cecilia Cruz, Charlotte Painter, Michele McKinley and 8 others like this.

17 shares

Social Media and eNews

- BirdSleuth Facebook page (9200 teachers)
 - BirdSleuth eNews (50,000 teachers)
 - Cornell Lab Facebook page (750K+ fans)
- = Continuous growth

Happy Teachers!



“Thank you so much for this coupon!! It will really help as I prepare for our Teacher’s Night Out program coming up March 15th!! Thank you for everything, I greatly appreciate the support and resources. The teachers are going to fall in love with birds!!!”

-Lauren

“Thank you for the bird seed coupon and the bird feeding/study ideas! My students and I appreciate this. :)”

-Betsy
Columbia MO

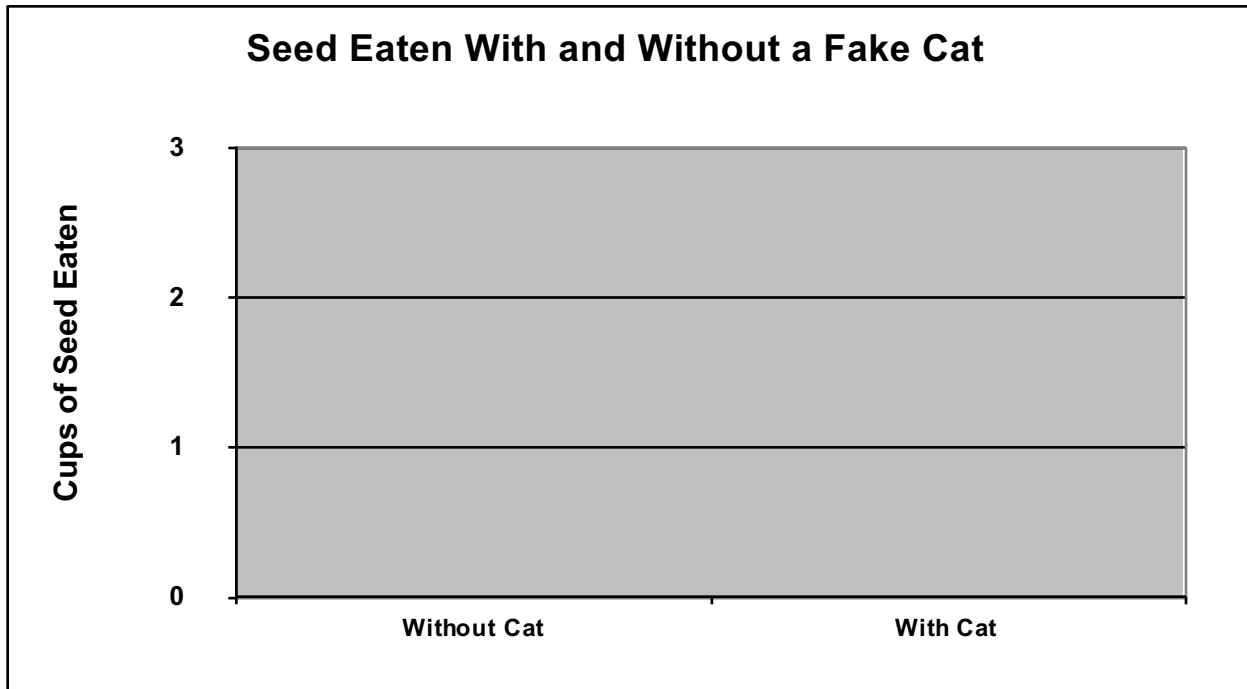
Will a Fake Cat Scare Away Birds?

by Amy, 4th grade



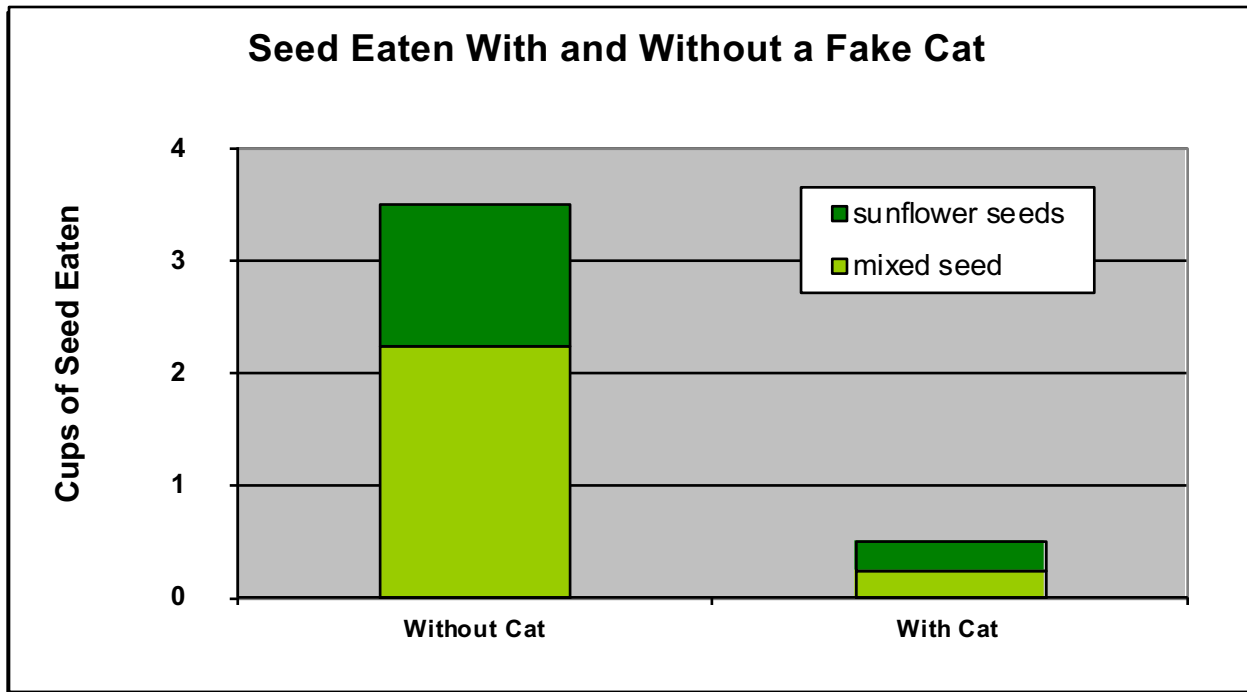
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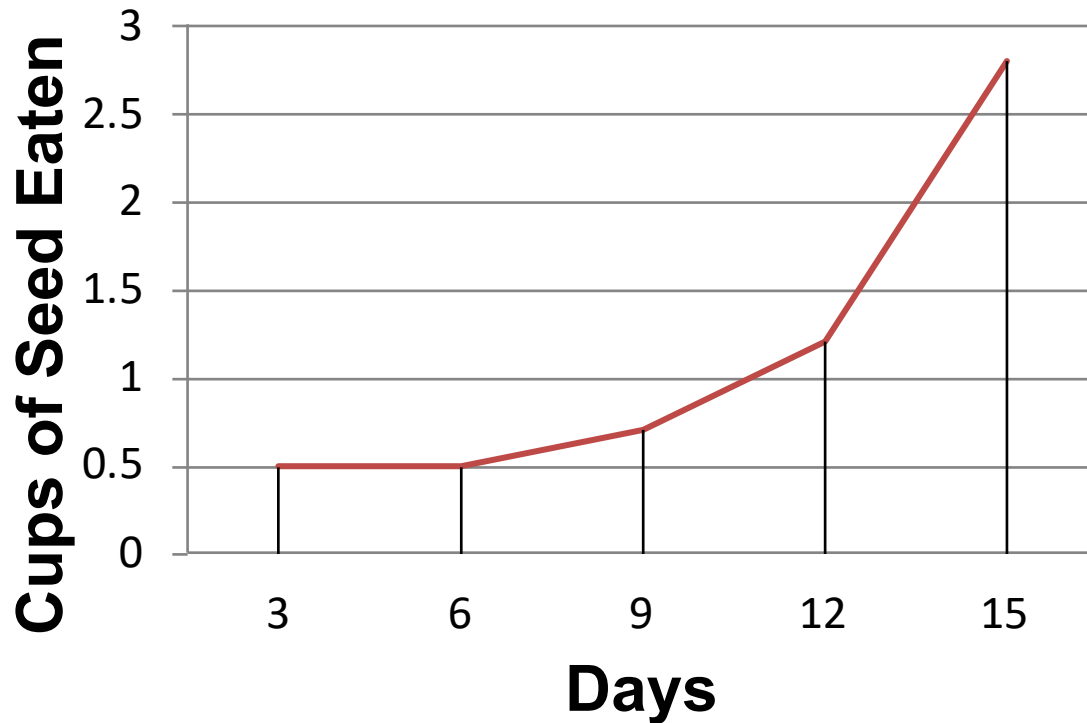


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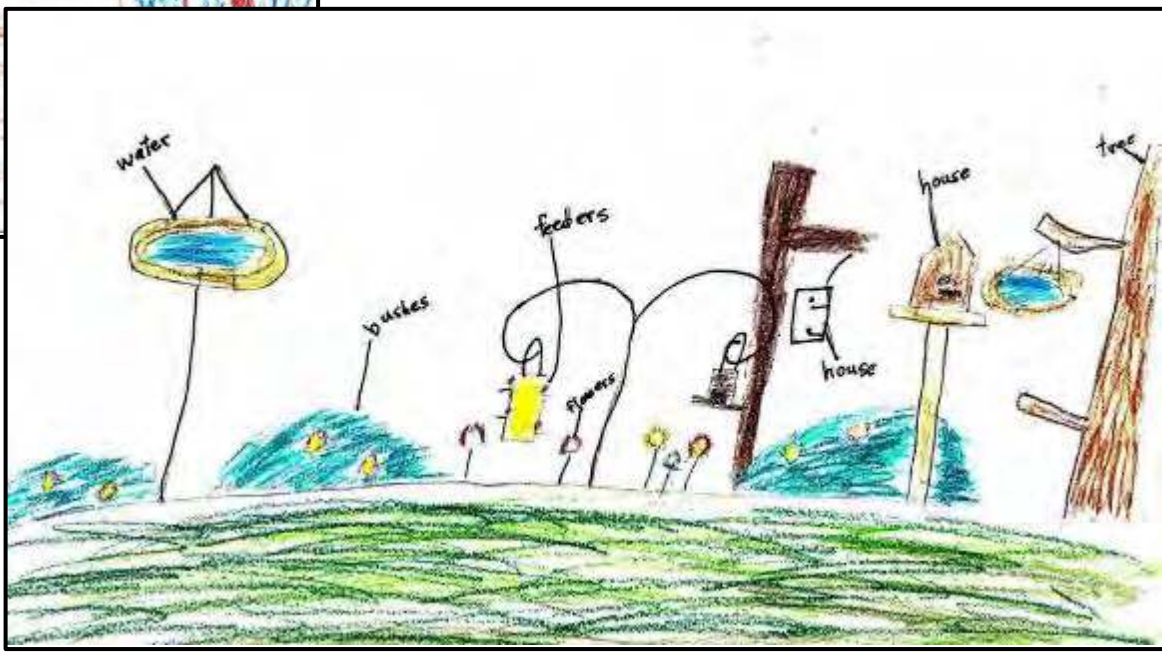
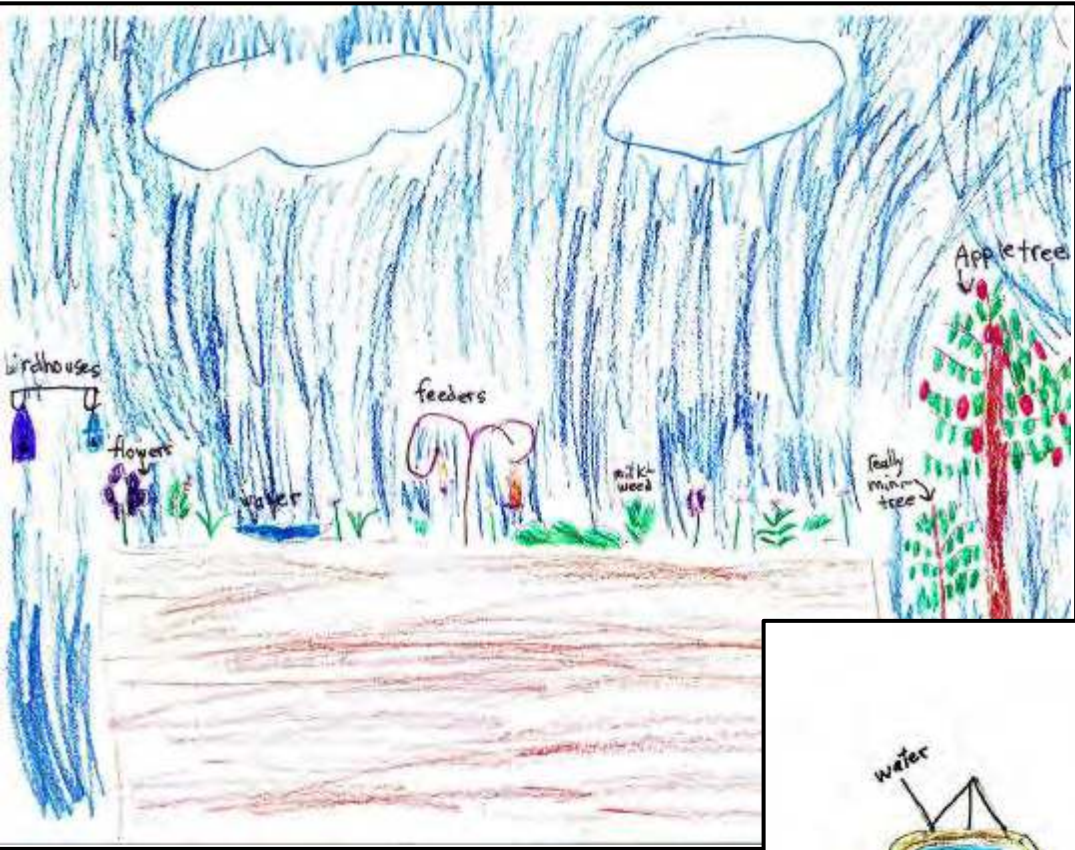
“The cat is a good guard, but I thought the birds would learn the cat was fake!”



Why are no birds visiting our feeders?

By Hilltop Elementary 3rd graders







“The bird feeders were recently designed by our secondary Life Skills/Autistic Support students. Our School Police Officer enjoys woodworking. He fabricated the feeders, while the students painted them and added the suet.”
(Ms. Szewczyk, Waynesburg, PA)



“Students made bird feeders from tongue depressors. In this photo they are putting them outside the classroom window. When the birds appear, we will join in on the bird count to provide data about winter birds in our area.”
(Ms. Cloys, Leadville, CO)



“My bilingual students who hear through the use of a cochlear implant love to learn English by creating projects. One student brought in natural materials to make a bird feeder. He used a large pine cone, peanut butter, and bird seed. After taking it outside, the students began to watch various types of birds come to investigate his pine cone feeder. As a result the students have begun to be more interested in the kinds of birds that live in our area.”
(Ms. Hawke, Columbia, SC)



Inspiring youth to enjoy science and the outdoors...



I started with new groups this week and my opening activity has always been to ask the kids to **draw a scientist...**

I am thrilled to report that so far this week almost 98% of the girls drew a **girl scientist!** A few kids of color drew a **scientist of color!** About half the kids **drew their scientist outside!**

The work we all are doing for kids is making a difference, perceptions are changing!

--Jodi Sikma, Elementary Teacher

Summary Evaluation (year 1; 234 responses)

- 50% fed birds at school
- 93% went outside to watch birds
- 84% were likely or very likely to use *Investigating Evidence* the following year.



- “They were surprised by the simple things they could do to help birds in their own backyard.”
- “They improved their understanding of scientific investigation. They also loved to be involved outside!”



New Effort: National Challenge

The Challenge

What are birds doing at your feeders?

Watch what's going on at your feeder and allow your curiosity to take flight. Individual students, small groups, and entire classrooms are invited to take part in this national challenge.

- Support teachers in using feeders for cool inquiry projects.
- Encourage students to closely observe feeders and create science investigation focused on feeding birds.
- **281** educators signed up. Winning submissions will be included *BirdSleuth Investigator* magazine and everyone got a bird seed coupon.

Calm vs. Scary Cats?!?



YES, these are the actual photos he used.

Calm vs. Scary Cats?!?

“More birds visited when no cat pictures were around.”



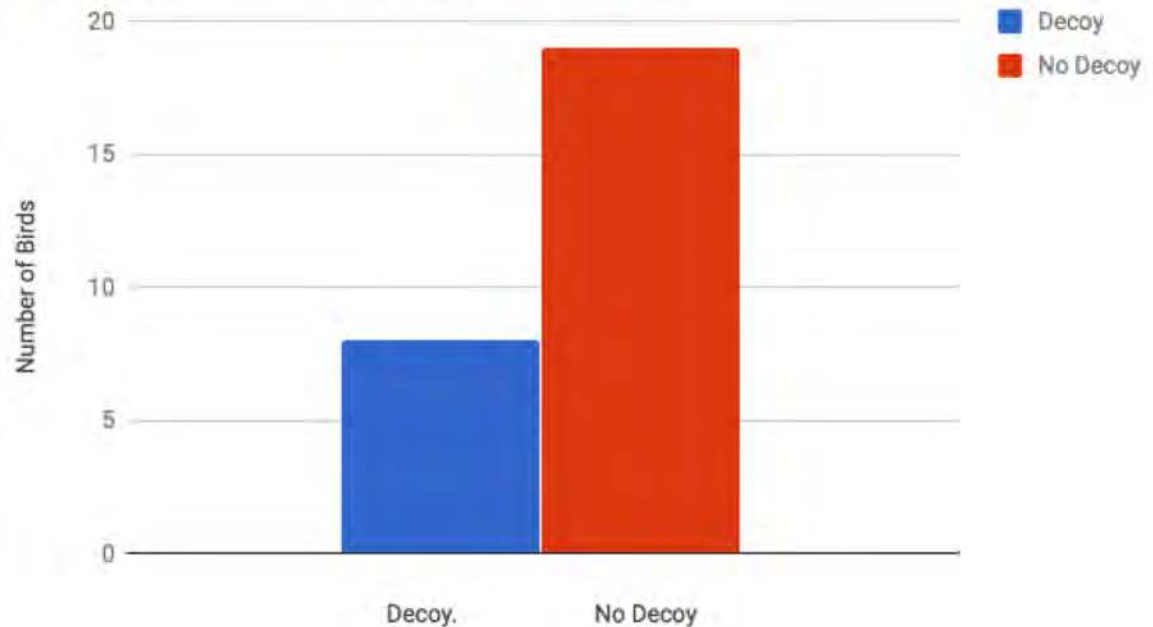
Blue Jays Bullies?

Two 6th grade girls observed that when Blue Jays were around the feeder, smaller birds flew away.

Would a *decoy* Blue Jay would have the same effect?



Figure 1: Total Number of birds that visited each feeder



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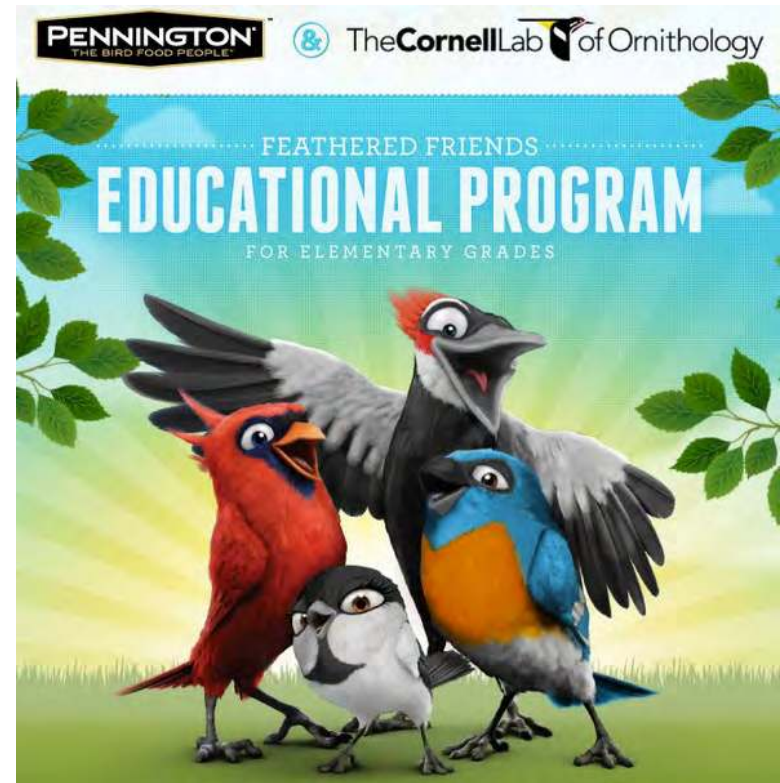
Evolution in Paradise
Lessons brought to you by the most extravagant birds in the world.



Life In A Nest
Activities to accompany the Bird Cams.

Feathered Friends Program

- Downloadable *Feathered Friends* curriculum
- Feeder distribution



Feathered Friends

Feathered Friends April

DO YOU HEAR WHAT I HEAR?



Big Idea
Every bird sings to the typical tune of its own species. From "cheer-up" to "taw," students will be exposed to a world of bird calls and be able to describe why birds sing.

Learning Objectives

- Students will be able to recreate the call or song of the thrush or more species.
- Students will be able to match at least five birds to their typical calls.
- Students will be able to describe why birds sing.

Before You Start
Make sure you are set up to access and play audio from www.birdsleuth.net/Pennington. If you are unable to access and play audio from this site during class, print out the key of birds and their song memorizers to share with the students yourself!

Bird of the Month!
This month's bird is the Red-tailed Hawk. To find them, you'll have to turn your eyes up—these hawks will often be found soaring in the sky or atop telephone poles watching for their next meal.
Visit www.allaboutbirds.org/guide/red-tailed_hawk/id for more information and images to share with your students.

THIS MONTH'S ACTIVITY

1 Listen and Learn
In this activity you will share some bird songs with your class via sounds found at www.birdsleuth.net/Pennington. Play the songs once and reveal which birds match the sounds. You can also reference the Take Home Sheet for charts of birds and their songs.

Photo Credit: Red-tailed Hawk photographed by Cameron Rogman.

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Feathered Friends April

Then, challenge your students:
 • Relay some of the sounds.
 • Can anyone mimic any of the sounds they heard and recall any of the bird names from memory?
 • Can anyone mimic all the sounds and recall the names from memory?

Follow-up question for the class:
 • How did you remember the differences in bird songs?
 • In what ways were the bird songs different from one another?
 • Why do you think that birds sing?

2 Dawn Chorus
The dawn chorus can be heard in early morning as birds are waking up and establishing their territory and singing to attract mates.
 • Have students in groups of two or three, choose a bird song they recently learned.
 • How you will act as the conductor. To practice and allow the dawn chorus to warm up, have each bird group recite their song when you point to them.
 • When each bird group is comfortable with their call, have everyone sing together to create a dawn chorus!

3 Take it Outside!
To demonstrate how birds can find each other through their unique calls, have your students in their bird species groups spread out within a space the size of a tennis court. Now the closed-eyed students must find another bird in their species by listening for that fallow bird's call. At the conclusion of the activity, ask: Why do you think that birds have distinct typical calls? How was the activity similar to birds interacting with each other in the morning?

4 Take it Home!
Educators, keep students thinking about and observing birds at home by sending copies of the next pages (for a single two-sided copy) home with students. Invite the whole family to join the fun of watching birds!

Print the following pages for each child to take home and let the education continue!

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Grades 2-5

Bird Feeder Distribution




“Thank you so much for the bird feeder! My students AND visiting parents loved to see the birds and the opportunity it provided for their students.”

**Karon Pacot
Ellicott Elementary School, CO**



The Cornell Lab of Ornithology
BirdSleuth K-12

BirdSleuth Explorer's Guidebook



BECOME AN EXPERT OBSERVER!
Follow this step-by-step BirdSleuth Explorer's Guidebook and use your senses to discover the birds in this park.

What's a Habitat?

Great job! Now that your ears are listening, look for the four parts of a habitat.

A good habitat has everything a bird needs to survive. There are four parts to a habitat. Put a check next to each part you see: food, water, cover, and space.

<input type="checkbox"/>  <p>FOOD: Just like you, birds need a healthy diet. Different birds eat different foods, for example seeds, insects, and fruit.</p>	<input type="checkbox"/>  <p>WATER: From a puddle to a pond, or a ripple to a river, birds need clean water for drinking and bathing.</p>
<input type="checkbox"/>  <p>COVER: Birds need safe places to sleep and raise young, and shelter from bad weather and predators. Birds find cover in trees, bushes, and structures made by people.</p>	<input type="checkbox"/>  <p>SPACE: Birds need room to grow and live. They need to be able to find enough food, water, and cover in the place they call "home."</p>

4

Identification Clues

Now that you can use shape to determine a bird's group, let's add more details to help identify a bird by species.

Bird watchers use many clues to identify birds. Knowing the shape, size, and color pattern of a bird, and where and when you saw it, can help you identify the birds you see. Focus on one bird and gather information about it!

Your Habitat: _____ Date: _____

Was it? (circle one): At a feeder In the water On the ground
 In trees or bushes On a fence or wire Soaring or flying

How big was the bird? Put a star on the line closest to the size of the bird you saw.



What were the main colors you saw?

<input type="checkbox"/> Orange	<input type="checkbox"/> Yellow	<input type="checkbox"/> Green	<input type="checkbox"/> Blue
<input type="checkbox"/> Gray	<input type="checkbox"/> White	<input type="checkbox"/> Brown	

8

Bird Academy

The screenshot displays the Bird Academy website interface. At the top, there is a navigation bar with the Cornell Lab logo and the title "Bird Academy". To the right of the title are menu items: "Featured Bird-ology Topics", "Browse Interactives + Videos", "Textbook Handbook of Bird Biology", "Courses Bird ID + Behavior", and "My F Progress". Below the navigation bar is a main heading: "Explore all kinds of ways to learn about birds". Underneath this heading is a sub-heading: "With interactives, videos, field clips, articles, and more". On the left side, there is a "Filter by Topic:" sidebar with a list of topics: Anatomy, Behavior, Bird ID, Brains + Senses, Conservation, Evolution, Feathers, Food + Foraging, Habitat, Migration, Nesting, and Songs + Calls. Each topic has a toggle switch. On the right side, there is a grid of content cards. The first card is titled "Learn How to Identify Bird Songs" and is a video (1:48) with a "Bird ID" tag. The second card is titled "Flap to the Future: The Flight Adaptations Game" and is an interactive feature with an "Evolution" tag. The third card is titled "Birds of the Yellow Sea" and is a video (12:58) with a "Migration" tag. The fourth card is titled "Bird Research and Shade-Grown Coffee" and is a video (4:28) with "Conservation" and "Migration" tags. The fifth card is partially visible and has "Conservation" and "Evolution" tags. The sixth card is partially visible and has "Anatomy" and "Behavior" tags. At the top right of the content grid, it says "Showing 24 of 227" with a search icon.

Support for Retailers

The **Cornell Lab** of Ornithology
BirdSleuth K-12

Resources for Educators

The Cornell Lab of Ornithology and Wild Delight have partnered to motivate kids to explore their environment. Through hands-on curricula and schoolyard bird feeding, students learn to appreciate their local birds, all while meeting **Next Generation Science Standards!**

Inspiring Kids

Educators like you have inspired nearly **1,000,000** students through these engaging resources. These activities allow students to engage in the outdoors, connect to birds and nature and learn key science content while developing science skills.

Exploring Birds

Wild Delight is committed to helping educators and students explore birds by providing free bird seed that helps establish school bird feeders. Bring the beauty of birding to your school!



Download **FREE** Lessons and Resources!

www.birdsleuth.org

The **Cornell Lab** of Ornithology

Inspire kids to feed birds!

The Cornell Lab of Ornithology and D & D Commodities Ltd. are working to motivate kids to feed birds and appreciate them. As a world leader in the study and conservation of birds, the Cornell Lab is a trusted source for educational resources and citizen-science programs.



INSPIRING YOUNG PEOPLE

With D&D's support, 11,000 educators have received Cornell Lab educational materials, reaching more than 660,000 students.

FEEDING BIRDS AT SCHOOL

Thousands of educators have received free bags of bird seed to help them set up school bird feeders.

BENEFITS FOR YOUR BUSINESS

Encouraging people to engage in citizen science can be good for business. Research shows that the 400,000 people who participate in the Cornell Lab's citizen-science programs purchase more bird seed and bird feeders than the general population.

FREE RESOURCES FOR YOU AND YOUR CUSTOMERS

The Cornell Lab provides a wealth of free resources including bird-feeding tips, identification guides, and information on bird-friendly gardens. These resources help store owners engage customers more deeply in bird feeding and understanding birds.

For more information, visit
birds.cornell.edu or
birdsleuth.org





I look forward to working
with you to spreading the joy
of bird feeding!

Twitter: **@birdsleuth**

Facebook: **BirdSleuth**

Website: **www.birdsleuth.org**

Email: **jms327@cornell.edu**



Questions?

