

BirdSleuth INVESTIGATOR 2013



Science reports
and original artwork
for and by students

Dear Educator

For nearly two decades we've invited educators to explore the Cornell Lab's research projects through BirdSleuth. In its early years of development, what was then known as "Classroom FeederWatch" was a well-evaluated curriculum kit available for classroom use and focused on winter bird feeding and student research projects. Today, BirdSleuth K-12 has grown to encompass a wide variety of resources for educators that allow flexibility for group type, size, and goals, while continuing to provide connection to citizen science projects at the Cornell Lab. In addition, we have increased our ability to provide quality professional development to the science education community by adding a series of webinar events and in-person workshops throughout the country, and increasingly, globally.

If you are a new friend to BirdSleuth and looking for ways to get a conservation project started with kids, you

may want to try something as straightforward as hanging a feeder outside your window. Or perhaps you'd rather venture out for a schoolyard mapping project or neighborhood exploration walk. Maybe you want to have a raised bed or bucket garden that can be used for nature study. However you choose to dive in, you can follow up by adding your project on the BirdSleuth Action Map. The Action Map allows you to join the other exciting projects across the country that are inspiring the way kids look at science learning and contribute to environmental stewardship.

You can find more about all our K-12 opportunities, events, and resources at www.birdsleuth.org. Please keep in touch!

Sincerely,
Lisa DeRado, Editor, *BirdSleuth Investigator* 2013

Dear Students

What's the second fastest growing hobby in the United States? You guessed it, birding! Many schools across the country are starting school gardens for food production, nature study, and bird observation. But what if gardening is not part of your teacher's plan? How can you learn about birds and not miss out on the action? Here are some tips from your friends at BirdSleuth to make getting started really easy and fun!

- 1. Start in your own backyard.** Making a birdfeeder out of a milk carton or onion sack is easy and there are hundreds of examples online! Hang it on a tree branch or pole near some trees. (Tip: If you fill it with black oil sunflower seed you will get the biggest variety of birds visiting your feeder.)
- 2. Keep a birding journal.** Write down the exciting, or not so exciting, details about what you saw, where, and when. Adding a drawing of the bird or scene will help with identification if you are not sure and need to figure it out later.
- 3. Use a bird field guide.** Borrow from the library or use an online field guide, such as www.allaboutbirds.org, to help you identify and learn about the birds you see.
- 4. Be kind to nature.** Remember to be quiet when observing birds, especially nests and baby birds. If you like to observe and identify nests, please visit the NestWatch site, nestwatch.org, to learn about keeping birds safe while you're watching.
- 5. Be a scientist!** Kids can contribute to real scientific studies by participating in citizen-science projects. Whether you prefer birds, bugs, or plants, there is a citizen-science project waiting for you. Find a project you like online at www.scistarter.com.

- 6. Start a life list.** This is a record of all the birds you've seen along with where and when you saw them. Keep the information in your journal. Better yet, start an eBird account and keep track online where you can compare and share your data.

If you have worked on a birding project, ask your teacher or any educator to help you submit your project to *BirdSleuth Investigator*. Details are on the back page of this publication.

Sincerely,
Lisa DeRado, Editor, *BirdSleuth Investigator* 2013



"BirdSleuth Activities" by Ileana Betancourt

What works better to repel birds—store bought flash tape or two used metal pie tins tied together?

by Ridgely, Grade 6
Center for Teaching and Learning
Edgecomb, ME
Mr. Powers

Introduction

We have chickens, and they live in a nice coop with sturdy wire walls. So we never have fox or coyote problems. But with no roof, our hens were easy pickings for hawks who constantly circle our coop then swoop in, pick up a chicken, and leave. To stop this problem we got tons of flash tape to put in trees nearby and in the coop.

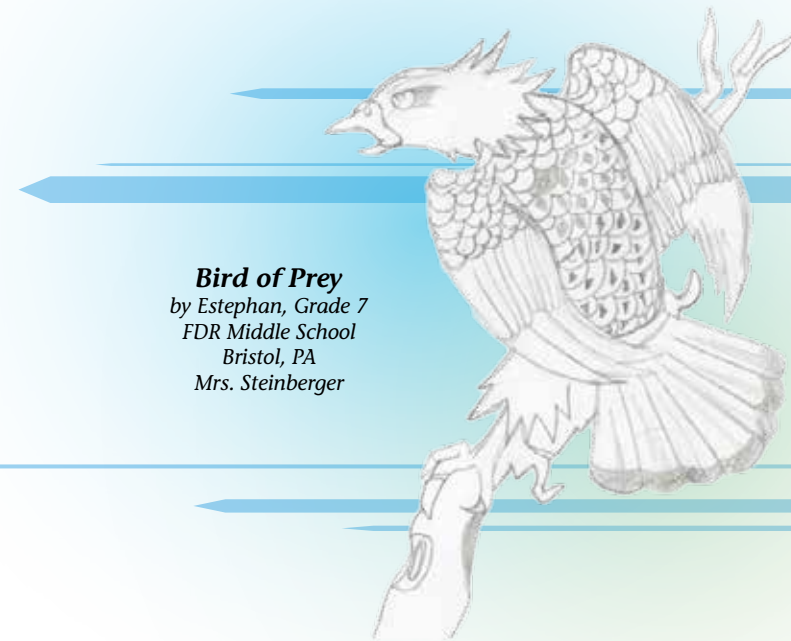
Over time it would come loose or blow away and we would have to re-add it. I did this experiment to see if two pie tins tied together would work just as well as flash tape. If it works it's recycling, saving money and if you tie a good knot it won't blow away. Since I can't use chickens to test my theory I can relate it to an oncoming problem. When we plant seeds we will need flash tape to keep birds away from the crops. So, I could use bird feeders as bait, almost recreating the situation in farms.

Hypothesis

My hypothesis was that the pie pans will repel birds more effectively. My reasoning is that though flash tape gives off a good flash of light not only do the pie tins flash when the sunlight hits the tin, they also bang together in the wind creating a loud clanging noise even in a slight breeze. That combination will be more effective than normal flash tape.

Materials

- 2 purple tube feeders



Bird of Prey
by Estephan, Grade 7
FDR Middle School
Bristol, PA
Mrs. Steinberger

- Mixed seed including sunflower seeds, safflower, crushed corn, and millet
- 1 roll of flash tape
- 2 pie tins tied together with string

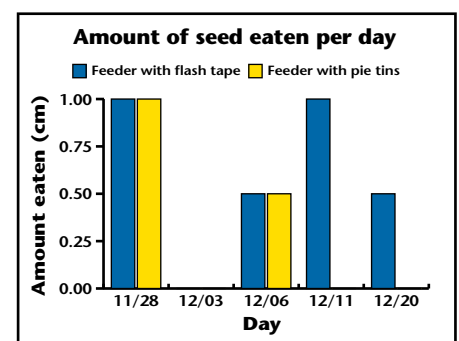
Methods

I knew I couldn't just put up flash tape and pie tins. I needed something to attract birds. But I was not willing to use my chickens so I used tube feeders, a typical backyard bird feeder, and two purple ones about 50 yards apart so they don't affect each other then filled them with the same seed mix. One I hung on a young tree branch and weaved flash tape through the branches and around the trunk. Then the other one hung at about the same height on another young branch but on this one I tied one end of a string to a nearby branch and on the other end I made a loop going through the holes on both tins. I cut out, then tied the end to the string loosely so the tins would be able to move and bang freely. I got my data once a week on Thursdays. I would measure the distance between my original mark and where the seed goes up to now and then refill both. Then write down the info on a chart and head back inside. Squirrels

weren't a problem so luckily they didn't mess with my measurements. The data I got was only from birds and sometimes wind.

Results

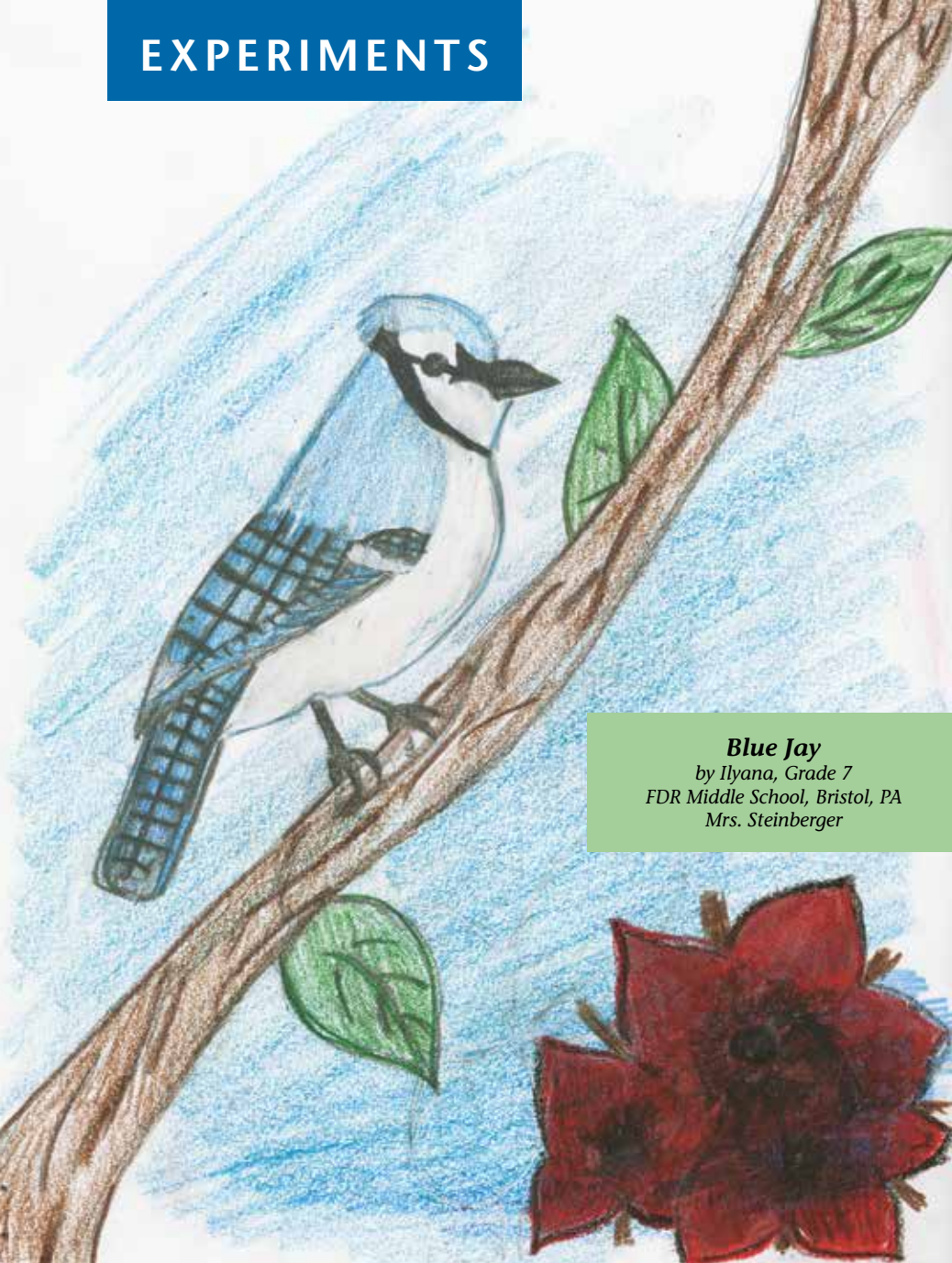
In 5 days I took 10 measurements: one for each feeder in centimeters from the height that I marked last week to find out how far the seeds go up and collected that data.



Discussion

The pie tins were more effective than the flash tape which supports my hypothesis. The birds fed less on the bird feeder guarded by the pie tins. Perhaps I was correct that the combined noise and flash of the pie tins would prove a better bird repellent than just the flash of flash tape. But the data was extremely close or

(cont.'d on page 4)



Blue Jay

by Ilyana, Grade 7
FDR Middle School, Bristol, PA
Mrs. Steinberger

If I set up two bird feeders, one with fruit and one with bird seeds, which will more birds visit?

by Angela, Grade 7
St. Mark Catholic School
Boyton Beach, FL
Mrs. Eubanks

Abstract

My question was, if I set up two bird feeders, one with fruit and one with bird seeds, which will more birds visit? I set up my two bird feeders and filled one with fruits (grapes, raisins, and oranges) and one feeder with bird seeds. I checked the feeders at 5:05–5:15 pm and also at 7:30–7:40 pm. Before all the visits I filled them up again with 1/4 cup of each. I found that my hypothesis was not supported because the birds preferred the seeds over the fruit. I think my project went amazing but what might have happened after a while was that all the seeds were gone day after day, so another animal may have gotten to the feeder.

Introduction

I decided to focus on the diets of birds. There are hundreds of birds but only a few visit my neighborhood. I was wondering what food these birds would like, seeds or fruit. We have various preferences of food but I would eat fruit over seeds. The starling, which is the most common bird in my neighborhood, prefers fruit and the other common birds will eat almost anything, including fruit. Now it is up to the birds to decide which they like more.

Question

If I set up two bird feeders, one with fruit and one with bird seeds, which will more birds visit?

(cont.'d on page 5)

(cont.'d from page 3)

the same most of the time and when they were different it was only by a centimeter which for my study is not very significant so maybe it was just chance that the pie tins repelled birds a little more. All I can say is flash tape and pie tins work about the same in protecting seed from birds but in this test that is good data because I was testing to see if pie tins work just as good as flash tape and it does. This means that pie tins that you have left over can be recycled and work as well as flash tape which costs about \$10, so it's a money saver for farmers whose planted seeds are being feasted on by birds. Pie

tins would be good on scarecrows or posts mounted between rows. Some things that might have affected my results are wind. There were some pretty windy days and the flash tape feeder had a tree in front of where most of the wind comes from but I didn't see too much damage on either feeder. Maybe squirrels were present but I found no evidence of this and I got so little seed eaten that I do not believe that they changed my data much if at all.

Overall the project was a success possibly helping people, saving money, and recycling all at the same time.

(cont.'d from page 4)

Variables

Independent: the food that is in the feeder (fruit or seed)

Dependent: amount of birds that visit the feeders

Controls:

1. Height of feeders
2. Type of fruits
3. Type of bird seeds

Hypothesis

Null hypothesis: When given two feeders one with fruit and one with seeds, I think both feeders will be visited the same amount.

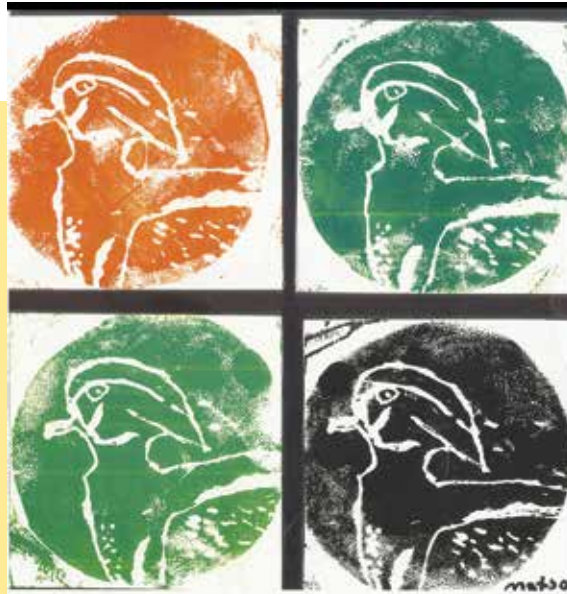
Alternative hypothesis: When given two feeders, one with fruit and one with seeds, I think the feeder with the seeds will be visited more.



Angela's feeder location.

Materials

- Two of the same bird feeders
- Fruit (oranges and peels, grapes, raisins)
- Bird seeds

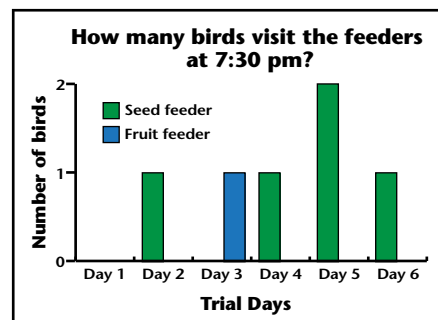
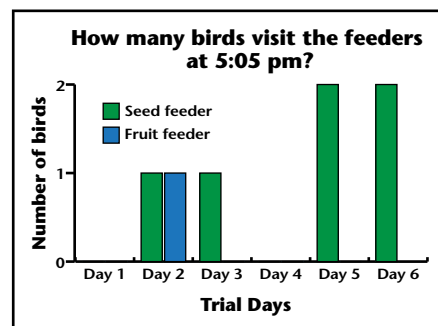


Wood Duck Block Print

by Matson, Grade 2, Kettle Falls Elementary, Kettle Falls, WA, Mrs. Corvino and Mrs. Smith

Methods

I set up two bird feeders at the same height on the pole of my swing set which no one uses. I put 1 cup of fruit and seeds in the bird feeders to start. I cut up all the fruit into smaller size pieces and sliced it in the blender. I counted the amount of birds that visit the bird feeders at 5:05 pm and 7:30 pm for 6 days for 10 min each. I added 1/4 cup of fruit and seeds to the bird feeders each day before watching.



Analysis

During my observations I found that the birds definitely liked the seeds over the fruit. At least four out of the six days when I came back to the feeders the seed feeder was completely empty. I only saw two birds at the fruit feeder.

Conclusion

My results supported my alternative hypothesis that the feeder with seeds would be visited more. My original hypothesis started out OK but it is not fully clear whether this pattern would continue if the feeder was up for longer.

Discussion

I learned a lot about the birds that visited the feeders. My hypothesis was also totally off because they visited the seed feeder way more. I noticed that the birds don't all come at one time. Only one or two at time would come and they wouldn't even approach unless total silence. If I were to do this project again, I would sit outside for ten or fifteen minutes more. I would also do more research on the types of fruit the birds prefer and try to attract more. I would also make the project over the course of about a month to get solid facts.

Which Seed Attracts More Birds?

by Jack T., Grade 6
New Canaan Country School
New Canaan, CT
Mr. Maliakal

Purpose

The goal of this experiment was to see which of two seeds attracts more birds.

Hypothesis

I thought that the birds would come to the mixed seed rather than the black oil sunflower seed. This was my belief because even though the black oil sunflower seed was attractive to all birds, the mixed seed was very specific to the birds that come to my feeder. I guessed that the mixed seed would probably attract more birds because with a mix, you would keep getting certain birds back at your feeder that like the mixed seed.

Variables

Independent: seed type

Dependent: number and species of birds

Conditions to keep constant: height in tree, bird feeders, a full cup of seeds for each feeder, location of feeders

Materials

- Tube feeders
- Black oil sunflower seed
- Mixed seed
- A tree
- Clear string
- Journal

Methods

This experiment took place at my house in Darien, Connecticut. The two seed types were mixed seeds and black oil sunflower seeds. The

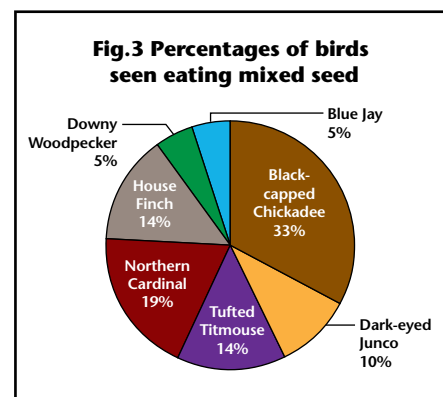
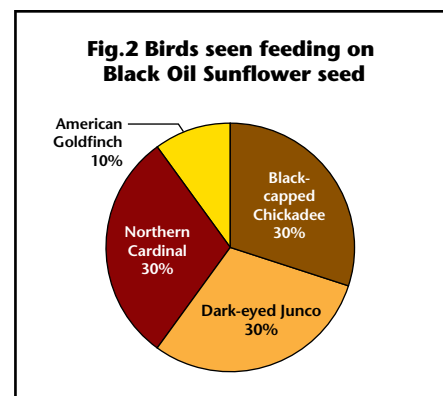
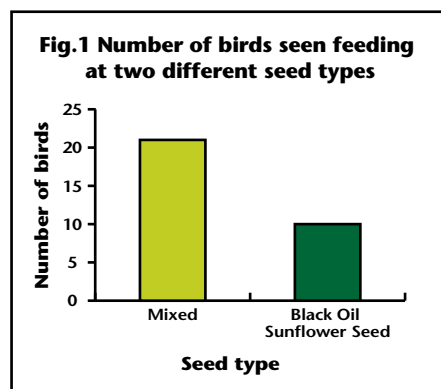
bird feeders were hung on a tree about 5 feet from the house and 5 feet off the ground. There were no bushes or shrubs around it and the tree was close to a river. The feeders that were used were tube feeders and the feeders were on opposite sides of the tree.

The observations were made from about 6 feet away on the porch. The experiment was conducted without binoculars and there were 10 observations, each 15 minutes long. The observations were made at 7:30 am. The study ran for one month and the objective was to see which of two seeds attracts more birds. I was recording the number and species of the birds at each feeder.

Results

Over the course of this study, I made 10 observations during the month of February. Figure 1 shows the number of birds that were seen under each condition. Most species preferred the mixed seed, but the American Goldfinch and the Dark-eyed Junco preferred the black oil sunflower seed.

Figure 1 shows 21 birds came to the mixed seed over the course of the study, and only 10 went to the black oil sunflower seed. Figures 2 and 3 show that the Black-capped Chickadee was the biggest feeder at both feeders. At the mixed feeder, it was 33% of the birds that came to that feeder. For the black oil sunflower seed feeder it was 30% of the birds that feed there.



Discussion

After conducting this experiment, I have learned that most birds seem to prefer mixed seed over black oil sunflower seed. The mixed seed was more popular because it was specific to the types of birds in our area. The package says it is popular to the birds around my area, and the experiment supports it.

Although most birds preferred mixed seed, there may be some inaccuracies that affected the results. People could have scared away some species of birds and others could have attracted them, so people could have been a problem. The location of feeders could have affected my results because maybe they were so close together that the birds just picked one and stuck with it the whole study. Another is the weather; certain birds come when it's cold and others come when it's hot. It was very cold over this study so that could have affected my results. Miscounting or misidentifying could have been a problem.

Does the Time of Day Affect When Birds Come to the Bird Feeder?

by Whitney, Grade 6
New Canaan Country School
New Canaan, CT
Ms. Etzold

Purpose

The point of this experiment was to find out if the time of day would affect when birds came out to a bird feeder.

Hypothesis

It was expected that birds would come to the bird feeder in the morning because that's when the sun is most visible.

Variables

Independent: Time of day

Dependent: Number of birds

Conditions to be kept constant:
Bird feeder, distance from feeder, type of seed

Materials

- Tube feeder
- Black oil sunflower seed
- Tree branch

Methods

This experiment was conducted outside the Middle School science wing at New Canaan Country School in New Canaan, Connecticut. A tube feeder was used. It was elevated on a branch of a sugar maple tree. It was approximately 54 feet away from the road and approximately 24 feet away from a group of about eight evergreen trees. It was 3 feet away from the Science building, and 12 feet away from another group of three evergreen trees. It was approximately three feet from the ground.

The observations were made using binoculars from about 24 feet away. The observations were made 2 times a day for 10 days. The observations were made from 7:50–8:05 in the morning and from 10:20 to 10:35 in the morning. This study ran from January 28 to February 25. A record was kept of the number of birds seen at the feeder.

Results

In this experiment, 10 observations were made from January 28 to February 25.

In all, 71 birds came to the feeder in the early morning and 47 came in the late morning. Eight different species came at 7:50 AM and seven species came at 10:20 AM.

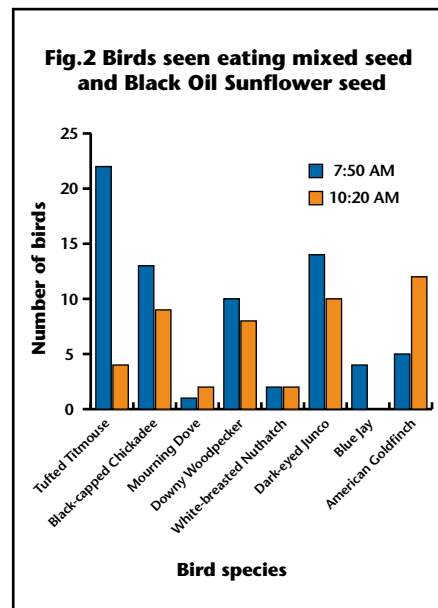
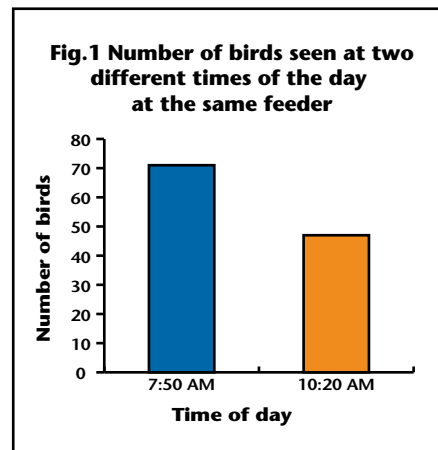
Discussion

It is believed that the birds came in the early morning more, because that is the first time that the sun comes out and the birds typically come out in the sun. It is also believed that birds come so early because the first thing they do is eat.

A weird thing that occurred was that 22 Tufted Titmice were seen at 7:50 AM and only 4 were seen at 10:20 AM. Snow could have affected these results because on a handful of the days, there was snow on the ground or it was currently snowing. Another thing that could have affected the results was the amount of people and talking. During the observations, there were a number of people observing at the same time, and that could have caused the birds to fly away. Also, a Cooper's Hawk flew right above the feeders one day, and that caused all the birds to flee.

During this experiment, some minor problems were faced. First of all, the people that were observing the feeders were a little too noisy and that could have scared the birds. Secondly, there was snow on the ground during seven of the observations and the temperature could have caused the birds to not come. Also, the temperature varied every day. The birds seemed to like the sunny days better. Some days it was cold, some were hot, and some were in the middle. Perhaps the birds enjoy one temperature over another. The temperature affected my daily results because sometimes, when it was cold or snowing, no birds would come. Lastly, some bigger birds, such as Cooper's Hawks, scared smaller birds away.

If this experiment could be done over again, this is what could be changed. First of all, observers would stand farther away so that birds can't hear them. Secondly, the observations should be made on days that have similar weather and temperature. Lastly, observations that were made on days with storms and distractions from larger birds should have been discarded, and new observations made.



How Does the Type of Tree Affect the Type of Bird?

by Morgan and Melody, Grade 6
Parkway South Middle School
Manchester, MO
Mr. Rademeyer

Hypothesis

If the tree is deciduous, then we will observe nuthatches, tanagers, and orioles.

If the tree is coniferous, then we will observe blue jays, wrens, and nuthatches.

If the tree is near a building or road, then we will observe starlings, pigeons, robins, cardinals, and crows.

Variables

Independent: type of tree

Dependent: type of bird

Controlled: volume, time of day, and experimenters

Procedure

1. Prepare necessary materials: binoculars and comprehensive field guide.
2. Quietly walk to the deciduous woods behind the track. Sit for five minutes.
3. Observe and note species of bird.
4. Quietly walk to coniferous trees behind the tennis courts. Sit for five minutes.
5. Repeat step 3.
6. Quietly walk to the sidewalk leading to the blacktop. Sit for five minutes.
7. Repeat step 3.

Results

How type of trees affect the type of bird seen	
Type of trees	Type of birds seen
Deciduous woods	Goose, cardinal, finch, Dark-eyed Junco
Coniferous woods	Robin, cardinal, finch
Near building or road	Pigeon and robin

Discussion

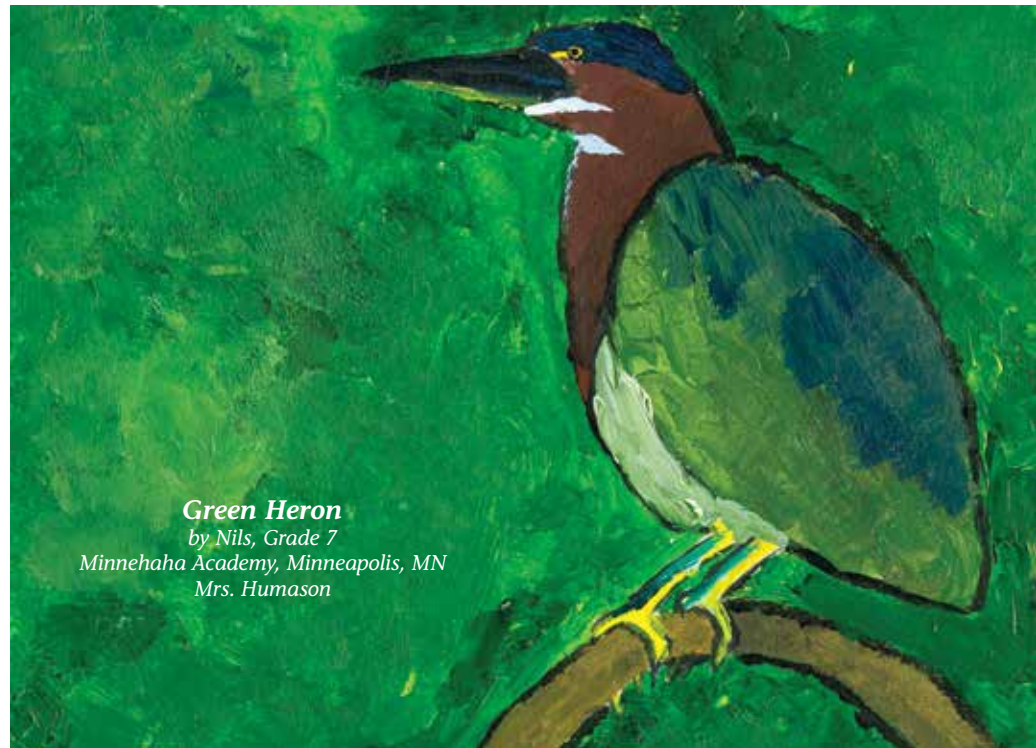
When we observed deciduous trees, we saw: geese, cardinals, finches, and Dark-eyed Juncos.

When we observed coniferous trees, we saw: robins, cardinals, and finches.

When we observed near roads or buildings, we saw: pigeons, and robins.

ban area, the environments overlapped in such a manner that the only birds observed were the species typical to an urban area, which was the most prominent environment surrounding the areas observed.

A possible error that was made is the difference in temperature between days of observation. A change we could have made in



Green Heron
by Nils, Grade 7
Minnehaha Academy, Minneapolis, MN
Mrs. Humason

The results do not support the hypothesis. We hypothesized that we would observe nuthatches, tanagers, and orioles when we observed the deciduous woods, and that we would observe Blue Jays, wrens, and nuthatches in the coniferous woods. We saw none of the birds we predicted to see at either location, but we observed geese, cardinals, finches, Dark-eyed Juncos, and robins instead.

We think this may have happened because of each of the trees' proximity to one another. Instead of separate forests of deciduous and coniferous trees, and a separate ur-

the investigation that should have corrected this potential error is to only collect data on days of a certain temperature. Some data that was confusing was the lack of the predicted birds at the deciduous and coniferous woods. We think that the difference in temperature may have been to blame, as many of these birds may have still been down south and had not migrated north to their summer habitats yet.

This makes us want to research "What type of food affects the type of bird eating the food?" or "How does the location of the food affect the type of birds eating the food?"

Correlation Between the Number of Raptor Species and Songbird Species in 2012

by Alex, Grade 7
Minnehaha Academy
Minneapolis, MN
Mrs. Humason

Question

Was there a correlation between the number of raptor species and the number of songbird species in 2012?

Introduction

The majestic raptors that fill our country eat many things, including small mammals like shrews and mice. Knowing that smaller birds are also in the area and are around the same size as other prey, I thought it would be fascinating to find out if raptors prey on only rodents or if they prey on other birds as well, and if they do this as their main food source. For background research, I looked up the species of songbirds that are eaten by raptors, and the species of raptors that eat songbirds. My research showed that raptors, such as the Sharp-shinned hawk, the Great Horned Owl, and the Peregrine Falcon, love to dine on smaller birds, such as the Mourning Dove and American Robin, along with quail, woodpeckers, and the occasional falcon. How often are these raptors eating other birds?

Hypothesis

In this study, my independent variable is the number of raptor species listed on eBird, and my dependent variable is the number of songbird species listed. There are three possible outcomes:

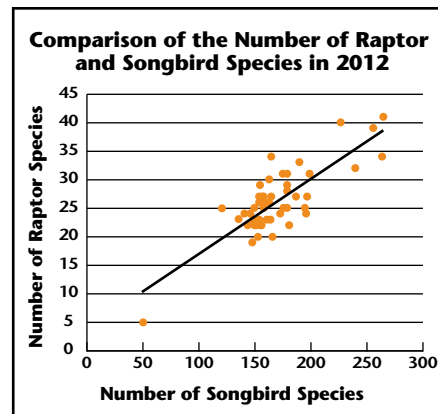
1. If there are more raptor species in a state, then there will be fewer songbird species in a state.

2. If there are more raptor species in a state, then there will be more songbird species in a state.
3. There was no correlation between the number of songbird species and the number of raptor species.

I believe that the third hypothesis would most likely support the data collected in my study.

Procedure

1. In eBird, select the “Explore Data” tab.
2. Select “bar charts.”
3. Select the first state, Alabama, and the “entire region” button.
4. Change the date range to all of 2012.
5. Count the number of raptor species (hawks, eagles, owls, falcons, ospreys, condors, kites, and vultures). Ignore any line that represents a generalization, like eagle sp. or Sharp-shinned/Cooper’s Hawk. These lines are a generalization for multiple species, so we cannot count that. Do the same for songbirds (specifically, the flycatchers and anything below that, unless it is obviously not a songbird, like an owl.)
6. Scroll up to the top and click the “change location” button, and change it to the next state.
7. Repeat steps 5 and 6 for all of the 50 states.



Great Horned Owl

by Emma, Grade 7
Minnehaha Academy, Minneapolis, MN
Mrs. Humason

Analysis

This data shows the number of songbird species and the number of raptor species in each of the 50 states of America in 2012. Most states have about 150-200 songbird species and 25-30 raptor species. The range of data spans from 5 to 41 raptor species and from 48 to 264 songbird species. There is one piece of data on the graph with only 5 raptor species and 48 songbird species; this was unexpected but not surprising. This was the data from the state of Hawaii, and the low number of songbird and raptor species is probably due to the fact that it is a smaller, more remote island state. All of the states loosely follow the trend line, showing that there is a connection between the number of songbird and raptor species.

Conclusion

Based on this data, I can conclude that there is a positive correlation between the number of songbird species and the number of raptor species. It does not support my chosen hypothesis: that there

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Blue Jay

by Alex, Grade 5, The Prairie School of DuPage, Wheaton, IL, Ms. Westberry



(cont.'d from page 9)

would be no correlation between the number of songbird species and the number of raptor species. However, it does support one of my other hypotheses that said that if there were more raptor species in

a state, then there would be more songbird species in that state. In a larger state, however, the simple fact that there is a larger amount of space may have provided living areas for more different species

to nest and live in, and thus drive the number of both songbird and raptor species higher. The opposite would go for smaller states—smaller area would equal smaller numbers of species. The state of Hawaii had a surprisingly low number of both raptor and songbird species. This could have been caused by bird watchers not submitting very many checklists, or Hawaii could just have a low number of species compared to other states. As always, the data would be more accurate if more people would submit their bird observations to eBird. It would be interesting to conduct this study in future years to find any possible changes. It would also be interesting to collect data from previous years and compile all of the data onto one chart to see how populations have changed over time. This data could also be cross-referenced with weather data, for example, to see if different weather patterns had affected the bird populations. Originally, my study was focused on the populations of songbird and raptor species, but I had no way to collect that data accurately. It would be fascinating to see the data from that study if a lab like the Cornell Lab of Ornithology had the means to collect it.

How Long Does it Take a Bird to Make a Nest?

by Brian, Grade 5
Nichols School
Buffalo, NY
Mr. Hayes

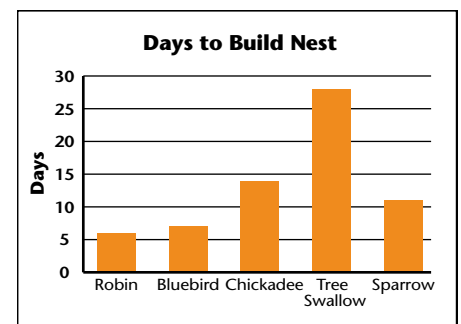
For my class project, I chose to answer the question “How long will it take a bird to build a nest?” My hypothesis was that it would take 5–10 days to make a nest.

In order to test my hypothesis I compared 5 different birds, Ameri-

can Robin, Eastern Bluebird, Chickadee, Tree Swallow, and House Sparrow. I used the Internet to get my data.

Through my research I discovered that it takes the American Robin 2–6 days to build a nest, the shortest of all 5 birds. In comparison it takes the Tree Swallow 28 days to build a nest. The remaining 3 birds take between 7–14 days.

I learned that to build a nest every single bird has its own timeline. I believe that a smaller bird takes less time than a larger bird to make a nest because the little bird doesn’t need a big nest.



Bibliography

- <http://www.allaboutbirds.org>
- <http://www.norcrossws.org/html/robins2.htm>
- <http://www.sialis.org/howlong.htm>

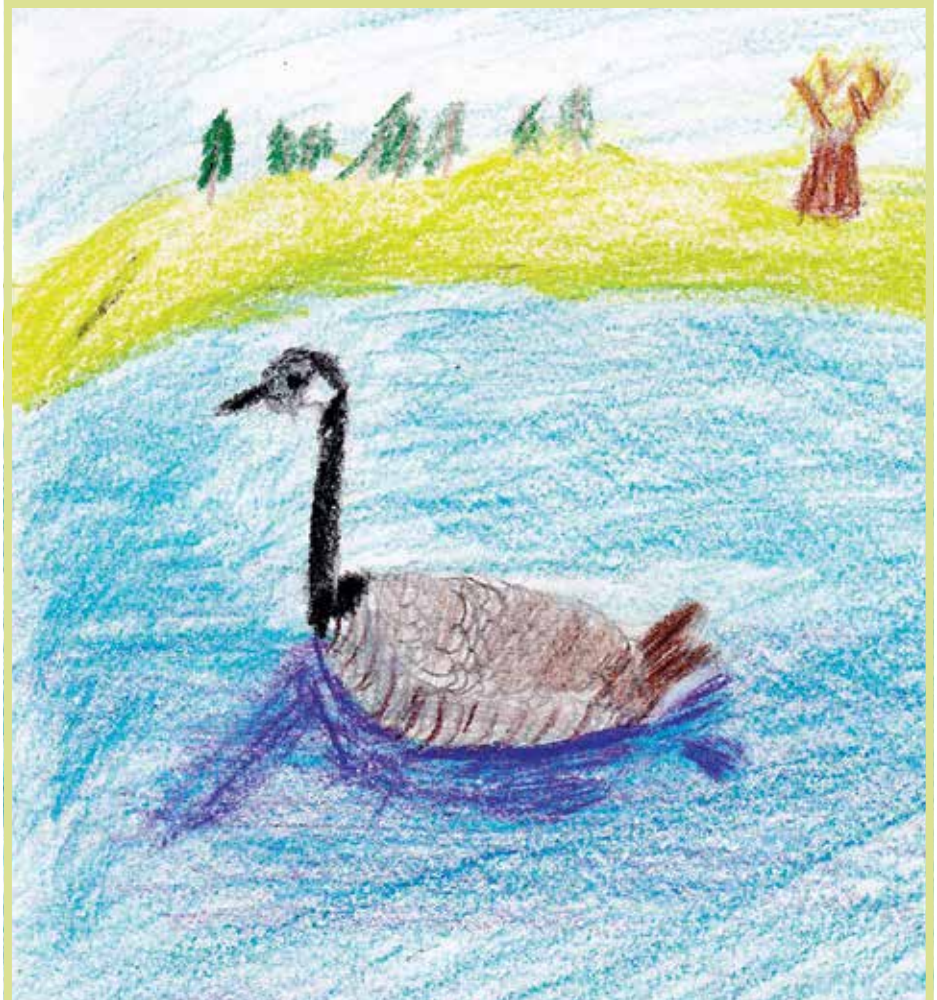
My Day at the Wetlands

by Kolby, Grade 8
Tualatin Valley Academy
Hillsboro, OR
Mr. Kahler

Suddenly Mr. Gatchet shouts... Look! Great Egret! We look down across the lake and sure enough there it is: tall, skinny, with bold white feathers, looking for fish in the water. It stands there just as if he is the king of the wetlands. It leaves its spot in the lake and soars over the crowd, attracting everyone's attention, catch of the day in its mouth. Great Egrets always catch my eye, as I see them lurk through the swamp or the lake to catch fish for their babies back at home.

The egret is in a different spot now across the lake, so I can still see it through my binoculars. I want to get a better look at this majestic bird, so I ask my teacher if we can start looking for birds as we walk around the trail. If I get lucky, the egret will still be there, and I can get a look at his long black legs, long feathers, and neck. Great Egrets are tall, pure white birds with a very long yellow bill. They are quite common at Fernhill Wetlands, and almost all of the time I see them they have some sort of a fish in their mouth. I think I know this bird's favorite treat. I walk in the front of the group so that I can get the best look at it before it flies off.

On the way around we see many other bird species that I admire very much, such as the Double-crested Cormorant. There were about 15 of them sitting on old tree snags, showing off their wings to everyone around. I think that the Double-crested Cormorants are like the jocks of the wetlands, showing off to everyone around while perched at the very top of a broken down tree. We get a look in the distance of a Peregrine Falcon, soaring above the clouds. We also see a couple of cool ducks at a pond in the back of



Canada Goose

by Haysie, Grade 4, The Prairie School of DuPage, Wheaton, IL, Ms. Westberry

Fernhill like the Bufflehead, Northern Pintail, and Ring-necked Duck. All of these birds are only warming me up to get a close up look at the Great Egret.

I look out where the egret was and there he still is, fishing just as before. We get closer and closer when someone in the group spots a Great Blue Heron, a distant family member of the Great Egret. We all "ooh" and "aah" when the Great Egret flies away. I try and look through my binoculars to get a close look, but I can't spot it as it is too far away and just too hard to see. I am disappointed I didn't get that close look because I dedicated this trip to seeing the Great Egret! We finish the trail and see lots of other bird

species like the Song Sparrow, Canada Geese, and a lot of Red-winged and Brewer's blackbirds.

We are about to end our Fernhill wetland trip when we see what may be the most majestic bird of them all, the Bald Eagle. It soared over us, when out of nowhere a Canada Goose flies up to the Bald Eagle and stirs up a fight. The Bald Eagle strikes back and doesn't stop. The Canada Goose doesn't realize how strong this Bald Eagle is, and he knows he's not going to win this fight, so he quickly dives down into the water. He hides like this for quite a long time, and the Bald Eagle ends up flying back to its nest to feed its young.

(cont.'d on page 12)

(cont.'d from page 11)

I'm happy I got to see this awesome sight as we start to head back to the bus. I am still somewhat disappointed I didn't get to see that close up look of the Great Egret, but I thought it was OK because I saw a lot of other cool birds. We're getting really close to the bus now, and out of the blue a Great Egret is on the shore for just a split second, and I get my close up look. I am ecstatic, I thought I wasn't going to be able to see it close up, but I did! I finally actually got a good look at the long yellow bill, long white neck, and the awesome white feathers of the Great Egret!

I finish this trip on a high note, and I fulfilled my goal of the day. My day at the wetlands was definitely awesome! I ended up seeing 28 species, and my class and I planted 250 plants for Clean Water Services at Fernhill Wetlands. I can't wait to see new birds at Fernhill Wetlands, and hey maybe next time I go birding I can make my goal to see a "Little Egret!" Can't Wait!



Bald Eagle
by Jackson, Grade 7
FDR Middle School,
Bristol, PA
Mrs. Mueller

Eagle's nest was, so I was excited to see that. While we were on the trail you could see the Bald Eagle flying back and forth to its nest. We saw a lot of neat birds on our way around the trail, but I was waiting to see the Bald Eagle. When we got to the closest point of the nest of the Bald Eagle I was excited. But sadly we came too late and it wasn't there. So we kept along the trail to finish our journey.

In the afternoon we came back to the undercover place and ate lunch. After lunchtime was over our guide, Christian, took us to this part of the trail that had plants all over but were not planted. I knew then that we were going to be the ones to plant them. On the inside I didn't really want to do it, but I knew it would be a good thing to do. During the community service we all got in groups and started to plant. To my surprise I actually enjoyed the planting; it made me feel good to know that I was helping out a community but also that I enjoyed the work. On our way back, Christian told us about the neat project they are working on to help the wetlands. After our adventure was over and we were walking back through the wet and muddy trail, something caught my eye. The majestic Bald Eagle swooped down over the lake to catch its prey! The Canada Goose just minding his own business, dived down into the lake to avoid being an afternoon snack. The Bald Eagle missed it by a fraction of a second, but to the goose's surprise the eagle was coming back for another go. It amazed me that I was lucky enough to see this magnificent sight. When the scene was over and we had to get going, it made me upset we couldn't stay longer. At the end of the day I got to see some awesome species I have never seen before and got to help out the community and now I have some good memories of Fernhill Wetlands. All I can say is that it was both a fun and productive day.

The Day at Fernhill

by Corey, Grade 8
Tualatin Valley Academy
Hillsboro, OR
Mr. Kahler

On our journey to Fernhill Wetlands, I was on the bus thinking of what birds I wanted to see. I kept hearing interesting stories about the Bald Eagle and its nest it has there, and I knew I wanted to see it. When we got there I was thrilled to see what kind of birds I could see right away. I didn't see any birds that really caught my attention, just the typical kind of birds. We stayed at an undercover structure when we got there because we were waiting for the weather to

clear up. While we were there we saw about 10 to 15 species! John Gatchet, the former superintendent of our school, came to go birding with our class. During our wait under the covered area he brought his spotting scope for the birds that were off in the distance. I was still waiting to see the Bald Eagle but there was no luck. Then I heard John Gatchet say that he spotted one through his scope. I wanted to be the first to see, and when I came to the scope and saw the Bald Eagle in its huge nest I was so amazed at how big and majestic it was.

What makes the Bald Eagle one of my favorite birds? For one it is a symbol of our nation. How it soars majestically through the air just takes my breath away. We finally got on the trail when the weather cleared up. The trail moved around the lake and by where the Bald

Build Your Own Backyard Bird Feeder

by Merve, Grade 7
FDR Middle School
Bristol, PA
Mrs. Steinberger

What you'll need

- Clean 1-liter soda bottle
- Craft knife
- 2 wooden spoons
- Small eye screw
- Length of twine for hanging

How to make it

1. Start by drawing a 1/2-inch asterisk on the side of a clean 1-liter soda bottle, about 4 inches from the bottom. Rotate the bottle 90 degrees and draw another asterisk 2 inches from the bottom. Draw a 1-inch-wide circle opposite each asterisk, as shown.
2. Use a craft knife to slit the asterisk lines and cut out the circles (an adult's job). Insert a wooden spoon handle first through each hole and then through the opposite asterisk, as shown.
3. Remove the bottle cap and twist a small eye screw into the top of it for hanging.



4. Finally, fill your feeder with birdseed, recap it, and use a length of twine to hang it from a tree.



Log Bird Feeder

by Tori, Grade 7
FDR Middle School, Bristol, PA
Mrs. Steinberger

Spring
by Terra, Grade 7
Minnehaha Academy
Minneapolis, MN
Mrs. Humason

Birds in the morning
all through the day
chirp-chirp, and play, play, play.
Mothers search rapidly
looking for sticks
where soon, they will hatch
their chicks.
Baby birds hatch
all cute and cuddly
very excited, to meet a new buddy



Barred Owl
by Mardievance, Grade 7
FDR Middle School
Bristol, PA
Mrs. Steinberger



Wood Duck Drake and Hen

by Grace and Emily, Grade 2, Kettle Falls Elementary, Kettle Falls, WA
Mrs. Corvino and Mrs. Smith



Northern Cardinal

by Chris, Grade 7
FDR Middle School, Bristol, PA
Mrs. Mueller



Mallard

by Georgia, Grade 7
Minnehaha Academy,
Minneapolis, MN
Mrs. Humason

Dark-eyed Junco

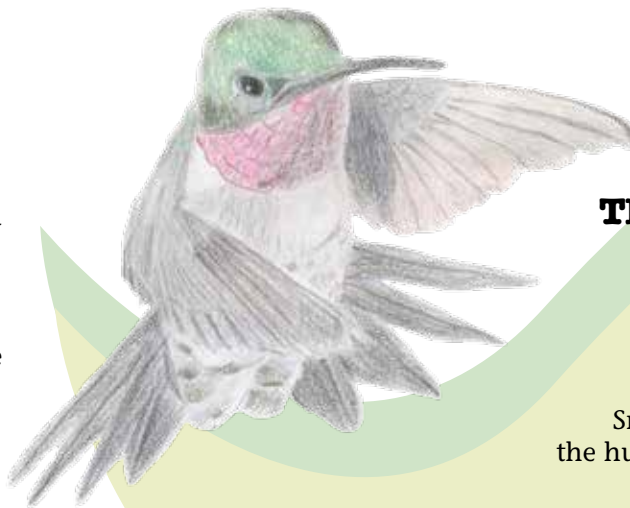
by Jonah, Grade 7
Minnehaha Academy
Minneapolis, MN
Mrs. Humason

Dark-eyed Juncos
are an awesome bird
They are black and white
and are not furred
When winter comes around again
I'll hear a Junco's sound and then
The snow will be falling,
all shiny and bright
And my face will light up
with delight
My long awaited feathered friends
Will come back again
until the cold ends
The winter is cold,
it blows and gusts
But a Dark-eyed Junco
will never fuss
It is happy to hop on the ground
and feed
On sunflower, thistle,
and millet seed
A Junco will come from far away
Oh how I wish
they were here to stay
Canada is where they go
When the sun comes out and the
warm wind blows
They'll fly to find
their hometown land
Where it is cold in the summer
(that they can stand)
Until the winter comes I wait
For my dark eyed friends,
they won't be late

**Your Wings
Touch the Sky**

by Emma, Grade 7
Minnehaha Academy
Minneapolis, MN
Mrs. Humason

A flutter, a flash of wings,
What is this mysterious creature
that sings?
I reach out to touch your feathers,
But you fly away, into the weather.
Flying up so high,
Your wings can touch the sky.
I follow you with my eyes,
You're as beautiful as a sunrise.
You land on a hickory tree,
Now how will I reach thee?
I place the seeds in my palm,
Waiting, I am calm.
I watch as you hop
from tree to tree,
Coming ever closer to me.
Finally you have reached the place
I stand,
I drop some of the seeds on the land.
My hand rests next to the seeds,
You jump on when you please.
I stand up, to admire your colors
You are unique,
just like the rest of our brothers.
But how do I describe you?
What is the word?
I know it! You're a bird!



Ruby-throated Hummingbird

by Daniel, Grade 7
Minnehaha Academy, Minneapolis, MN
Mrs. Humason



Black-capped Chickadee

by Lauren, Grade 7
Minnehaha Academy, Minneapolis, MN
Mrs. Humason

Birds

by Samantha, Grade 7
FDR Middle School
Bristol, PA, Mrs. Mueller

Flying high, so majestically.
Not a care in the world
just the wind in their wings.
The breeze through their feathers.
Swooping down to catch
a pink ribbon of breakfast.
As the array of different color
hides away in a tree,
the feeling
of accomplishment you get
when you recognize
the beautiful creature.
The differences between
the gorgeous orange with black
from the blue and the reds.
Pulling together our ecosystem
like needles and thread.
They are,
Birds.

The Hummingbird

by Armani, Grade 7
FDR Middle School
Bristol, PA
Mrs. Steinberger

Small, sweet and colorful,
the hummingbird zips swiftly from
flower to flower
consuming sweet nectar.
Wait! What's that sound?
It's the sound of life, a humming
bird's quiet wings.

Free Resources

The screenshot shows the BirdSleuth K-12 website interface. At the top, there is a navigation bar with the Cornell Lab of Ornithology logo, a search bar, and links for 'Get eNews', 'Contact Us', 'Donate', and 'Join the Fun!'. Below the navigation bar, the 'FREE RESOURCES' section is displayed with a grid of six resource cards:

- Feathered Friends Activities**: Your feathered friends can help you learn science, math, and art.
- Investigating Evidence**: Real science for real kids!
- Homeshooleer's Guide to Project FeederWatch**: Your feathered friends can help teach math, science, and art.
- Evolution in Paradise**: Lessons brought to you by the most extravagant birds in the world.
- Get a Bird's Eye View on Nesting Birds!**: Activities to accompany the Bird Cam.
- Using eBird with Groups**: Become citizen scientists!

At the bottom of the screenshot, there is a 'Our Mission' section with a circular image of students and a paragraph: 'BirdSleuth K-12 creates innovative resources that build science skills while inspiring young people to connect to local habitats, explore biodiversity, and engage in citizen science projects.' Below this is the Cornell University logo and contact information: 'Copyright © 2013 Cornell University, Cornell Lab of Ornithology, 159 Sapsucker Woods Rd Ithaca, NY 14850 Tel: 800-843-2479'. There are also links for 'Contact Us', 'Privacy Policy', 'Terms of Use', and 'All About Birds', along with social media icons for Facebook, Twitter, and Pinterest.

To assist educators in leading successful birding experiences with students, BirdSleuth has a unique variety of free resources available for download. We encourage you to take a look at our seasonal lesson plans, exciting videos, and guided instruction booklets. From building a bird feeder to conducting an inquiry based investigation, the additional information is written specifically for educators. Find a resource that meets your learning goals at <http://www.birdsleuth.org/free-resources/>.

The Cornell Lab of Ornithology
BirdSleuth K-12

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To learn more about BirdSleuth, visit www.birdsleuth.org

We would like to thank our student employees for the valuable assistance they provide.

The BirdSleuth team values your feedback. If you have questions or comments, you can use any of the following methods to reach us:

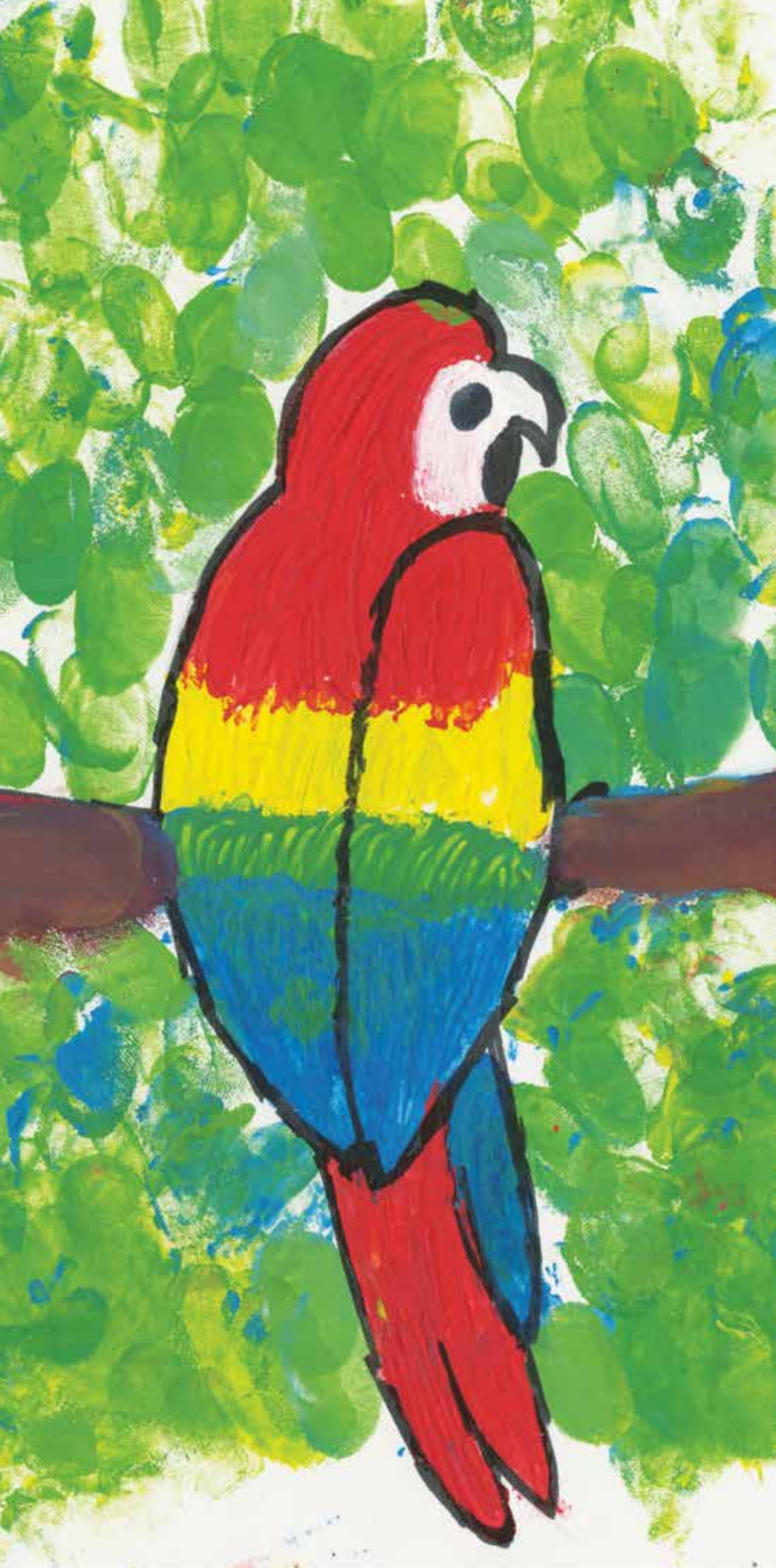
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Cornell University



Scarlet Macaw

*by Ariana, Grade 7
FDR Middle School
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Mrs. Steinberger*

Most of the 331 known parrot species (including parrots, macaws, parakeets, cockatoos, and lorikeets) are highly social; they love to live together in dense flocks during the non-breeding season. That highly social behavior, which humans can view or feel as human affection and loving, may be why people look for parrots as pets. However, their numbers are declining due to illegal pet trading and deforestation. If you are considering a parrot as a pet, please learn about captive vs. illegal trading first. Better yet, I invite you to go online and explore the many natural regions of the world where you can still enjoy watching them in the natural habitat.

*—Eduardo E. Iñigo-Elias, Ph.D.
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Initiative in the Conservation Science Program
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