

# Welcome!

- Please introduce yourself, organization, and Collaborative/State in the chat box.
- What is one way you are thinking of using Citizen Science/Inquiry resources?



May 11, 2017

# Goals

- Provide more information about the Cornell Lab project
- Describe inquiry and citizen science
- Answer any questions about the project and application



# Agenda

- Describe citizen science and available projects
- Describe inquiry and its benefits
- Overview of the “Inquiry through Citizen Science” Project
  - Project benefits, requirements, and timeline
- Q&A



# Cornell Lab of Ornithology Inquiry Citizen Science Project Team



**Jennifer Fee**  
Manager of K-12 Programs



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Development



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# Cornell Citizen Science Collaborative

## *Habitat Connections, 2016*



# Integrating Inquiry through Citizen Science Collaborative



Jennifer Fee  
Manager of K-12 Programs

# The **Cornell** Lab of Ornithology



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





**BirdSleuth K-12 helps educators bring the power and engagement of citizen science and inquiry to their students**






# What is “citizen science?”





A photograph of three children, two girls and one boy, standing on a wooden deck or boardwalk. They are all looking through binoculars, focused on something in the distance. The background is a dense forest of green trees. The children are in the foreground, slightly out of focus, while the text is overlaid on the right side of the image.

*Projects in which  
volunteers partner  
with scientists to  
answer real-world  
questions.*

**In citizen science, people everywhere report observations of natural events using basic, scientific protocols.**



295 million observations submitted  
21.7 million checklists entered  
279,000 participants  
10,226 species  
Every country in the world  
Over 2 million locations







# Citizen Science Projects:

from ladybugs to warblers, and everything in between!



International  
Pellet Watch







# CLO Citizen Science Projects

1. Identify and observe birds
2. Collect data
3. Enter data online
4. Retrieve and view online data



# Great for Educators!

- Exciting and real-world
- Opportunity to study wild animals
- Low cost, year-round activity
- It helps!
- Sparks kids' curiosity
- Connects kids locally

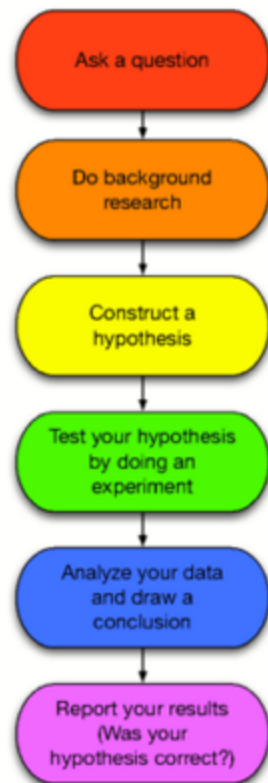






What is “inquiry?”

LET'S CHAT!



Copyright 2014  
InqyCo

## Inquiry...

- Asking and answering own questions (authenticity)
- Develops science practices (STEM skills)

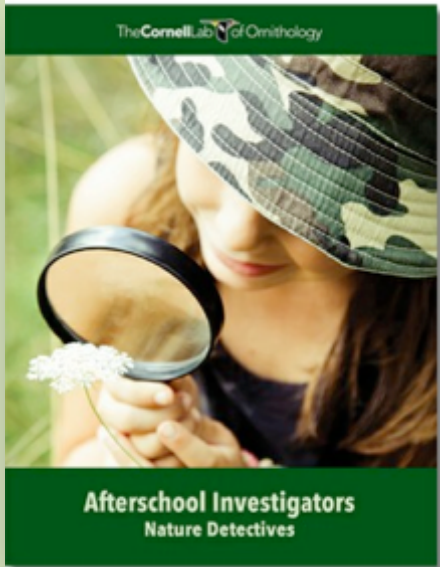


# “Investigations”

## The SCIENCE PROCESS: What will YOU Discover?







## Nature Connection



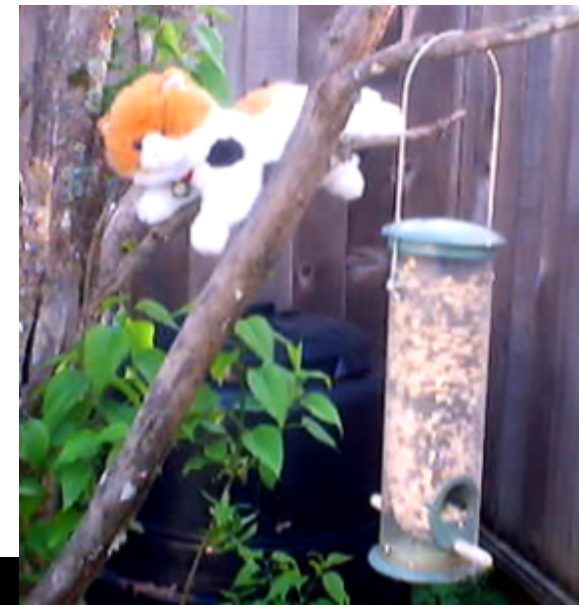
## Citizen Science



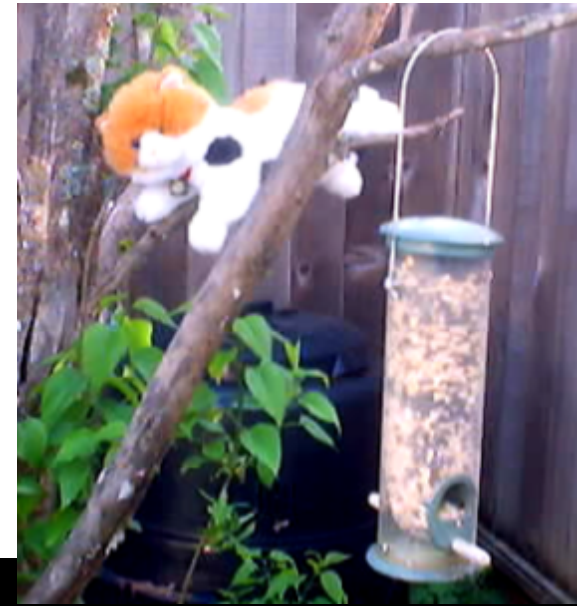
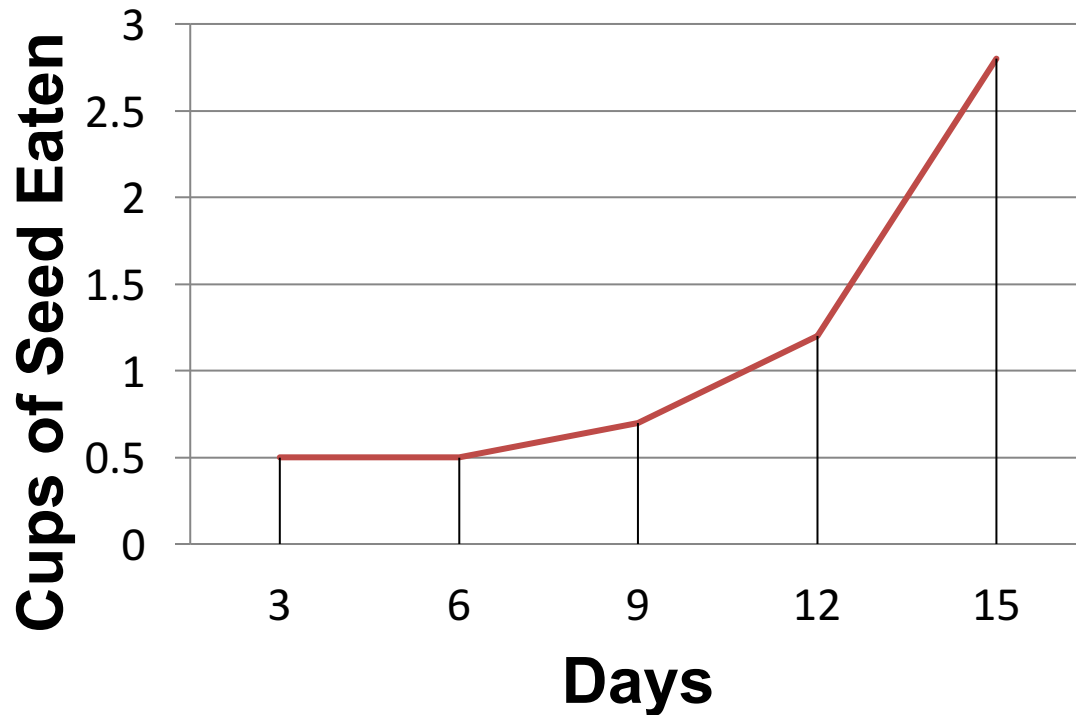
## Inquiry



The cat is a  
good guard



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





# Great for Girls (SciGirls Seven)

1. Girls benefit from **collaboration**....
2. Girls are motivated by projects they find **personally relevant and meaningful**.
3. Girls enjoy hands-on, **open-ended projects and investigations**.
4. Girls are motivated when they can **approach projects in their own way**...
5. Girls' confidence and performance improves in response to specific, positive feedback on things they can control....
6. Girls gain confidence and trust in their own reasoning when encouraged to **think critically**.
7. Girls benefit from relationships with **role models and mentors**.

## Benefits of Program

- Free access to *Integrating Inquiry* Course
  - Curricula and materials
  - Ongoing support  
(access to experts in citizen science, inquiry, bird studies)
  - 2 CEU credits from Cornell University
- > High quality, equitable experiences to deliver to youth

The Cornell Lab of Ornithology



## Investigating Evidence

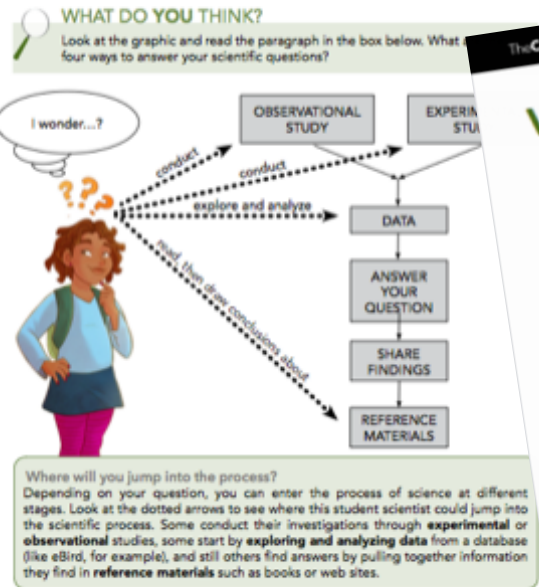
Inspire Investigations through outdoor observations and citizen science!

TEACHER'S GUIDE



## 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.



The Cornell Lab of Ornithology

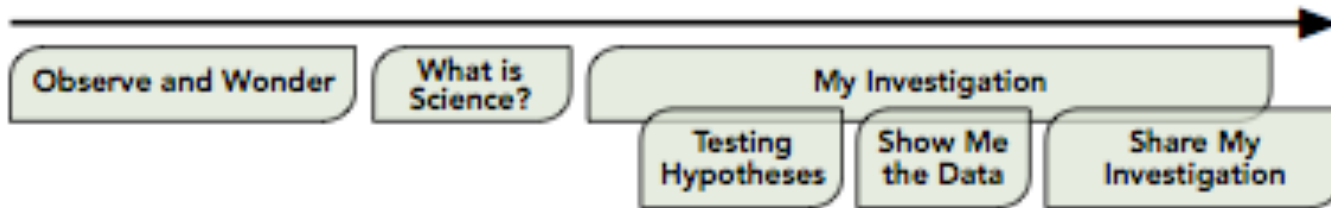
Resource Pages: Kinds of Questions 1

## Variables in Science Experiments

What makes an experiment "fair"?

Investigating Evidence  
The Cornell Lab of Ornithology  
BirdSleuth K-12

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





## Integrating Inquiry for Educators: Developing Student Science Practices

[Edit this post](#)

Courses / Integrating Inquiry for Educators: Developing Student Science Practices

### Greetings Educators!

We've designed this self-paced course to help educators **explore the process of inquiry and scientific investigation**, especially as inspired by **outdoor observations and citizen-science participation**. Our popular *Investigating Evidence* curriculum is the "textbook" for the course.

You can purchase the course with printed curricula/handouts or opt for the electronic version that you can download and/or print yourself. Feel free to explore *Investigating Evidence* at [www.birdsleuth.org/investigation](http://www.birdsleuth.org/investigation). You can also elect to



### Welcome to the course!



### After Lesson 1, you will be able to...

1. Describe "citizen science" accurately in your own words.
2. Describe "inquiry" accurately in your own words.
3. Explain reasons educators use citizen science and inquiry in their teaching/programs.
4. Describe how citizen science and inquiry are related.



Throughout the lesson, please be sure to complete all readings, assignments, and discussion questions.

### Bird Academy

- Lesson 5: Assessing and Sharing Inquiry
- Lesson 6: Conclusions

Return to Integrating Inquiry for Educators: Developing Student Science Practices

My Courses:

- Be a Better Birder: How to Identify Bird Songs
- Be a Better Birder: Warbler Identification Live Series
- Spring Field Ornithology—Northeast
- Ornithology: Comprehensive Bird Biology
- Be a Better Birder 1: Size and Shape
- Be a Better Birder 2: Color and Pattern
- Be a Better Birder: Duck and Waterfowl Identification
- Integrating Inquiry for Educators: Developing Student Science Practices
- Welcome to Waterfowl: A Preview of Duck and Waterfowl ID
- Home Study Course in Bird Biology

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Featured Bird-ology Topics

Browse Interactives + Videos

Textbook Handbook of Bird Biology

Courses Bird ID + Behavior

My Profile Progress + Badges

1 2 3 4 5

4. Question

The following graphs all represent the same data. Which one(s) are best at showing the favorite subjects of people in my grade?

Favorite Subjects

Subject	Percentage
Science	32%
Math	16%
Spanish	19%
Gym	19%
English	5%
Social Studies	9%

## Discussion

22 Comments

The Cornell Lab Bird Academy

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Sort by Best



Join the discussion...



Lauren Salzman · 8 months ago

All of these ideas are inspiring! Our organization is adapting the motto of "make learning visible" for the coming year, and I look forward to the challenge of documenting and facilitating youth in documenting their learning through a variety of channels! I like the idea of reports and posters that can be hung near our entrance for visitors to see, videos that can be shared through website and social media, and submissions to publications for peer review! So many ways to share information and the process of learning these days!!!

1 ^ | v · Reply · Share



Melissa Watkins · 8 months ago

With 4-H Youth, We have shared student work through news articles, some videos, presentations, along with sharing student work through 4-H Youth Fair. The kids are so excited to share their learning and accomplishments. The ways that youth present their work allow them to gain skills related to presentations, communication, leadership and positive self image that will help them in the career world. Social Media, blogging is also opening up avenues to share student work, and sharing the great things that they are doing, as well.

Topic Progress: ☒ ☐ ☒ ☒

Showing off your learners' work can be very rewarding. The recognition of spotlighting youth talents and creativity can inspire them to greater achievement as simple as adorning the halls outside your classroom with student projects. More complex like supporting learners in publications, science fairs, blogs, and newspapers are four ways to share learners' work. Click on each kind to learn more.

BirdSleuth Investigator

Create a Video

Science Fair Poster

Newspaper Articles

## Program Requirements

- Complete the *Integrating Inquiry Online Course* (June-July, 20 hours)
- Engage ~20 students in the activities (May-October, 20+ hours)
- Participate in evaluation activities (including pre and post surveys for yourself and the students you teach)



# Timeline

## Application and Launch

- May 11 > Informational Webinar
- May 15 > Applications due
- May 17 > Accepted applications announced
- May 17-22 > Educator pre-surveys

## Course

- May 22 > Start “Integrating Inquiry” Course (20 hours of content)
- May-June, TBD > Conference call/discussions for all available educators
- July 14, 2017 > Deadline to finish course

## Teaching and Evaluation

- June-September > Collect pre-assessment youth survey
- May-October > Implement citizen science and investigations with youth
- October 27 > Deadline to collect and submit post-assessment youth survey
- November 1, 2017 > Educator post-survey

# How will you integrate inquiry into your programs?

- Who are you planning to engage in this project?
- Are there local partnerships that could arise from participating in this project?
- Are there other ideas you'd like to share?



# QUESTIONS?

**Keep in Touch!**

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