

Inspiring Investigations through Citizen Science

Instructor:

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Dates:

Required Text:

Investigating Evidence

You can either download the free curriculum or purchase a print for \$25:

birds.cornell.edu/k12/investigating_evidence

Course Overview:

Discover how citizen science and student-driven investigations meet Next Generation Science Standards and support student learning.

Course Outcomes:

After completing this course, you will be able to:

- explain the benefits of teaching with citizen science and inquiry;
- identify the science practices developed through citizen science and inquiry;
- describe the complexity of the science process;
- support students in developing their own investigations;
- create an implementation plan for using citizen science and science investigations with students.

Course Expectations and Guidelines:

These guidelines will help you succeed in this course:

1. This course is fully online. You will need a computer and access to a high speed internet connection. You received a registration code and instructions via email when you registered for the course.
2. Read and complete all online lessons and topics, quizzes, readings, and discussions.
3. Email me when you have any questions or concerns about the course, or experience technical difficulties.
4. We intend that this course will add practical value to your professional work. Share your personal examples and experiences. We can all learn from each other!

Course Grading:

• Assignments:	64 points
• Quizzes:	50 points
• <u>Discussions:</u>	<u>36 points</u>
TOTAL:	150 points

Grades will be assigned based on the following scale:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	<60%

In the final week of the course I will email you to set up an optional meeting to discuss your grades. You can also contact me at any time to discuss your grades during the course.

Assignments—Course Journal:

During the course you will be asked to complete four assignments which are found in the Course Journal. You will be able to access the Course Journal in the introduction. Each assignment will be graded on completeness and thoughtfulness that demonstrates understanding of the course material.

- “I Wonder” Board: 4 points
 - Design an Investigation: 15 points
 - Data Collection: 15 points
 - Implementation Plan: 30 points
- Total 64 points

Discussion Guidelines:

Active and regular participation is an important way to learn course content and make connections between topics. Each discussion is worth up to 3 points. To receive full credit you must:

1. Write one post per discussion
2. Demonstrate an understanding of the course material
3. Respond to at least one other post per discussion.

There are a total of 12 discussions in the course (36 points total).

Quizzes:

There are five quizzes embedded in the course. You must receive at least an 80% on each quiz before moving on to the next section. You can take each quiz as many times as you’d like, and your highest quiz grade will be converted to a 10 point scale (5 quizzes, 10 points each, 50 points total).

Course Outline:

The course is divided into six lessons. Each lesson will take one week to complete and all lessons, readings, and assignments must be completed by Sunday, December 1. The lessons and assignments are listed below.

Lesson 1: Inquiry, Citizen Science, and Educational Standards

- Topic 1
 - Reading: *What is Inquiry*
 - Discussion: Inquiry concept map and definition
- Topic 2
 - Reading: *Many Levels of Inquiry*
 - Discussion: Analyzing current inquiry practices
- Topic 3
 - Reading: *Investigating Evidence* introduction and citizen-science spotlights
 - Discussion: Reflecting on citizen science
- Topic 4
 - Reading: *Real Science in the Palm of Your Hand*
 - Discussion: Teaching practices
- Topic 5
 - Reading: *Investigating Evidence* lessons 1 and 2
 - Discussion: Inquiry and citizen science
 - Quiz: Inquiry and citizen science review

Lesson 2: Observe and Wonder

- Topic 1
 - Reading: *Lemon of a Lesson*
 - Discussion: Sound map reflection
- Topic 2
 - Reading: *I Wonder...*
 - Assignment: Course Journal "I Wonder" Board
- Topic 3
 - Discussion: Supporting observations
- Topic 4
 - Quiz: Lesson 2 Review
- Topic 5
 - Assignment: Participate in citizen-science project
 - Discussion: Reflect on citizen-science project participation

Lesson 3: Plan and Carry Out Investigations

- Topic 1
 - Reading: *Investigating Evidence* lessons 3 & 4
 - Discussion: Encouraging questions
- Topic 3
 - Quiz: Independent and dependent variables
- Topic 5
 - Assignment: Course Journal Design an Investigation

Lesson 4: Collect and Visualize Data

- Topic 1
 - Reading: *Investigating Evidence* lesson 5
- Topic 2
 - Reading: *The Graph Choice Chart*
 - Quiz: Which data, which graphs
- Topic 3
 - Discussion: Quest citizen-science data
- Topic 4
 - Assignment: Course Journal Data Collection

Lesson 5: Assess and Share Investigations

- Topic 1
 - Reading: *Investigating Evidence* lesson 6
 - Discussion: Addressing challenges around teaching and assessing inquiry
- Topic 2
 - Quiz: Assessing investigations with rubrics
- Topic 3
 - Discussion: Reflecting on assessment

Lesson 6: Conclusions

- Topic 1
 - Assignment: Implementation plan and submit Course Journal
- Topic 2
 - Course evaluation survey