

Conducting a Field Study in Your Backyard

(Part II: Data Analysis and Scientific Explanation)

Looking to have your students learn about the role that communication plays in science? This is a great way to help students practice using evidence that they have collected during a field investigation to construct a strong scientific explanation, while aligning your instruction to the NGSS!

Objective:

- Students will construct a strong scientific explanation with a claim that is rooted in evidence and supported by scientific reasoning.

Materials:

- [Data Collection Sheet for Animal Population Surveys](#)
- [Designing a Scientific Explanation Tool \(DSET\)](#)
- [Assessment Criteria Checklist for Analyzing Scientific Explanations](#)

Process:

- 1) Once the groups are finished collecting their data (see *Conducting a Field Study in Your Backyard, Part I*), they will be asked to return to the classroom and generate a graph (page 3 of the data collection sheet packet) comparing and contrasting the number of individuals of the selected species for each level of the independent variable.
- 2) Students will construct evidence-based claims for the investigation question by interpreting the graph (see page 3 of the data collection sheet packet).
- 3) Students will share out their claims and evidence with each other.
- 4) Students will construct scientific explanations using the DSET graphic organizer as a guide.
- 5) Students will participate in a peer review process of the scientific explanations they have developed using the assessment criteria checklist.
- 6) **EXTENSION:** After conducting this investigation, what are some things that students have learned? What are their next steps? Are there future investigations they'd like to conduct moving forward?

Supplemental Resources:

- a. Recommended Book: [Supporting Grade 5-8 Students in Constructing Explanations in Science](#) by Katherine L. McNeill and Joseph S. Krajcik

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