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:
- Recommended Book: Supporting Grade 5-8 Students in Constructing Explanations in Science by Katherine L. McNeill and Joseph S. Krajcik