

Teaching students about bird migration through a game during a bird-watching field trip in Missoula, MT



Enhancing ecology education through international connections

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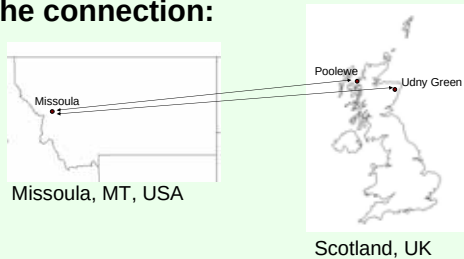


Target Range students Aleah and Nicole show off their ECOS journals during their electrofishing field trip

Introduction

The worldviews of children are generally small and reflect their tangible knowledge of the places around them. As the world becomes increasingly globalized, it becomes important for children to maintain a depth of knowledge of their own place, but also to be exposed to other cultures and not become isolated. One area in which students can explore both local and global questions is the field of ecology. Students can achieve a local depth of understanding of natural processes in their own backyards and schoolyards. However, they can also explore ecological concepts at larger scales such as biogeography, global weather patterns, and phenology. One way of educating students about global processes in ecology is through international connections. These connections may allow students to more directly relate their local environment to global ecological processes. An intimate and direct connection between individual students from different countries can allow students to directly communicate about science and ecology through letter writing and reports. The value of this type of direct connection may extend into different areas. Students can learn more about a different culture through ecology projects, and learn to explain the results of their projects to an international audience of peers. In addition, teachers may learn about other cultures and teaching ideas from this type of exchange.

The connection:



Third grade students from Target Range Elementary wrote to students at Poolwe Primary School and Udney Green School in Scotland.



Poolwe, Scotland



Udney Green school



Poolwe student drawings of wildlife seen in a local pond during an aquatic biodiversity field trip

Abstract

International exchanges can help elementary school students understand concepts of biogeography, biodiversity, and natural history while enlarging their worldview. Through an eco-pen pal project, third grade students from Missoula, Montana, USA corresponded with five-to eleven-year old students at two rural schools in northern Scotland about specific ecological inquiries that were simultaneously implemented, including aquatic biodiversity and bird ecology. Students prepared scientific reports to share the results of their findings with each other, in addition to contributing artwork and written descriptions of their experiences. Students discussed differences between their findings and the results of their pen pals' projects, and reasons for these differences. Program assessment revealed that students were able to identify major reasons for differences in biodiversity and phenology between the two countries.

The Projects

1. Fall Aquatic Biodiversity

- Target Range: electrofishing field trip
- Poolwe Primary: "life in the lochans" aquatic trip



Poolwe Primary students' depiction of the wildlife they might see in a local pond

Target Range third grader Shelby holds a large-scale sucker caught electrofishing in Montana



2. Winter Bird Ecology

- Montana: Audubon's Great Backyard Bird Count
- Scotland: RSPB's Big Schools' Birdwatch

Udney Green student Hannah charted a chaffinch's movement and behavior across her schoolyard



3. Spring Gardening and Phenology

- Target Range: phenology calendar and native plant garden
- Poolwe: wildlife pond garden
- Udney Green: Spring eco-day and garden plots



Target Range student Jae journaling during the fishing field trip

Target Range students and community members working on the native plant garden



Teacher response

"[The exchange] helped [students] appreciate the bigger picture of the diversity of life on Earth."-- Margaret Young, Poolewe Primary

"The class loved getting the letters and it gave them a real purpose for letter-writing."-- Jessie McCaffery, Udney Green School

"Getting the letters and sharing them was the best part because it allowed for discussions about Scotland and led us to extending what we were learning here."-- Tara Barba, Target Range School

"[The exchange] allowed me to grasp the understanding and misconceptions shown by the children during our discussions"-- Margaret Young, Poolewe Primary

"I learned how we are similar and [...] different culturally as well as ecologically."-- Tara Barba, Target Range School

Student results

- 94.4% of Montana students and 91.3% of Scotland students said that they enjoyed the pen-pal exchange
- 94.4% of Montana students and 88.2% of Scotland students said that they learned new and interesting things about ecology in the other country
- When asked why bird biodiversity and phenology are different between the two countries, students correctly identified climate, latitude, and continent v. island as key reasons. Few students were unable to name at least one of these elements

Target Range student artwork in a letter to Scotland about a spring bird-watching trip



Poolwe student Lucy's depiction of a European robin in a report to Target Range about their bird-watching project



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