

Real Science

Middle school students rarely have the opportunity to work with their own data and observations. This project is designed for students to collect, analyze, and present their own data.

Curriculum/State Standard

New York State Standard 4, Key Idea 1

Overview

Real Science is an opportunity for students to become ecologists. Students work as a team to collect data, analyze it, and present it in an informative way.

Objectives

- Students will use field guides to identify plants and animals present in a school wood lot.
- Students will calculate population density (number of organisms/unit area) of selected species.
- Students will create brochures representing what they have learned about the area.

Materials

- Audobon Society Field Guide to Insects and Spiders
- Audobon Society Field Guide to Butterflies
- Audobon Society Field Guide to Reptiles & Amphibians
- Audobon Society Field Guide to Eastern Birds
- Audobon Society Field Guide to Mammals
- Audobon Society Field Guide to Eastern Trees
- Audobon Society Field Guide to Eastern Wildflowers
- Peterson Field Guide to Mushrooms
- Peterson Field Guide to Ferns and Relatives
- fabric diameter tape
- perforated flagging
- 15m length tape
- small diameter PVC pipe and elbow joints to make 5 one square meter grids
- PVC glue, etc.
- computer supplies for reports

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GRADE LEVEL



ARTS



LANGUAGE



MATH

Misc

MISCELLANEOUS



SCIENCE



HISTORY



SOCIAL STUDIES

15

PERIODS

\$425

TOTAL BUDGET

“Real Science” project continued...

Readiness Activity

Students are given an overview of how to use different field guides (an extension of classifying organisms) and are instructed on how to calculate population density.

Strategies/Activities

Students are divided into teams (4-5 students). Each team must participate in the wood lot activity and record the following data: 10 square meter plot to identify and count woody plants, 1 square meter plot to identify and count herbaceous plants, time for observation of other species within the woodlot

Culminating Activity

The culminating activity was to make a brochure that discusses the importance of a wood lot to the ecology of an area. Students were to use their own data to make a brochure that explained the species present and their importance.

Evaluation

The brochures were evaluated using the following rubric:

Not Complete, 3, 4, 5, Food Web

- Food Web is not included in the brochure.
- Many species are missing and some are not placed realistically. Includes some of the species from your data.
- Web is hard to follow. Includes most of the species identified in your data.
- Web is a good representation.

Chart on Population Density

- Chart is not included in the brochure.
- Chart is hard to understand and is missing data from your data table.
- Chart is clear and easy to read but is missing the title or unit of measurement.
- Chart is clear representation of the species present in the wood lot and includes title and units of measurement.

Essay

- Essay is not complete.
- Essay has many mechanical mistakes and is very unclear about the importance of the area.
- Essay has a few mechanical mistakes but is still supportive of the importance of the area.
- Essay is at least 5 paragraphs and uses correct grammar, punctuation, and spelling. It is clear to the reader the importance of the area.

Cooperation

- Student was disruptive to other students.
- Student was not working most of the time but did not interrupt others.
- Student was off task some of the time.
- Student worked well with classmates in the field and in the computer lab.