



A Region in My Own Backyard: A Geographic Field Study

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Grade Level 7
Duration 4 class periods

National Standards

GEOGRAPHY
Element 1: The World in Spatial Terms
 3. How to analyze the spatial organization of people, places, and environments on earth's surface.

Element 2: Places and Regions
 4. The physical and human characteristics of places.

AZ Standards

ELA
Writing
Production and Distribution of Writing
 7.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

MATHEMATICS
Expressions and Equations
 7.EE.B.3 Solve multi-step mathematical problems and problems in real-world context posed with positive and negative rational numbers in any form. Convert between forms as appropriate and assess the reasonableness of answers.

Arizona Social Science Standards

GEOGRAPHY
The use of geographic representations and tools helps individuals understand their world.
 7.G1.1 Use and construct maps and other geographic representations to explain the spatial patterns of cultural and environmental characteristics. Key tools and representations such as maps, globes, aerial and other photos, remotely sensed images, tables, graphs, and geospatial technology

SIOP ELEMENTS		
Preparation Adapting content Linking to background Linking to past learning Strategies used	Scaffolding Modeling Guided practice Independent practice Comprehensible input	Grouping Option Whole class Small groups Partners Independent
Integrating Processes Reading Writing Speaking Listening	Application Hands on Meaningful Linked to objectives Promotes engagement	Assessment Individual Group Written Oral

Arizona ELP Standards
 ELL Stage IV
 Basic
 Writing
 Standard 4: The student will integrate elements of effective writing to develop engaging



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and focused text. The student will integrate elements of effective writing to develop engaging and focused text as demonstrated by:

B-1: writing text that incorporates details.

Overview

Geographers use something called a vegetation plot to examine an area and analyze the ecosystem. The problem encountered in an urban environment is that the dominant features of an inner-city school are cement and asphalt. However, students can still examine how a physical landscape can change in a very small ecosystem by examining a campus vegetation plot over several seasons. This lesson can be repeated several times over the course of a school year to allow the students to see changes in the region.

Purpose

This lesson is designed to help students conduct a geographic field study of their school yard eco-region and interpret geographic information through maps and mathematical estimations. Students will also practice personal narrative writing.

Key Vocabulary

sketch - a simple drawing

bark – the external covering of a tree

deciduous - trees that shed their leaves every year

plot – a measured piece of land

Materials

- Type your Tree worksheet
- Tape measures
- How to Measure the Height of a Tree
<https://www.wikihow.com/Measure-the-Height-of-a-Tree>
- Measuring Tree Height Reading and worksheet
- A map of the school
- String and pegs to section off a plot
- Sighting sticks
- Clinometer - a device for measuring angles (optional)
- Tree Base Worksheet
- Writing Prompt
- Clipboards
- Pencils
- I Am a Tree poem

Objectives

The student will be able to:

- conduct a field study of their campus.
- organize information.
- interpret data and make mathematical calculations.
- creatively write about their experiences.

Procedures

Prerequisite Knowledge: It will be extremely helpful if the students know the 5 Theme of Geography. A lesson that could be used will be found at:

<https://geoalliance.asu.edu/5Themes>

SESSION ONE

1. Have the students discuss the landscape of a familiar place: the student's home, neighborhood, local park, or local shopping mall. Focus on both the physical and human features that define these places. Review the geographic theme of PLACE (the unique characteristics that define a particular location and answers the question: What is it like there?). **Preparation: Linking to past learning, background)**

2. In a similar fashion, discuss the landscape of the school campus. Ask students to think about how the landscape of the campus has changed over time and about the indigenous (natural) landscape that existed in the region BEFORE urban development. Review the geographic theme of REGION (the similar or unifying characteristics of an area that allows geographers to define it as a region). Have students identify their physical region of residence, such as: the Sonoran Desert, Mogollon Rim, Colorado Plateau, White Mountains, Riparian River, etc. **Preparation: Linking to past learning, background)**

3. Explain to students that they will participate in a field study of a small region, called a vegetation plot, on their campus. This will require them to adopt a tree, examine it, and record changes over a period of time. **(Scaffolding: Comprehensible Input)**

4. Distribute the "Type Your Tree" worksheet and discuss Questions 1-9. Focus on related vocabulary & concepts such as: deciduous vs. coniferous, tree bark, leaf sketches, primary sources of water, and natural vs. transplant. **(Scaffolding: Comprehensible Input)**

SESSION TWO

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5. Before leaving the classroom, divide students into groups of two. Explain that student pairs will “adopt” a tree on the campus, give it a name, and examine the tree, using Questions 1-9 on the "Type Your Tree" worksheet. Give each group a measuring tape. NOTE: Question 10 cannot be accomplished until further instruction is given regarding methodology for measuring tree height. **(Grouping: Partners; Application: Hands on, meaningful)**

6. When most groups are ready, return to the classroom and view <https://www.wikihow.com/Measure-the-Height-of-a-Tree> How to Measure the Height of a Tree provides instructions on different methods for estimating tree height. Have students select the method they will use as a class. Or read and discuss the Measuring Tree Height reading and discuss which methods will be used to complete the Measuring Tree Height worksheet. **(Scaffolding: Comprehensible Input)**

SESSION THREE

7. Have the student pairs further examine their tree, using Questions 10-12 on the "Type Your Tree" worksheet. **(Integrated Processes: Reading, writing)**

8. Distribute the "Tree Base" worksheet and Project the Tree Base Example using a doc camera or draw on the whiteboard. Discuss the procedures and observation strategies involved. **(Scaffolding: Comprehensible Input)**

9. Have the student pairs plot a 6-foot square grid around the base of their tree and divide the grid into four quadrants, following the cardinal directions. Students will further examine their schoolyard eco-region and record their observations on the "Tree Base" worksheet. **(Application: Hands on, meaningful)**

SESSION FOUR

10. Explain the narrative writing assignment using the Writing Prompt in which students will write from the perspective of the tree and describe how the landscape has changed over time after each observation period. Every eight weeks have students perform the field study procedures and worksheet observations again.

Assessment

ELA

The narrative can be graded using the 6 Traits Writing Rubric focusing on Word Choice and Organization. A score of 4 or higher on the rubric will be considered mastery.

As an option, ELL students can write an I Am a Tree poem. The poem can be graded for Word Choice on the 6 Traits Writing Rubric. Mastery will be considered a 3 or higher. **(Assessment: Individual, Written)**

Geography and Mathematics

Each of the worksheets can be evaluated on the basis of completeness and accuracy. Points should be assigned for each item. Mastery will be considered 80% or higher.

Extensions

This lesson is perfect for the addition of photography and/or art to enhance the narrative writing.

Sources

<http://www.wikihow.com/Measure-the-Height-of-a-Tree>