

CAPTURING TYBEE: TEACHER GUIDE

Subject: Life Science

Grade Level: Middle School

Last Updated: February 26, 2008

Case Summary

Join up on an expedition to shoot at all sorts of organisms...with a camera. You'll discover more about the ecosystems in your region and help contribute to conservation awareness!

Credits

This case was written by Aimee Webb (PhD student, Nutrition and Health Sciences, Emory University, Atlanta, GA) and Suzy Sumrall (teacher, Renfroe Middle School, Decatur, GA), fellows of the Emory University PRISM program (<http://www.prism.emory.edu>). Authors may be contacted at suzysumrall@yahoo.com

Learning Objectives

At the end of the case, students will be able to:

1. Use process skills of observing, classifying, communicating, predicting, inferring, identifying variables.
2. Collect data scientifically by means of recording and analyzing data, and assess collected data by constructing hypothesis and drawing conclusions
3. Classify living things by similarities in structure, behavior, food needs, chemical makeup into kingdoms, phyla, classes, orders, families, genera, and species.
4. Describe the characteristics of major biomes; specifically describes the location, climate, and organisms of a coastal wetland
5. Describe the ability of organisms to change as necessity for species survival.

Georgia Performance Standards

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science. (NSES Content Standard A, G).

b. Recognize that different explanations often can be given for the same evidence.

c. Explain that further understanding of scientific problems relies on the design and execution of new experiments which may reinforce or weaken opposing explanations

SCSh6. Students will communicate scientific investigations and information clearly. (NSES Content Standard G)

d. Participate in group discussions of scientific investigation and current scientific issues

SCSh8. Students will understand important features of the process of scientific inquiry. (NSES Content Standard A, G)

c. Scientists use practices such as peer review and publication to reinforce the integrity of scientific activity and reporting.

e. The ultimate goal of science is to develop an understanding of the natural universe which is free of biases.

f. Science disciplines and traditions differ from one another in what is studied, techniques used, and outcomes sought.

S7L1. Students will investigate the diversity of living organisms and how they can be compared scientifically. (NSES Content Standard C)

a. Demonstrate the process for the development of a dichotomous key.

b. Classify organisms based on physical characteristics using a dichotomous key of the six kingdom system (archaebacteria, eubacteria, protists, fungi, plants, and animals).

S7L4. Students will examine the dependence of organisms on one another and their environments. (NSES Content Standard C)

Assessment

Student groups created photographic boards or portfolios in which they identified the plants and animals that they photographed with common and scientific names. They also discussed the habitat in which the organism and what special features the organism had that enabled it to survive in its habitat. Products were put on display in the school library. Portfolios / photoboards were required to include a minimum of 10 organisms and their descriptions. Additional pictures and the photo log were turned in as well and served as 10% of the product grade. Student group / peer evaluations (see **Facilitator Guide** below) constituted 5% of their product grade. Products were graded by their fellow students for a maximum of 5 points.

Students were awarded points as follows:

10 organisms (pictures) = 10 points

10 correct common names = 10 points

10 correct scientific names = 10 points

10 habitat descriptions = 10 points

20 adaptation / special features descriptions = 20 points

Presentation of the product (neatness, creativity, etc) = 20 points

Additional pictures and photo log = 10 points

Student group/peer evaluations = each student can receive max of 5 points from their peers

Student assigned grade = 5 points

Implementation Strategy

This case serves as a basic framework for implementing photojournalism in the classroom. Specifically for this case, students attend a coastal biology “camp” in early November at Tybee Island off the coast of Georgia and work in groups of 4-5 students in the various labs offered by the camp. This case is used to increase engagement and assess learning at the camp. Additionally it offers an alternative means of assessing student involvement in the camp. For more information on the camp please visit:

For Georgia teachers:

The following letter would be given to the students prior to their learning about the Tybee trip. It can be written on Ga Dept of Natural Resources or Ga EPA letterhead. We may even get someone from one of the departments to come in and “charge” the students with their journey and duties and clarify the importance of their ‘naturalist mission’.

For non-Tybee Island / Georgia teachers and for upper-grade teachers:

The letter and the case can be adapted to whatever setting you desire. Simply change the wording of the letter and the requirements of the photojournalism project to reflect the student’s destination. Further, the case can be adapted to much higher levels than middle school by increasing the specificity of the photos taken and the identification of the living organisms.

Funding and Logistics: Funding by a National Science Foundation PRISM grant allowed us to purchase 20 disposable cameras (without flash) for use by the student groups and 20 pocket notebooks to record exposure information and observations. Reserve district money was used for film processing. To ensure that cameras did not get mixed up among groups, students labeled their cameras and kept a log of their pictures by exposure (day / time / general subject). The first exposure was a picture of their lab group. Students turned in their pocket notebook documenting their exposure information with their final project.

A mock letter was presented to students prior to trip departure – it can be adapted as necessary (see *Student Materials*).

Facilitator Guide

The following form is to be completed by the facilitator, using the student evaluations and the facilitator’s observations. SS= student self evaluation score (one score), Peer eval score = scores the student received by their peers (list all separately or the average), Facilitator score == the score the facilitator gives each student (scale of 1-5 based on score criteria provided to students)

Facilitator: _____

Class Period

Case Name: _____

Student Names: _____

DATE: _____ DAY _____

Student Name _____

SS Eval Score _____

Peer Eval Score _____

Facilitator Score _____

Comments _____

DATE: _____ DAY _____

Student Name _____

Self Eval Score _____

Peer Eval Score _____

Facilitator Score _____

Learning Issues _____

Comments _____

DATE: _____ DAY _____

Student Name _____

Self Eval Score _____

Peer Eval Score _____

Facilitator Score _____

Learning Issues _____

Comments _____

Please use the rest of this space to comment on the team and the case in general (how the team handled the case material; how the case went; what could have been improved in team performance, etc.):