

John Haydamacker August 31, 2006
Environmental Science Unit Lesson Plans

The week of June 19th, 2006 was a changing time in my life, as a person and as an educator. I no longer look at “nature” the same way, now that I have experienced the glory and grandeur of Isle Royale. I’m terribly embarrassed by my past lack of knowledge of how to treat our nature landscapes. My eyes have been opened to responsible care and upkeep of possibly the greatest gift we’ve been given as a society, our beautiful wilderness. I no longer feel disconnected or unaccountable for my actions in the woods. I understand that one of the responsibilities I have as an educator is to teach my students how to take care of the land we have. To enjoy and use those places responsibly, so others can come to enjoy and respect it for themselves, and continue to pass this attitude and behavior down to the next generation. It was not easy to change my ways, but with the proper guidance and being taught by example, my professor and colleagues have forever modified my outdoor etiquette and behavior. I am forever thankful. Now is my time to do the same for my students, and I will not fail.

- John M. Haydamacker

GRADE LEVEL: 6th Grade

UNIT GOALS:

1. Students will assist in the creation of a nature center for their school.
2. Students will use dichotomous keys to identify native flowers.
3. Students will incorporate native flowers and trees to help complete their nature center.
4. Students will understand the reasons for using native species verse exotic species in their schoolyard and homes.

BENCHMARKS:

1. (III.3.MS.1) LO-m-1 Compare and classify organisms into major groups on the the basis of their structure.
2. (III.2.MS.4) LO-m-4 Explain how selected systems and processes work together in plants and animals.
3. (III.5.MS.1) LEC-m.1 Describe common patterns of relationships among populations .
4. (III.5.MS.4) LEC-m-4 Describe the likely succession of a given ecosystem over time.

LESSON PLAN (Day 1)

Material list:

- a) Dichotomous Key (One book per 3 students)
- b) Transportation to nature center or preserve in your area.
- c) Permission slips for field trip
- d) Digital cameras (as many as possible)
- e) Paper (lined and/or sketching)
- f) Pencils and colored pencils

Teacher Prerequisites:

- If you are not comfortable with your knowledge of the flowers and trees of your area, contact nature center for a personal guide for the activity.
- Mini Lesson on how to use the dichotomous key would be crucial for student learning. Identify trees and flowers in your own schoolyard before the field trip!

Procedure:

- a) One-week prior to field trip, pass out permission slips to students.
- b) Identify and contact parent helpers and any professional assistance you may need in identification of flowers and trees.
- c) If students have not used a dichotomous key before, use a mini-lesson activity with plants in your schoolyard to help them get acquainted with using those guides.
- d) Place students in groups of no more than THREE.
- e) Travel to the outdoor education location you chose.
- f) Choose one or two flowers for everyone to identify using their dichotomous books as practice in the field.
- g) Bring entire group back together to discuss what they observed and did to identify them correctly.
- h) Send groups to find own trees and flowers to identify. Groups may draw pictures of each flower they identify or take digital photographs for use after the field trip. THE MORE PLANTS/FLOWERS IDENTIFIED, THE BETTER!
- i) Student must be told NOT to pick or collect any flowers or leaves for identification purposes or for later class projects. This is what the student's drawings or digital camera pictures are for.
- j) If time allows, students may fine-tune their drawings, or review and recapture photos of their flowers and tree leaves.
- k) Return students to school safely!

Assessment Device:

- 1) Journal Assignment- (Place in "Science Journal")
 - a) Write down and describe in as much detail as you can the flowers/trees you found and identified.
 - b) Describe why you chose the ones you did.

- c) What part of the field trip was the most challenging and why?
 - d) All must be written in complete sentences (except flower and tree details may be listed).
- * Teacher may choose to give a letter grade, I would suggest giving a complete/incomplete grade for adequate completion.

Extension Activity:

- 1) Sign out a dichotomous key book and use it to try and identify the flowers and trees in your own yard. Draw a picture of your yard and label where you found each tree/flower you identified.

LESSON PLAN (Day 2)

Materials list:

- a) One to Three days to complete
- b) Computer lab
- c) One student per computer (pairs if space is limited)
- d) Student's own list of trees/flowers from field trip
- e) Worksheet or computer form assignment

Teacher prerequisites:

- 1. Teacher may want to find websites that relate to the lesson prior to bring class to the computer lab.
- 2. Teacher may want to become acquainted with the flowers and trees that students will find on the trip.

Procedure:

- a. Give student assignment for computer lab activity. They must find information about the trees and flowers that they identified. All tree/flower information gathered from the fieldtrip must accompany them to the lab.
- b. Teacher gives students a handout to write down the following information:
 - 1. Name of the flower or tree
 - 2. Binomial nomenclature for that organism
 - 3. Status of organism (native or exotic)
 - 4. Any positive or negative information found to determine if it would work well in our school nature center.
 - 5. Web address for any information used is mandatory!
- c. Give students additional sheets if necessary. Group members may choose to divide up the organisms between themselves and share the information in the end so all members have complete information about all organisms.
- d. Collect when finished.

Assessment device(s):

1. Use worksheets as a tool to determine effort. Grade for 100% completion not 100% correct information.
2. Group discussion about what was found during the field trip. Determine whether other groups discovered the same flower and found different information. This is a validation activity.

LESSON PLAN (Day 3)

Materials List:

1. Student computer lab worksheets
2. Grid paper with school nature center area drawn
3. Same groups of 3 students
4. Pencils
5. Colored pencils
6. Rulers
7. Compasses for drawing circles
8. Any pictures take should be printed very small for use on grid paper.

Teacher Prerequisites:

- a) Teacher may wish to have a real example of an outdoor area plan for plant and tree placement by a professional landscape designer.
- b) If a professional landscape designer could visit and make a presentation, that would be a real positive experience. They could share insight as to why they would put various plants in different areas.
- c) Make sure you have an accurate and permitted area of your schoolyard which you can create a drawing on your grid paper for students to place their plants.

Procedure:

- a) Hand back all collected worksheets with plant/flower information to each student.
- b) Pass out grid paper with schoolyard nature center area already drawn.
- c) Give printouts of all pictures taken during field trip. Be sure that the pictures were printed as small as possible so they can be easily placed on the grid paper when a plan is made.
- d) If you lined up a professional landscape designer, have them present a version of a plan that students could use as a template for a design of their own. Be sure the designer discusses with you the level at which you want the information delivered to your class.
- e) If no professional was available, have a design made up of a fictitious area with examples of what you expect to see on their group version. Make sure to put in what you expect so the students have clear expectations from you.

- f) Groups now work on a design they think would work well in the area shown on the grid. They may also include boulders, walkways, water features, etc into their design. Be creative!

Assessment device(s)

1. Student/groups need to be able to discuss intelligently and knowledgeably why they chose to put certain plants in certain places. This discussion is the most important part of the entire activity, make sure students know this!
2. When all plans are turned in for credit, students will be asked to judge what they think are the top three plans, along with a detailed reason for their choices. Simplistic answers with limited thought will not warrant a high grade.

Extension Activities:

1. Students will be given the opportunity to help in the creation and planting of the different plants and flowers when the actual project begins. This will require work after school, with extra parental assistance.

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