



Sense of Place: Interdisciplinary Wilderness Unit

Grade Level

Middle School English, Heritage, & Earth Science Classes

Class Periods

9 weeks

Goals/Objectives/Student Outcomes:

Through an interdisciplinary focus eighth grade teachers will work together to coordinate activities and give students an appreciation for their environment. By planning lessons based on the history, wilderness, and conservation of the Cresco area, students will be encouraged to see the interaction not only between the different subjects they study, but between the past, present and future of their town. Students will be given the opportunity to explore these ideas through their research, studies, teamwork, and hands-on learning. Another goal of the project is to involve community members in the educational process by encouraging them to share their expertise with the students.

The project will culminate with a field trip to wilderness areas, an old cemetery, and other local sites.

Specific subject area objectives:

1. ENGLISH

Students will:

- Value the study of their community and recognize their possible place in the community's future.
- Appreciate the presence of wilderness/nature in their community and acquire the skills to conserve nature for the future of their "place."
- See the connection between the various disciplines in school, and between learning inside and outside of the school.
- Develop the communication skills of listening, observing, reading, speaking, visualizing, and writing.
- Practice higher order thinking processes.
- Refine individual and cooperative learning strategies.

2. HERITAGE

Students will:

- Learn about prehistoric Native American life and sites in Iowa.
- Understand how Native Americans used their environment for food, clothing, and shelter.

- Recognize that a major problem in relationships between Native Americans and white settlers was the question of who should control land.
- Realize that people from many countries emigrated to Iowa to improve their lives.
- Recognize that the immigrants blended into the general population even though they settled in certain parts of the state.
- Realize that museums and towns currently help preserve certain aspects of
- European heritage by holding festivals and celebrations.
- Know the location of public lands and the work of the Department of Natural Resources (DNR) in Iowa.
- Develop an understanding of the history and purposes of local government.

3. EARTH SCIENCE

Students will:

- Study the soil, water, and vegetation of their local area.

Materials:

1. Articles focusing on ecological concerns
2. Stories emphasizing Native American relationship with nature
3. Environmental literature and stories
4. Soil surveys
5. Videos of national parks, areas of Iowa, wilderness areas
6. Materials to build terrarium
7. Plant cuttings
8. Pop bottles
9. Soil
10. Container (jar or coffee can)

Background:

Cresco, a city of 3,697, is located at the eastern edge of Howard County, a mainly agricultural area with a population of 9,967. This year's eighth grade class includes 165 students. The students are typical of Iowa's rural population, with few minority students. The district does have a diversity of ethnic groups, including many people of German, Norwegian, Irish, Czech, and Welsh heritage.

The English program emphasizes a whole language/writing, process/interactive approach to learning.

The heritage program was recently expanded from one semester to two, and now emphasizes state and local history and an active approach to learning.

The earth science curriculum is also student-centered with a great deal of student involvement. The staff in these three programs were the most instrumental in developing the "Wilderness" interdisciplinary unit, though most of the staff, the principal, and the support staff were active and helpful participants.

The three teachers involved in developing this project met at the beginning of the school year to discuss the possibility of interdisciplinary collaboration. The science teacher was very positive and the heritage teacher had been part of the National Geographic summer program. The program focused on interdisciplinary study and local history as well as on the five themes of geography, one of which is "place."

The teachers decided to center their interdisciplinary unit around a field trip that would include a trip to Hayden Prairie, Lidtke Mill, and Pleasant Hill Cemetery.

The eighth grade teachers were invited to a meeting to discuss the trip. Most of the teachers attended and shared ideas for involving their classes. The algebra teacher suggested giving his class of advanced math students an authentic problem-solving assignment—planning the itinerary for the field trip. In preparation for the field trip, the teachers planning the project took a tour of sites in December. They were joined by the P.E./health teacher, who lives near Hayden Prairie, and a volunteer from the community with expertise in science and conservation.

The teachers visited sites that relate to the environment, including quarries, rock piles, groves, hi-lines, deserted farms, and old school houses. They noted the mileage between sites and transportation time. They also toured the cemetery where they noted names, dates, designs, and other features. The heritage teacher is planning a cemetery scavenger hunt that will encourage students to speculate about historical data such as causes of death.

Planning for the "wilderness trip" continued throughout the school year. Speakers from the community were asked to come and talk to the students. Projects in all subject areas were ongoing and the teachers continued to coordinate their activities.

Procedure:

During the course of the year the field trip is planned by the earth science, heritage, and English teachers. All of the lessons shared below are designed to enrich that trip and prepare students to gain the maximum benefit from the project.

1.English

Students discuss the concept of "wilderness" and why it is so important.

Students build a bulletin board display of recent articles dealing with ecological concerns, brainstorm a list of topics, and choose one topic to research and to use as an essay topic.

Class views parts of videos showing scenes showing the beauty of national parks and Iowa. The students discuss the wilderness resources in our area.

Students listen to speakers who come to share the history of the wilderness and natural resources in our area and to discuss ways to conserve and preserve them. A short summary/ reflection of the speakers' messages is assigned. Videos of the speakers are available for students to view.

Students read and research conservation topics.

Speakers share information with the students as the topic of nature is expanded to include the Native American attitude toward nature and the place of story-telling in their culture.

Students are divided into groups of 3 and given stories emphasizing the Native American relationship with nature (e.g., the Lakota story "The White Buffalo Woman and the Sacred Pipe," the Cherokee story "The Coming of Corn," and the Mandan story "The First Basket") to read and prepare for oral telling as a group.

Aldo Leopold, the father of conservation, is introduced as the theme is further expanded. His book, *A Sand County Almanac* and his habit of sketch journaling is shared and discussed with students.

Students watch a video about Leopold and his ideas.

The class then focuses on the essay, "The Good Oak." Students work in groups to count rings and use stick pins to help locate six "important" dates. They then report to the rest of the class on their choices as well as the age of the tree. (This can be either a diagram of a cross-section of oak or, if possible, an actual cross-section.)

The art teacher comes to the English class to work with the students on a lesson in sketch-drawing. Natural objects that might be encountered in the field trip—grasses, twigs, cones, and leaves—are used.

2.Heritage

After the study of Native Americans in the state, students turn to another component of Iowa History—immigration to Iowa and the state's different ethnic groups. Students focus on their own families and their background.

Students research their family histories through interviews with family members and the development of a family tree. If possible students visit the town, city, or farm where their parents or grandparents grew up.

Students develop a stronger awareness of what is available in the state by acting as tour guides. They are asked to plan a two-week trip through Iowa for visitors from a foreign country. The objective is to learn as much about Iowa as possible in a short period of time. During the trip students must:

- Visit the birthplace or home of five historical persons, five state parks, five major industrial/manufacturing sites, and five celebrations or festivals.
- Prepare a day-to-day itinerary showing major roads traveled, number of miles traveled, and which major geographic section of the state is to be visited (e.g., northeast, southwest).

- List at least 12 counties that they traveled through by putting down the name of the county seat, major towns or cities in the county, and where the name of the county originated.

In preparation for the field trip and to learn more about their area and its history, students study the local cemeteries. A community member talks with students about his hobby of studying the cemeteries in the area.

Students learn about the local government through visits by community members.

The superintendent of schools talks with students about the evolution of school consolidation and presents his or her views of government in the school district.

The county treasurer talks about the history of the local court house and aspects of local government.

3. Earth Science

Students keep an environmental journal during several units involving the study of water, soil, and plant life. A rubric for evaluation includes a list of points given for each activity.

The water study portion of their work includes:

- Calculating the amount of water needed to prepare a holiday meal and also to prepare and consume the food for one day in their town.
- Analyzing a sample of their home tap water for pH, chlorine, iron, copper, and hardness.
- Discussing household hazardous products such as drain cleaner and varnish, and the problems of flushing such materials down the drain.
- Studying the wetlands to determine what has happened historically in Iowa and to better understand the value of the wetlands to the environment.
- Looking at a major study of water pollution—particularly nitrates—done at Big Springs Basin, an area near Elkader.

Many of the students live on farms and surveyed the soil where they live, using the Soil Survey of Howard County, Iowa, USDA, December 1974, and the Soil Survey of Winneshiek County, Iowa, USDA. A discussion of soil erosion with an emphasis on its effects on Iowa agriculture and recreation followed.

The study of plant life includes several components:

- Study of prairie plants using the new prairie planted on the school grounds and *Wildflowers of the Tall Grass Prairie* by Runkel and Roosa, Ames: Iowa State University Press, 1989.
- Building a terrarium for study of the water cycle. The plant cuttings are from the high school horticulture class. Students use a pop bottle as a container for rooting their plants in preparation for putting them in the terrarium.
- Study of the life of Ada Hayden, for whom the Hayden Prairie is named. The prairie is located approximately 15 miles from the school and is one of the sites on the field trip.

The last component of the project is a visit from an archaeologist employed at a local company, Bear Creek Archaeology. He talks with students about his work and shares his experiences and artifacts from digs.

Assessment of Outcomes:

For real interdisciplinary collaboration teachers need some common planning time and smaller classes. At this school in Cresco that may be possible next year.

The students were very interested in the guest speakers, who had first-hand knowledge and artifacts.

Resources:

Michael J. Caduto and Joseph Bruchac. *Keepers of the Earth: Native American Stories and Environmental Activities for Children*. Golden, Colorado: Fulcrum, 1989.

Michael J. Caduto and Joseph Bruchac. *Keepers of the Animals: Native American Stories and Wildlife Activities for Children*. Golden, Colorado: Fulcrum, 1991.

Aldo Leopold. *Sand County Almanac*. Oxford University Press, 1949. *A Prophet for All Seasons*. Video.

People, Animals and the Environment. American Animal Welfare Foundation, 1993.

Linda Perkins. "Classroom Corner." *The Iowa Conservationist* (Jan/Feb 1995).

Don Sievers. "Classroom Corner." *The Iowa Conservationist* (May/June 1995).

Soil Survey of Howard County, Iowa. USDA. 1974. Soil Survey of Winneshiek County, Iowa. USDA.

Sylvan T. Runkel and Dean M. Roosa. *Wildflowers of the Tall Grass Prairie*. Ames: Iowa State University Press, 1989.

Speakers:

Al Baxter, Howard and Chickasaw County Conservation Officer.

George Champlin, retired businessman who has spearheaded restoration projects like the opera house and the mill pond, and who is a proponent of community pride.

Harold Chapman, Howard County Conservation Director.

Don Conway, local funeral director and school board member who has done extensive study of local cemeteries.

Chris Fran, Howard County SCS technician and sportsman-conservationist.

Scott Shaffer, archaeologist employed at Bear Creek Archaeology, a local company that does archaeological digs.

Harold Munkel, Lime Springs retired farmer and sportsman.

Dale Reis, Lime Springs barber and conservationist-sportsman.

Teachers/helpers on the field trip:

Glenn Crossman, local resident knowledgeable about prairie and donor of Crossman Prairie to the state.

Ana Mae Davis, director at Lidtke Mill.

Pam Heidenreich, Howard County Naturalist.

Connie Hvitved, community volunteer with background in science, ecology and rural life development.

Roy Jones, sexton and member of Pleasant Hill Cemetery Board, to aid with learning projects at the cemetery.

Tour guide at Lidtke Mill.

Mary Stark, local resident knowledgeable about prairie.

Dale Vagts, local insurance agent and former science teacher.

Bob Vobora, regional soil scientist.