



District: *Grand Rapids Public Schools*

Building: *City High/Middle*

Teacher(s): *Kurt Mirandette, Rhanda Jacquays, Erin Emporer*

Main Contact: *Kurt Mirandette*

Email: *mirandettek@grps.k12.mi.us*

Grade Level: *7th*

Subject(s): *Science/English*

First Trimester:

Second Trimester:

Third Trimester:

First Semester:

Second Semester:

All Year: *x*

Name of Project: *It Starts With Me*

Project Overview

Give a brief overview of the project you are planning.

Back in 2006, through the generosity of the Wege Foundation, City High/Middle School became the Center for Economicology. Through knowledge and discovery, the quest began to develop a reciprocal stewardship philosophy which would be carried beyond the four walls of the classroom.

In attempt to create ownership in this stewardship, City High/Middle School Center for Economicology adopted Huff Park, a one hundred thirty acre park containing wetlands, with a seasonal tributary feeding the wetland. On an AP Biology field trip to the park, the students wanted to test the water of the tributary, above the wetlands and below the wetlands. Before the field trip, the value of wetlands to a watershed was discussed. One of the greatest values to a watershed by the wetlands is it's filtration of sediments, toxic substances and chemicals. It was hypothesized by the students that waters leaving the wetlands would have fewer pollutants then the waters entering the wetlands. On the contrary, the waters leaving the wetlands were higher in phosphates and nitrates. The students questioned, "how could this be"? The wetlands had become a "dirty sponge." Although the exact source of this nutrient overload, it was hypothesized that over many years of repeated use of fertilizers, detergents, and other products containing these chemicals by property owners along the tributary, caused the wetlands to lose its viability.

This project will define the topography of the Huff Park tributary and the area feeding into the wetlands. This will be done to better understand where runoff from the neighborhood is an issue and is contributing to poor water quality in the form of nutrient overloads in the creek and wetlands. Based on this mapping and water quality data taken from various sites in the area, students will develop an educational campaign targeted at property owners in the area about local water quality concerns and what can be done about them. This educational effort will be a part of the attempt to protect the natural water filtration system of the wetlands.

Effective Practice: MEANINGFUL SERVICE

Service learning actively engages participants in meaningful and personally relevant service activities.

What community need will you address and how did you determine the need?

This need was determined from prior water quality testing and background knowledge. When tested, there were higher concentrations of nitrates and phosphates coming out of the wetlands than there were going into the wetlands.

What service will you provide to address the need?

This project is based on the six E's of Economicology: Education, Ecology, Economics, Empathy, Ethics and Environment. Students will study the nutrient overload in the Huff Park wetlands from different perspectives keeping all of these themes in mind. The mapping of the area's runoff, building of the model and water quality testing at different sites will form a base of data to assess the issue of high nutrient levels in the park's waters. Based on this assessment and interpretation of the data, students will start an educational campaign geared toward local land owners to address the need for more understanding of water quality issues and individual actions to successfully resolve these issues. Depending on the data gathered and student's thoughts on how to best address these issues, additional projects may be developed.

Effective Practice: LINK TO CURRICULUM

Service learning is intentionally used as an instructional strategy to meet learning goals and/or content standards.

How is this project related to your curriculum?

It teaches students what a watershed is, teaches students about the water cycle, and is used to teach scientific inquiry.

What are the educational goals?

For students to understand the water cycle and the impact of human activities on that cycle.

Curriculum Crafter Connections www.curriculumcrafter.com

Strand: 07SCI: (Earth Science)

TLW: Explain the water cycle and analyze the flow of water in the environment

Additional State Standards and Benchmarks

List standards and benchmarks met by this project.

Strand: 07SCI: (Earth Science)

TLW: Explain how human activities have consequences on the environment. (Gist: Human Impact on the Environment)

Strand: 07SCI: (Scientific Processes)

TLW: Demonstrate an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems by identifying evidence of chemical change.

Effective Practice: REFLECTION

Service learning incorporates multiple challenging reflection activities that are ongoing and that prompt deep thinking and analysis about oneself and one's relationship to society.

What form(s) of reflection will you use with the students to help them identify what they have learned and accomplished?

Classroom discussions, videotaped observations, public presentations

Effective Practice: DIVERSITY

Service learning promotes understanding of diversity and mutual respect among all participants.

What types of diverse perspectives and experiences will be explored as part of your project?

(i.e.: cultural, generational, abilities/disabilities, learning styles, etc)

Students will have to interact with and interview community members, exposing them to a variety of opinions and perspectives. Students will have to learn to deal with their peers and advisors, including how to disagree professionally and coming to a consensus.

Effective Practice: YOUTH VOICE

Service learning provides youth with a strong voice in planning, implementing, and evaluating service learning experiences with guidance from adults.

How will students gain ownership of the project?

Students will develop strategies to communicate and educate the property owners bordering the tributary about their findings and suggestions of how to become a better steward. Students will guide the decisions about what else to do about the high nutrient issues in the area.

Effective Practice: RECIPROCAL PARTNERSHIPS

Service learning partnerships are collaborative, mutually beneficial, and address community needs.

Who will you partner with for this project?

Bill Byl, Kent County Drain Commissioner: providing topographic maps, elevations, latitudes and longitudes. He is providing much of the information needed to build the model.

WMEAC: providing water quality information and presentations.

Wege Foundation: potentially additional funding opportunities.

Grand Rapids Parks and Rec Department: providing additional information needed about Huff Park.

Cranbrook Institute of Science: providing watershed classroom presentations.

Possible additional partnerships:

- *Fishbeck Thompson, Carr & Huber, Inc. (FTC&H): for expertise on model construction*
- *Dykema excavating: if there is a need for landscaping in the area.*

How will students benefit from this partnership?

Students will be learning about water quality, topographical maps and map reading, information about watersheds, and information about the park from experts in the community.

How will the partner benefit from this collaboration?

The partners will benefit by having 175 new stewards who are committed to taking care of and improving the quality of the watershed in the park.

Effective Practice: PROGRESS MONITORING

Service learning engages participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals, and uses results for improvement and sustainability.

How will you assess the student learning goals?

Student work in building the model and the making of educational materials will be graded.

How will you assess your service goals?

Long term success will be dependent on the education of the neighborhood, changes in nitrates and phosphates in the stream and changes in habits and attitudes of property owners.

Long term results will be measured by subsequent testing of the water and surveys of the neighborhood measuring knowledge gained and attitudes/habits changed based on the educational information provided. Short term results will be based on the number of contacts made with community members in the neighborhood and through open houses.

Effective Practice: DURATION AND INTENSITY

Service learning has sufficient duration and intensity to address community needs and meet specified outcomes.

How will you prepare students for this experience?

- *This school year project expanded upon the lessons learned from the previous year.*
- *Students watched the documentary “Flow”.*
- *Students read the book A Long Walk to Water.*
- *They completed their own long walk, carrying one-gallon water jugs two miles to the local park and back in order to water their school’s garden.*
- *Student groups created a range of projects for which they were evaluated for the class, including planning a school-wide movement to ban plastic water bottles, creating a to-scale replica of the local watershed, and raising funds to purchase water purifiers.*

What are some sample possible activities students might do as part of this project?

- *Mapping and identification of boundary lines of this mini-watershed.*
- *The building of a scaled topographic model of the tributary and wetlands of Huff Park through self-discovery, Google Earth, and partnerships.*
- *Identification of property ownership along the stream.*
- *Water quality testing at several different sites feeding into the wetland in the hopes of identifying nutrient “hot spots”.*
- *Identification and mapping of current buffer areas and other best management practices for water quality in the area.*
- *Cross curricular experience between the Science and English Classes*
- *Development of strategies to communicate and educate the property owners bordering the tributary about the students’ work, water quality concerns and actions individuals can take, i.e. press release, pamphlets created and distributed by the students, an open house to explain student findings and suggestions to become better stewards.*
- *Our eventual ongoing goal is to be a source of information for water quality in Huff Park and to make a positive impact on the health of the wetland and stream.*

For more information about Groundswell go to www.groundswellmi.org

For more information about the Great Lakes Stewardship Initiative go to www.glstewardship.org