

GARDENING IN YOUR COMMUNITY: A FIVE-DAY STEM CAMP ON COMMUNITY
GARDENS

by

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Project Description

Introduction

This capstone project seeks to answer the question, *how can community gardens address issues surrounding food insecurity and prompt environmentalism in urban areas?* This project intended to be a “day-camp” style in which participants would spend time at a community garden, learning how to garden, build community with other participants, and participate in one Science, Technology, Engineering, and Math (STEM) lesson per day. Below is a brief description of this project, materials needed to complete the unit of study, lesson plans, relevant handouts, and a survey to be given before and after completion of the unit.

Setting and Participants

The inspiration for this project was an already established community garden in Minneapolis, Minnesota. Minneapolis is a city with almost half a million people living within its boundaries (U.S. Census Bureau). I felt the city a great location for this project as I am already invested in the community as a middle school science teacher for Minneapolis Public Schools. While this unit of study is catered towards participants in Minneapolis, the lessons were created so that an educator can modify them to other communities as well.

It is important that the week takes place towards the end of the summer when plants are most ready for harvest in Minnesota. This way, participants can interact with, water, harvest, and eat the fruits and vegetables in the garden. It is also crucial that students learn about ways of managing a garden during the week. Some lessons rely upon the instructor showing students different means of conservation used in the garden. Additionally, students should either be

provided with a composition notebook or place in which to take notes and answer questions individually.

As for participants themselves, I have designed this curriculum with the intent of meeting specific 7th and 8th grade Minnesota science standards. I believe the activities and lessons provided are developmentally and academically appropriate for this age group. The standards are those that a student may have experienced previous to enrolling in this unit, and the lessons were designed so that an instructor could modify for extended learning, while at the same time meeting the needs of lower level learners.

Process

While designing this curriculum I used the Understanding by Design (Wiggins & McTighe, 2008) framework. This process has three steps in which instructors should consider when building a lesson or unit. First, an instructor must identify the desired results, asking themselves questions like “What do I want my students to know?” or “What big ideas are important?”. Next, it is important to determine acceptable evidence. In other words, what do the students show to demonstrate they have learned the intended outcomes. These should be authentic assessments that align closely with the learning goals from step one. Assessments that do not match the learning goals can lead to a frustrating experience for teachers and students. Step three of Understanding by Design is for an instructor to plan learning experiences the students will participate in. This final stage is when instructors start to identify by which means students will receive the required information. Doing this well makes the two previous steps easier for students to access information and demonstrate understanding of a given subject.

This curriculum design process allows for teachers to critically think about what students need to know. In environmental education, there are countless topics that interact with each other that it can sometimes be overwhelming to think about. Additionally, in terms of this unit, I felt it would be a disservice to students to present them with a set of facts to memorize. Students must participate in activities that cause them to critically think about how they interact with the environment.

For this project, I knew I wanted students to learn about ways community gardens relate to environmental issues. After I decided what those issues would be (waste, water runoff, and carbon emissions resulting from shipping food around the country and world), I moved to step two of UbD: determining acceptable evidence. I knew this unit would incorporate STEM, so it was important to me that students were able to demonstrate their understanding using some sort of project. After a lot of consideration, I landed on having students create their own garden. I felt this would demonstrate learning because in doing so, students would use what they have learned throughout the week and show what they deemed important. After completing step two of UbD, I needed to then determine what learning experiences would be valuable enough to support student learning. During this step, I had many different ideas and, while it was difficult sometimes, I had to continuously remind myself of what I decided was most important for students to learn. Understanding by Design can sometimes be a frustrating task, but it is one that I found incredibly valuable while working on this unit of study.

Summary

This project, to take place in a community garden, is a week-long unit of study that can enhance the learning of 7th and 8th grade Minnesota science standards. Using the Understanding

by Design framework, this project is one that has been meticulously planned in order to scaffold learning for a culminating STEM project.

Gardening in Your Community
A Five-Day Camp on Community Gardens
Teacher's Guide

Dear Educator,

This guide is intended to act as a framework for the STEM learning of students participating in “Gardening in Your Community”. The following materials are for you to use to guide students into learning about some of the ways humans impact the environment and how community gardens can mitigate them. Below you will find a pre- and post-survey, a suggested schedule of each day, an outline of each lesson, and their corresponding student sheets. Culminating with designing their own garden, students will participate in engaging activities, STEM lessons, and learning how to tend a garden. This was built with Minneapolis, Minnesota in mind. However, you may choose to adapt it to make it more relevant to your students. Gardening is a great way for students to learn more about the Earth, eat healthy, and have fun. Enjoy!

Tucker Jensen

[Pre-Participation Survey](#)

[Daily Schedule](#)

[Activity Instructions](#)

[Lesson One - Composting](#)
[Student Instructions](#)

[Lesson Two - Food Miles](#)
[Recipe Cards](#)
[Student Sheets](#)

[Lesson Three - Water Runoff](#)
[Student Instructions](#)

[Lesson Four \(Two Days\) - Design A Garden](#)
[Garden Project Cost Sheet](#)
[Garden Budget Tracker](#)

[Post-Participation Survey](#)

References

Wiggins, G. P., & McTighe, J. (2008). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.