



2018-19 Duke Energy Foundation STEM Grant

DEADLINE October 18, 2018 4:00 pm Foundation Office via Jackrabbit or Email

- This Classroom Grant is for 2018-2019 school year.
- Funds must be used to address a STEM related project.
- All funds must be used by May 1, 2019. A final program evaluation must be submitted by May 15, 2019.

Contact Information	
Applicant Name: Elizabeth Mills	Position: Second Grade Teacher
School: The Villages Elementary of Lady Lake	
Address: 695 Rolling Acres Road, Lady Lake, FL 32159	
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Detailed Project Information
Project Title: Growing Attendance
What priority area(s) will your project address: Attendance, Math, Science
What is your estimated start date: as soon as funds are available
Estimated number of teachers who will participate in this project: 2
Estimated Number of Total Students Impacted by project: 40
Grade Levels to be Addressed: Second

Program Background:

This summer I attended a county workshop involving tower gardens, "Growing the Future in Your Classroom". I was drawn to this workshop because of its claim to improve student attendance. This has been a high priority at my school for many years and is currently a major initiative for our district with their "Arrive! Strive! Thrive!" campaign. Steve Ritz, author of the book The Power of a Plant: A Teacher's Odyssey to Grow Healthy Minds and Schools (2017), is a teacher at one of the most troubled schools in the South Bronx. He discovered, quite by accident, a correlation between tower gardens and attendance at his school. While reading about the application of his discovery, I realized that there were parallels between his school and mine. For example, 99% of the students at Mr. Ritz's school qualify for free/reduced lunch. At my school, 82% of our population qualifies for free/reduced lunch. The attendance rate at his school, before implementing the tower garden program, was at 40%. At my school, the daily attendance rate averages 94%. However, the percentage of our students that are chronically truant is at 18%, which is considerable. Since the implementation of his program, the percentage of free/reduced lunch students at Mr. Ritz's school has remained the same, but their attendance rate has risen from 40% in attendance to 93%. This is an incredible increase! Since the start of school in August, my class has not completed one week of school with 100% attendance. This is detrimental to their stability as a student and overall success in school. It is my hope that by implementing Steve Ritz's concepts, along with the amazing Tower Garden STEM lessons I have found from Seton Hall University, my class attendance will improve and my STEM instruction will become a more hands on and meaningful experience for my students. Science concepts regarding plant growth, use of the scientific method to predict and test successful plant growth, along with various other Science concepts will be of focus during these lessons. Engineering concepts will be involved in the construction of the tower garden, but more importantly students will have to brainstorm and create ways to stabilize and brace the plants that will be growing from the tower garden. Structures like this are not included

with the kit. Math and Technology will be used when creating charts on the computer that can be used for tracking and organizing data related to growth, pH checks, and plant yield. The technology involved in creating a tower garden will also be a focus. Students will brainstorm the pros and cons of creating and using such a structure. Students will also use the computer to research plant varieties that may be interested in growing in the tower garden. The teacher who will be sharing this project with me hopes for the same results for her class as well.

Project Summary:

A tower garden will be constructed and students will be involved in hands on STEM lessons that involve measuring pH, growth rate of plants, measuring doses of the "vitamin" water needed to grow the plants, charting data, building structures, etc. They will also learn about the plant cycle and be exposed to a multitude of plant varieties and research those varieties. Attendance in school is key to a student's participation in the lessons. They must be in school to participate and according to Steve Ritz, kids love to participate in this type of project. They are completely involved in the planting, nourishing, and growing of fruits, vegetables, lettuces, etc. They are thrilled to grow plants that they can actually eat. Mr. Ritz suggests salad parties as a way to celebrate their successful growing efforts. This type of in-depth instruction will be a breath of fresh air in relation to our current stale curriculum. Creative and inspiring Science and Math lessons regarding agriculture have always been geared toward secondary students. The availability of lessons specifically tailored for lower primary students, and ones that are STEM related, was especially appealing to me.

Need:

One Tower Garden Indoor Growing Bundle is needed. Electricity to run the Tower Garden is also needed. My principle has agreed to shoulder the extra cost of electricity needed to power the Tower Garden.

Project Goals and Objectives:

My goals and objectives include a significant increase in the attendance rate in my classroom. Also, my goals include accomplishing the Next Generation Science standards for my students with innovative lessons that coincide with the specifications of the STEM program.

Evaluation Plan: *Describe how you will measure outcomes and evaluate your project.*

I will measure the outcomes by tracking the attendance for my classroom. I will also measure outcome by analyzing the end of the year performance on the iReady Math assessment. My students are not tested on Science concepts, so qualitative data will be used to assess an advancement in science skills by way of teacher observations and the successful completion of assigned Science tasks. Use of Technology and Engineering skills will also be evaluated using qualitative data, in the form of teacher observations and successful completion of tasks, will be used for these areas as well.

Budget

Category of Expenditure	Dollar Amount	Related Activity
Computer Hardware		
Computer Software		
Other Equipment (not computers)	1,068.65	Tower Garden Indoor Growing Bundle
Competition Registration Fees		
Program supplies	0	STEM lessons and activities directly related to growing with a Tower Garden.

TOTALS	1068.65		
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Program Approved By: _____

Principal

Funds Payable to: The Villages Elem of Lady Lake
 Address: 695 Rolling Acres Rd
Lady Lake, FL 32159
 Phone: 352-751-0111 Email: MillsE@Lake.K12.FL.US

Requesting party has read and agrees with the funding policies of the Educational Foundation.

Signed Elizabeth Mills Date 10-17-18
To be completed by foundation staff/board

Program meets Duke Energy Foundation's Mission/ Funding Policy Y N

Director Recommendation: _____

Executive Board Recommendation: _____