

STEM Fellows Project: A Day of Professional Development

Jessica Anderson and Meisha Jenkins

What is STEM

<https://www.livescience.com/43296-what-is-stem-education.html>

<https://www.youtube.com/watch?v=IAq87rx9cXE>

[Engineering in the NGSS classroom](#)

Garden Club Goals



Purpose: The purpose of the Garden Club at CES is to stimulate the knowledge and love of gardening.

Our mission is to restore, improve, and protect the quality of the environment through educational programs and STEM based activities.

Garden Club Activities

Planting our citrus trees

Ms. Stephanie from Southern University AMC helped us plant our six citrus trees that were donated to us by Cleggs' Nursery



Constructing our Vegetable Garden

Garden Club partnered with the Engineering Club to build gardening boxes to plant our herbs and vegetables. Students first worked together to draw what we wanted the garden to look like. Then we selected an area. Once the students selected an area and finished their drawing, we started building. It was awesome watching the two clubs work together to make our campus



Planting Under Way

After building the boxes the students went back to the planning processes. Students did research and found which plants and herbs would grow best in our garden. Once The students finished their research we Started planting.



Garden Vegetables and Herb

Tomatoes

Bell peppers

Cucumbers

Rosemary

Mint

Butterfly Garden

Students researched what plants attract butterflies. We came up with a plan and our butterfly garden is underway.



Making a Compost Bucket

The students took a day to research what was need to make a compost bin.

The students made a list of the items needed. Then the students picked a spot for the base of our bucket. The students are now in the process of adding the items needed to make a compost bucket.

Engineering Club



Purpose: The goal of the Young Engineers Club is to develop problem solving skills through challenging hands-on activities in a creative, cooperative environment that incorporates Science, Technology, Engineering, and Math (STEM) in order to prepare students for a 21st century workforce.

First meeting: Tallest Tower Challenge



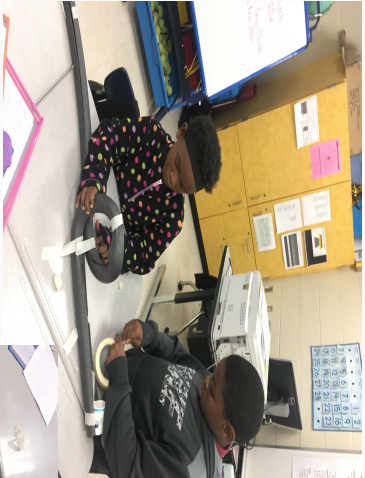
At the beginning of the year, I sent out flyers to gain interest to students wanting to join the Young Engineers Club. Many students signed up and they were all excited. At our first meeting, students had to complete the Tallest Tower Challenge using cups. It was quite difficult but the students persevered.

Engineering Kits: Bridges



I purchased K'Nex Engineering kits for the students. Each student researched different types of bridges such as Truss, Suspension, Cable, etc. Each K'Nex kit allowed the students to make one bridge. They selected the bridges they wanted to make and went to work! I noticed frustration with several students because "it's just not working." Then teamwork stepped in and the other students chimed in to help problem solve.

STEM Roller Coaster Project



This was a request by one of the club members and I was excited that they inquired about this project! We researched vocabulary words such as momentum, force, acceleration, potential, and kinetic energy. The club members were very eager to get started! They met a lot of challenges along the way. Many students became frustrated when they needed to create a loop. Another problem area was the marble not completing the course. They collaborated and planned with each other until the marble completed the course. They all cheered as if they had won a marathon!

STEM DAY 2019

Purpose

Students in each grade level will be exposed to the different areas of STEM. STEM Challenges will be assigned by grade level. Each STEM activity will be grade level appropriate. Parents will also be invited to participate and or work a STEM station. We want to expose our parents to STEM projects and our STEM Clubs.

General Information

Students will actively participate in a STEM based activity inside of their classroom. Teachers and students will participate in each STEM activity. There will be several stations set up for each grade level (K-5). Each STEM Station will be created by STEM Fellows Jessica Anderson, Brittany Bush, and Melisha Jenkins. We will also ask for faculty/staff volunteers to assist with setting up stations. Prior to sessions beginning, there will be a brief explanation of what STEM is and how it can be implemented at home. The Garden Club will do a presentation about their Garden and explain what their goals are as a club. The Engineering Club will present and discuss their construction projects. The STEM Robotic Club will do a robotics presentations. The other stations will consist of grade level appropriate project based learning activities.

STEM Day Agenda

https://docs.google.com/document/d/1ymNSiILAdPt8IzDzmJLihclIjW_wI-_YyC-NIGZvU0o/edit?usp=sharing

Resources that can be used at home or in class

<http://www.afterschoolalliance.org/STEM-curriculum.cfm>

<http://awim.sae.org>

<http://www.bsccs.org/site-categories/products/instructional-materials>

http://bie.org/project_search/results/search&channel=project_search&category=330&&334&ps_first=330&ps_second=334/

https://schd.ws/hosted_files/innovationinstitute2017a/ad/Attachment%20Techniques.pdf

<http://www.ciese.org/materials/k12/technology/online-collaboration/>

<http://www.citizenschools.org/what-we-do/apprenticeships/>

<http://www.asceville.org/lessons.html>

<https://learn.concord.org/>

<https://educatorinnovator.org/10-connected-learning-lesson-plans-from-the-remake-learning-network/>

<http://www.k12lab.org/>

<http://pbskids.org/designsquad/>

<http://www.discovere.org/our-activities>