**Big Ideas:**

Science, Math, Engineering and Technology should be taught in an integrated fashion as opposed to in isolation.

Students need an understanding of STEM and its vocabulary from as early as Kindergarten in order to understand clearly the connections between STEM.

Technology is human innovation in action! AND Technology is anything human-made that makes life easier.

Anything can be used to create something new.

There's no right answer, but many ways to get to the same answer.

**Goals and Objectives:**

Implement the use of STEM in our K-2 classrooms.

Engineering concepts and vocabulary used cohesively throughout all grade levels.

Understanding the difference between the “e” and the “E” in Engineering.

**Timeline:**

2\textsuperscript{nd}, 1\textsuperscript{st} and Kindergarten would receive STEM lessons daily over the course of one nine-week period during the first year of implementation. (Currently 2\textsuperscript{nd} grade is receiving STEM lessons one a week all year long in pull-out Science classroom.)

3\textsuperscript{rd}-5\textsuperscript{th} grades are already receiving STEM lessons within the Science pull-out classroom.

Beginning with 2014-15 school year and implementation of new Science standards, all students K-5\textsuperscript{th} grades would receive STEM lessons during Science instruction along with integration through music, art and media center support.

**Assessments:**

Journals

Rubrics for self-assessments

Finished project presentations
<table>
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<tr>
<th>Resources:</th>
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<th>Learning Experiences:</th>
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Need for a School Garden

Name of Authors: Cedar Grove Elementary – Kristy Finley, Kristy Smith, Beth Moore & Jodi Cowart

Content Areas: Science, Math, Language Arts, Social Studies & Art

Course: 2nd Grade Mathemagician Masterminds

Unit: Getting our Fingers Dirty and Our Minds Full while Planting a School Garden – Life Science

Standards:

• 2-1.4 Infer explanations regarding scientific observations and experiences.

• 2-1.2 Use tools (including thermometers, rain gauges, balances, and measuring cups) safely, accurately, and appropriately when gathering specific data in US customary (English) and metric units of measurement.

• 2-1.3 Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.

• 2-2.4 Summarize the interdependence between animals and plants as sources of food and shelter.

Big Ideas:

• Plant needs in order to survive in their environment.

• Structure of a plant, its needs and environment characteristics

• New respect for plants while realizing how they (the student) play a role in keeping our earth healthy and green.

Essential Question: What plants would survive and flourish in a garden in your climate zone?

Scenario: Through scientific inquiry the students will learn how to choose plants with temperature, soil and water requirements to match the conditions of the area that they will be planting in. To include bulb planting – the students will need to research bulbs to determine when they bloom and which ones need exposure to the cold in order to bloom properly. They also need to research variety of bloom color, flowering time, plant height and plant shape to make sure their garden is well designed. After researching, they will need to use their findings to sketch their garden plan on graph paper before purchasing bulbs.

Materials and Resources:

Read aloud books about gardens, plants and nature

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<tr>
<th>Plants</th>
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<tr>
<td>Gloves</td>
<td>Spades</td>
<td>Rakes</td>
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<td>Hoes</td>
<td>Bulbs</td>
<td>Graph paper</td>
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<td>Rulers</td>
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Content Information:

Science: Parts of a plant/which types of plants grow in the area you are going to plant your garden/ temperature, water and soil environments that your plants need to grow. Introduce bulbs.

Math: graphing, temperature, measuring

ELA: nonfiction text features used in the books

Social Studies: plants that are commonly grown in the South Carolina and in what area

Writing: write about the steps involved and the process that they used to make garden from beginning to end

Deliverables: Plants; gardens

Parameters: Determine the area that would be used by each grade level for their garden. Decide what you would allow the students to plant (ex: bulbs, cool season vegetables, annuals, etc.)

Assessment: Develop a rubric and let each grade level rate the success of their area.