Ambler Elementary School STEM Action Plan  by: Lesli Hendricks and Tina Kelly

**Big Ideas**

To integrate S.T.E.M. into the curriculum:

1. The students will think like engineers, designers, and problem solvers.
2. The students will identify and utilize creativity, inventions, and resources.
3. The students will improve their ability to:
   a. think critically and abstractly
   b. demonstrate imaginative and creative thinking
   c. work cooperatively with others
   d. comprehend what is read independently
   e. model ethical and social responsibility
   f. communicate ideas orally
4. The teachers will facilitate investigations utilizing the Engineering Design Process:
   a. Identify a Challenge
   b. Explore Ideas
   c. Plan and Develop
   d. Test and Evaluate
   e. Present the Solution

**Timeline:**
The action plan team proposes the following to implement S.T.E.M.

**First Nine Weeks:**

1. Train teachers on the STEM model and provide resources.
2. Provide teachers with the opportunity to observe STEM lessons.
3. Administer a career pre-assessment to third grade students.

**Second Nine Weeks:** (November – Career Awareness Month)

1. Career Drive-In (K-2) – Living Museum with Community Members
2. Career Wheel of Fortune (3-5)

**Third Nine Weeks:**

1. Third grade field trip to South Carolina Museum to research famous South Carolina natives and/or inventions related to South Carolina History with STEM ties (ex. Ronald McNair (astronaut), Charles H. Townes (laser co-inventor), cotton gin, Hunley).

**Fourth Nine Weeks:**

1. Third Grade students will research a career they are interested in and include science, technology, engineering, and mathematics skills that they will need to be successful in that career.
2. Administer a career post-assessment to third grade students.

**Assessments:**
To assess achievement, our students will create portfolios each nine weeks using authentic documentation such as notes, journals, diagrams, graphs, and pictures. The teachers will also assess using a pre and post career assessments and rubrics related to STEM activities.

**Resources:**
In order to implement the S.T.E.M. action plan Calhoun will need to use resources from the following areas:
1. STEM Resources and Web Site
2. Business Partners
3. Family and Friends of Ambler Elementary
4. Science Lab Materials

**Learning Experiences:**
Overall: Include Engineering Design Process in curriculum.

Specific Goals: Include at least one STEM project per nine weeks focused on the grade level scope and sequence.

**Examples:**
Third Grade
**The Garden Gadget Gala:** Students will learn the difference between invention and innovation. They will then be asked to interview an older person to get an idea as to what garden tools they have difficulty using. The interview responses will be used to innovate the garden tools that students will bring to class. After the students have changed the garden tool using play dough and other materials, they will present their ideas to a panel of invited guests.