1. Big Ideas: Integrate STEM into the curriculum

- Students will:
  - Develop problem solving skills
  - Share and communicate ideas in verbal and written form
  - Collaborate with peers
  - Safely and efficiently utilize technology
- Teachers will facilitate investigations utilizing the *Engineering Design Process*.

2. Timeline

**1st 9 weeks**
- Train teachers on the STEM model
- Provide examples of STEM projects
- Provide a poster to display in each classroom of the design process
- Provide teachers with opportunities to observe STEM instruction
- Administer career pre-assessment to all grade levels
- EXPLORE (8th grade), KUDER (6th grade)
- Introduce the STEM model principles to parents

**2nd 9 weeks**
- Career Fair at the Code Academy for 8th grade
- *Lunch and Learn* Students eat with a professional in the math and science field once every 9 weeks
- Online Career game

**3rd 9 weeks**
- 6th grade field trip to the World of Energy
- 7th grade field trip to tour Clemson University and Tri-County Technical College
- 8th grade students tour the Hamilton Career center
- All students research 1 specific career
- 8th graders use the information to determine their career cluster

**4th 9 weeks**
- All students job shadow (emphasis on math and science careers)
- Culminating career project in the format of a research paper or electronic brochure

3. Assessments

- Subject journals
  - Ex. Science journals to record data, observations, and results
- Rubrics that evaluate individual as well as group performance
• Student response system

4. Resources

• Oconee Business and Industry partners
• STEM resources and Website
• PITSCO
• Science Lab materials
• STAR Lab

5. Learning Experiences

• Overall Objective: Make the Engineering Design Process a classroom and school wide focus.
• Specific Objectives: Teachers collaborate with math and science teachers to include 1 STEM project each 9 weeks as an extension of the curriculum.
• Examples of Implementation:
  o Lego Robotics team, career study, Science and Math Night, Invention Convention, Lunch and Learn, Guest speakers, field trips to industries and universities, and science club

6. Examples

• Mini Solar Racers: Students work in groups to design and create the fastest solar power car in the class. Students utilize the engineering design process as they identify how to make the car move the fastest and explore and test those ideas by building a model using the materials provided. Students record their observations in their science notebooks and share results by filming the cars with Small Wonder cameras.