PALMETTO HIGH SCHOOL STEM Action Plan

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1. Big Idea
   • To integrate critical thinking and problem solving across the curriculum

2. Goals and Objectives
   • To coordinate with the senior project team to add STEM components/principles to the process and evaluation
   • To examine how STEM supports our school-wide “Power of I” initiative and present ideas to the administration and faculty
   • To use the engineering design process (which requires critical thinking and problem solving) in our major units of instruction
   • Timeline

3. Timeline
   • Goal 1: fall 2010 Tony Amato will meet with senior project team to communicate concepts and identify a math science teacher to join the team thus assisting with the implementation.

4. Timeline
   • Goal 2:fall 2010 Meredith Sargent will integrate EbD and Power of I principles to present to administrators. Spring 2010 with administrative approval, she will present ideas and examples to the faculty.

5. Timeline
   • Goal 3: fall 2010 all team members will enhance one existing unit of instruction with the Engineering Design Process. Spring 2010 all team members will enhance an additional unit of instruction. This timeline should continue until all major units include the critical thinking and problem solving.

6. Assessment
   • The STEM component in the senior project will be evidenced by use of the design process and rubric descriptors in the student evaluations
   • The STEM-Power of I inter-connectedness will be evidenced by presentations and staff development taking place.
   • The implementation of the design process will be evidenced by their use in unit/lesson plans.

7. Resources
   • STEM Symposium Clemson 2010 CD
8. Learning Experiences

- Students will experience lessons that integrate STEM into related and seemingly unrelated curriculum.

9. Learning Experiences Example 1

- Spanish 3: Within the unit on health and nutrition students will participate in the “Food for Spaceflight” lesson.
- After learning key vocabulary in the target language, they will go through the design process in small groups using only Spanish to communicate with each other.
- In this way they will be addressing 15 developing stage standards in Spanish, and 8 other K-8 standards in science, health and technology.
- Food for Spaceflight lesson

10. Learning Experiences Example 2

- Government: Students will apply the engineering design process to examine how the inadequacies of existing forms of government gave rise to new forms of government.
- Students will be asked to use existing knowledge to identify the problem(s) with a monarchy.
- They will conduct research to identify solutions that have been applied in various countries at different periods of history.
- Students will continue with the design process model culminating with communicating their findings.