7th Grade STEM Curriculum Overview

Introductory paragraph (3-4 sentences) which includes the learning focus and the Board adopted textbook series that is used as a foundation for the course. (Think of what you share on Curriculum Night)

7th Grade STEM explores the engineering and design process while introducing computer programing and robotics. Using the SensorBot, students assemble and code robots capable of sensing and reacting (through motion and light) to their surroundings. They experiment with different sensors and develop their coding skills by programming their robots to solve challenges, such as following lines and object detection and avoidance.

Skills to be developed throughout the course: (bulleted list of skills that students will work on throughout the course)

- Defining problems
- Planning and carrying out investigations
- Analyzing and interpreting data
- Designing solutions
- Obtaining, evaluating, and communicating information

In Gower 7th STEM Classrooms:

Students will define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution.

Students will evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Students will analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

Students will develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Units of Study:

- Introduction to Engineering: Helicopters
- SensorBot

- Criteria and Constraints: Straw Rockets or Egg Drop

The Learning Standards for this course are (ie Common Core Standards, Illinois Learning Standards, National Standards). Priority standards should be listed and linked below:

Next Generation Engineering Standards