

## STEM SYLLABUS 8th

**Course Title:** M/J STEM Physical Science #2003030

**Grade Level:** 8<sup>th</sup> grade

**Textbook:** None

This course will be presented through lectures, web resources and hands-on activities.

**Instructor:** Mrs. Overdorff

**Length of Course/Credits:** Semester Long/ 0.5 credits

**Course Materials Fee:** \$15

**Description:** This course will provide students an opportunity to explore the area of design and engineering. The major focus of the course is to expose students to the design process, research and analysis, teamwork, engineering standards and technical documentation. Students will be given the opportunity to develop skills and understanding of course concepts through hands-on activities, projects and problem based learning. This course will challenge students to hone their interpersonal skills, creative abilities and understanding of the design process.

The course assumes no previous knowledge. Students will employ engineering and scientific concepts in the solution of engineering design problems. In addition, students will use 3D solid modeling design software to help them design solutions to solve proposed problems. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges that increase in difficulty throughout the course. Students will also learn how to document their work, and communicate their solutions to their peers and members of the community.

Please be aware that during this semester I plan to show video clips and full educational videos. I preview and vet all videos both clips and full length. They are used to enhance and enrich the STEM course content. A movie permission form will be sent home in your student's homeroom. Please make sure you sign and return this form.

**Course Content:** (order may change)

- Introduction and Safety
- STEM and Design Cycle
- Water Towers
- Flight
- Simple Machines/Rube Goldberg Machines
- Balsa Bridges
- Solar Power/Junior Solar Sprint

**Grading Procedure:**

Tests: 40%

Projects, Presentation and Performance: 35%

Homework, Participation and In Classwork: 25%

**Scale:**

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69 %