



## 2024-2025 SYLLABUS

Engineering  
Grades 6, 7, & 8

### INSTRUCTIONAL GOALS

We will develop and use models to generate data to test ideas. We will evaluate different design solutions based on design criteria. We will construct explanations and design solutions using models. As well as communicate scientific and/or technical information in writing and through oral presentations. The students will understand that humans or computers can transform materials into products. As well as describe how a machine uses energy to do work.

At the end of this course, you will

- Know how to develop, revise and use models/prototypes in various ways.
- Know how to communicate in writing and oral presentations using scientific and technical data.
- Know what a communication, transportation, and structural system are.
- Know the drawbacks and benefits of each system in society.
- Know basic coding skills.

### PROJECTS

#### **Grade 6**

STEM Career Slideshow  
Rubber band powered  
vehicle Catapults  
Problem Solving Skills

Remote control vehicles  
Coding  
Orthographic Drawings

#### **Grade 7**

Escape Room  
Rockets  
Land Yachts  
Zip Lines

Race Cars  
Communication  
Systems Coding/Scratch  
Hoop Gliders



## **Grade 8**

Parachutes  
Sorters  
Coding/Scratch MicroBits  
Motors/Generators

Launches  
Computational Thinking  
Green Energy Vehicle  
Wind Turbines

## NEEDS AND RESOURCES

### **Required Background**

To successfully complete this course, you

- Should understand the Engineering Design Process.
- Should know how to use basic tools (hammer, screw driver, ruler, etc.).
- Should understand that Engineering is an iterative process.

## POLICIES AND PROCEDURES

### **Class Structure:**

The Engineering class is a project based class. There will be lectures and videos to reinforce the skills and procedures needed to complete a project. The class as a whole will be very hands-on, where the students will be coming up with a plan of attack for each project, and then executing that plan. The students will learn by doing and working with their hands.

### **Expectations for Engineering:**

- Please be on time for your classes.
- Please have your materials ready.
- Always be respectful and appropriate to your classmates.

### **Grading Policies:**

Engineering is a pass/fail exploratory class for 6<sup>th</sup> grade and is a letter grade for 7<sup>th</sup> and 8<sup>th</sup> grade. Students are graded on their projects, their project debriefs, participation within their project as well as citizenship.

## CONTACT INFORMATION

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