



2022-2023 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 on society.
- Know basic coding skills.

PROJECTS

Grade 6

STEM Career Slideshow
Rubber band powered vehicle
Catapults
Problem Solving Skills

Coding
Orthographic Drawings
Remote control vehicles

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.
- Find a dedicated workspace that is quiet and free of distractions.
- Always be respectful and appropriate to your classmates.

Grading Policies:

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



CONTACT INFORMATION

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