

Hyperloop Vehicle Engineering Design Week

Overview

In this course, students will be introduced to engineering through design challenges. Students will work as a team of engineers to create a solution for a given problem. Throughout the week the student will learn skills such as coding, circuitry, Arduino, and 3D Design. At the end of the week, students will apply the skills that they have learned to create a Hyperloop Vehicle and they will have a chance to showcase their accomplishments to the other teams.

Engineering Design Challenge – Mouse Trap Car

We will introduce the engineering design process by designing a mouse trap powered vehicle. The students will have to build their vehicle in order to pass certain distance, accuracy, and speed tests.



Micro: Bit

Students will develop their coding skills using the Micro: Bit and can then incorporate the Micro: Bit into their hyperloop design.



3D Design Workshop

Students will learn how to design objects using AutoCAD software. Students will have a chance to incorporate custom 3D printed pieces, such as custom wheels, into their hyperloop design.

Arduino and Circuits

Students will learn how to wire circuits to use them with an Arduino Microcontroller. Students will then have the chance to incorporate sensors, such as proximity sensors, into their hyperloop vehicle using the Arduino.



Soldering Brain Games

Soldering is an extremely useful skill that the students will learn by soldering their very own Brain Game!

Engineering Design Challenge – Hyperloop Vehicle

At the end of the week the students will use all the skills they have learned to build a hyperloop vehicle. We will first explore magnetic levitating trains, and then incorporate other design features that will make each group's design unique!