Technology Enrichment Program -
TEC-SMART (Malta)
*Requires student computer access. See registration page for details.
HVCC TEC-SMART Campus - 345 Hermes Road, Malta, NY

Middle School Program
For students entering grades 6 - 8
70383: July 20 - 24, 8:30 a.m. - 3 p.m.  Tuition: $265

This program is comprised of six modules. Campers participate in all of these throughout the week.

- **Module 1 -** Blast Off With Rocket Design
- **Module 2 -** Earthquake Proofing
- **Module 3 -** Solar Cookers
- **Module 4 -** Think Tank
- **Module 5 -** Toothbrush Battle Bots
- **Module 6 -** Video Game and App Design

**Blast Off With Rocket Design**
Students will be introduced to the design and function of solid fuel rockets by building and launching their own rocket! We use a Class “C” motor for our rockets which are built from scratch and launched at the end of the week. Students will also learn about pursuing this as a future career and also about the National Rocketry Challenge!

*Jeffrey Gargano, Instructor*

**Earthquake Proofing**
Students will examine the engineering involved in the design of homes and structures built in earthquake prone zones. Getting a chance to problem solve, design and build their own structures will be the challenge. The durability and destruction testing on the “earthquake machine” will be the excitement!

*Gregory Garrison, Instructor*

**Solar Cookers**
Using only the sun as an energy source, students will create a solar powered cooking device. The activity will involve investigation and experimentation with green construction and insulation materials. A variety of challenges will await the builders at the completion of the build to test out their solar cookers.

*Gregory Garrison, Instructor*

**Think Tank**
Are you a problem solver? Can you work quickly as a team to accomplish a task? Do you like a good challenge? If so, this is for you. Students will be given a fixed amount of time and materials to solve a secret task while competing against the other teams. Students also will be introduced to a number of competitions that they can get involved in back at their home schools for the upcoming academic year.

*Jeffrey Gargano, Instructor*

**Toothbrush Battle Bots**
Participants will explore robotics, problem solving and design in this exciting challenge. Through reverse engineering they will design and build their own battle bot out of an electric toothbrush. Before they bring their creation home they will get to compete against others in a Toothbrush Battle Bot Showdown!

*Gregory Garrison, Instructor*

**Video Game and App Design**
Where does the next great idea in gaming or app design come from? You! Learn how to design, test and publish your own video game. This session will focus more on building and testing a game that you design rather than the coding behind it. If time permits, we also will explore the world of App Inventor. Some of the best games and apps have been designed by students just like you!

*Jeffrey Gargano, Instructor*
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High School Program
For students entering grades 9 - 11
70659: August 3 - 7, 8:30 a.m. - 3 p.m.  Tuition: $265

This program is comprised of six modules. Campers participate in all of these throughout the week.

- **Module 1** - 3D Printer Key Chains/CAD
- **Module 2** - American Rocketry Challenge
- **Module 3** - Arduino Uno
- **Module 4** - Cantilever Testing
- **Module 5** - Energy Audit/Wind Turbine
- **Module 6** - Think Tank

### 3D Printer Key chains/CAD

Become an innovator and an inventor! The engineering design process involves a series of steps that lead to the development of a new product or system. You will be provided a challenge to create a new product to solve a need you have identified. Your design will come to life using computer software to create images of the design.

**Darrel Ackroyd, Instructor**

### American Rocketry Challenge

Students will get a first look at the American Rocketry Challenge which is a national contest for students in which they must deliver a payload to a determined altitude. Students will try out their own skills building and launching their rockets. Students can then take what they learn and compete in the American Rocketry Challenge this year!

**Jeffrey Gargano, Instructor**

### Arduino Uno

How do you pronounce that? Take a look at the latest craze that lets you build anything from plants that tweet when they need water to cat-operated pet bowls just to name a few. Students will learn digital circuits, basic programming of the device, and much more, like maybe even building a space satellite! The projects and possibilities are endless.

**Jeffrey Gargano, Instructor**

### Cantilever Testing

Ever wonder how a structure can hold weight without being tied down at both ends? Well, this is the interesting structure called a cantilever. You will study these designs and build your own cantilever. Get ready to build a structure that will outlast others!

**Darrel Ackroyd, Instructor**

### Energy Audit/Wind Turbine

The need to conserve energy and to use alternative energy sources has never been greater. You will learn the basics about energy usage and consumption by conducting energy audits and using computers to analyze the data. Does your phone use more energy than a light? You will also explore how wind energy can be used to meet the need for electricity. Will your team design the best wind turbine and produce the most energy?

**Darrel Ackroyd, Instructor**

### Think Tank

Are you a problem solver? Can you work quickly as a team to accomplish a task? Do you like a good challenge? If so, this is for you. Students will be given a fixed amount of time and materials to solve a secret task while competing against the other teams. Students also will be introduced to a number of competitions that they can get involved in back at their home schools for the upcoming academic year.

**Jeffrey Gargano, Instructor**