



# Austintown Local Schools District STEM Newsletter



*"We provide an inspiring education that strengthens and prepares our students for unlimited future opportunities."*

November 2018



Click to watch a recent ACTV Falcon Focus discussing our STEM programs.



Senior STEM student, Charles Carson designed the custom District STEM logo encompassing all four buildings in Austintown Schools.



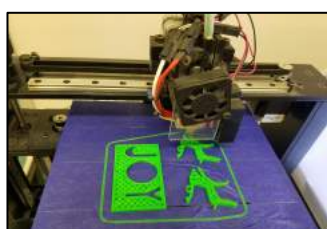
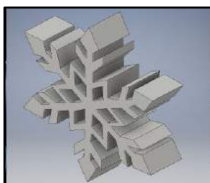
Fitch STEM students participated in the STEM Entrepreneurship and Innovation Forum at YSU on Friday, November 9th. Students received inspiration from President Jim Tressel and local innovators by hearing of their pathways to success. Students then convened in a collaborative breakout session with the task of creating an innovation and presenting a one minute sales pitch. Click on the videos above to watch Mason, Randy, Tyler, Dallas, Justin, and Victor give their on-the-fly pitch. It was an engaging day and refreshing reminder that anything is possible! [#gostem](#)



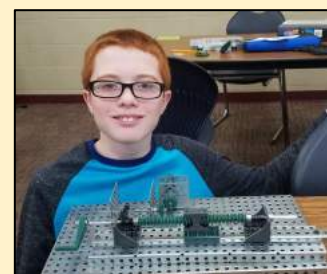
AMS "TECH" club students got the word out about technology at one of their Wednesday meetings. "T-E-C-H, what's that spell?"



Thank you to these companies for their support of our STEM programs!



Fitch students are designing their own 3D printed ornaments in time for the holidays.



6th grade STEM students just finished building and analyzing mechanisms and simple machines. In preparation for the Pull Toy Parade! Students will design and build pull toys which are manually powered compound machines. See the video above!

# Computing jobs are the #1 source of new wages in the US

**500,000**  
current openings

These jobs are in every industry and every state, and they're projected to grow at twice the rate of all other jobs.

**HELP WANTED**

current openings

These jobs are in every industry and every state, and they're projected to grow at twice the rate of all other jobs.



## The majority of schools don't teach computer science

The infographic consists of two donut charts. The left chart is a yellow ring with a small grey segment, representing 90%. The right chart is a grey ring with a small yellow segment, representing 35%. Below the charts is a horizontal row of 10 dots: the first is red, and the remaining 9 are blue.

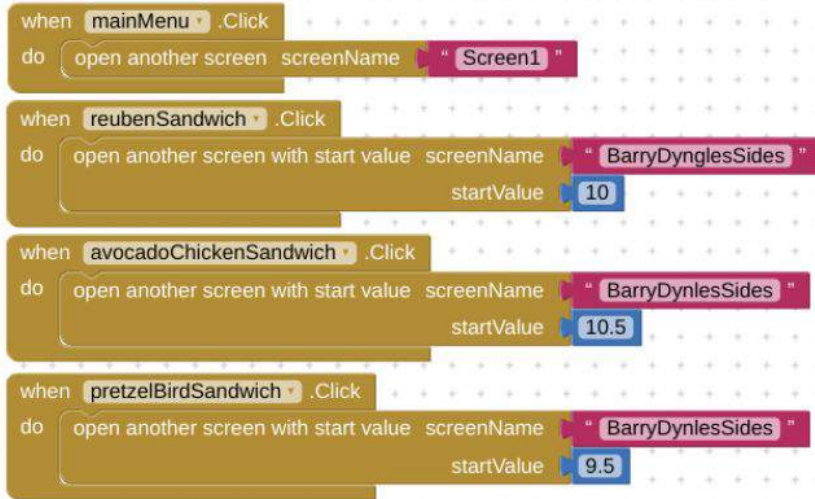
| Category                                               | Percentage |
|--------------------------------------------------------|------------|
| Parents who want their child to study computer science | 90%        |
| High schools that teach computer science               | 35%        |

of parents want  
their child to  
study computer  
science

of high schools  
teach computer  
science

The projected job market for computing is sky rocketing. Fitch High School now offers a full sequence of Computer Science courses for grades 9-12!

**COMPUTER  
SCIENCE  
GRADES 6-12**



Fitch Computer Science 1 students are using MIT App Inventor to begin learning the basics of coding. Pictured on the left is a basic block based code for ordering online menu items from local restaurants. [Click here](#) to access the MIT App Inventor website and begin creating your first app yourself! It is free and a resourceful way of beginning your pathway to coding!

PLTW  
COMPUTER  
SCIENCE



There are 10  
kinds of people  
in the world:  
those who  
understand  
binary code, and  
those who don't.

All 5th grade students are receiving nine weeks of daily instruction in Project Lead the Way's Launch course. It introduces block based coding using VEX IQ robots. Students use various color sensors and motors to program their robots to move and turn a specific number of degrees and move when their robot "senses" a particular color. This combines math, computing, and critical thinking skills!

"Everybody in this country should learn how to program a computer... because it teaches you how to think."

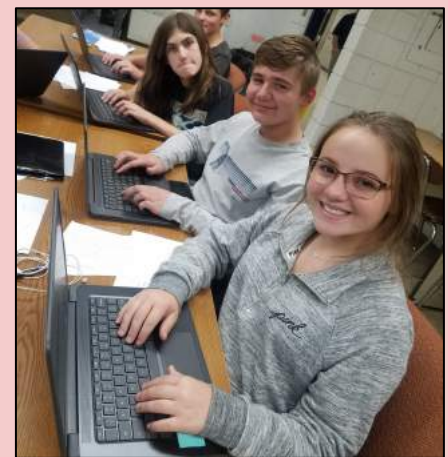
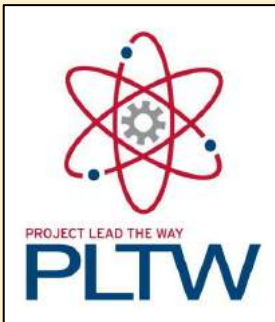
- Steve Jobs

**Computer Science for Innovators & Makers is coming to AMS in January!**

8th grade STEM students will experience Project Lead's the Way creative and collaborative computing course, *Computer Science for Innovators & Makers*. This course will begin in January. Students are challenged to use sensors and actuators to develop systems that interact with the environment. They will code and upload programs to a microcontroller to perform a variety of authentic tasks.

The logo for Project Lead the Way (PLTW) is located in the bottom right corner. It features a stylized red atom with a grey gear in the center, symbolizing the intersection of science and technology. Below the atom, the text "PROJECT LEAD THE WAY" is written in a small, red, sans-serif font. Underneath that, the letters "PLTW" are displayed in a large, bold, blue, sans-serif font. The entire logo is enclosed within a thin black rectangular border.

8th grade STEM students will experience Project Lead's the Way creative and collaborative computing course, *Computer Science for Innovators & Makers*. This course will begin in January. Students are challenged to use sensors and actuators to develop systems that interact with the environment. They will code and upload programs to a microcontroller to perform a variety of authentic tasks.



| K<br>What We Know | W<br>What We Want to Know | L<br>What We Learned |
|-------------------|---------------------------|----------------------|
|                   |                           |                      |

Students began the second nine weeks researching types of robots, the purpose, and where they are used. The K-W-L charts documented what they know, want to know, and what they learned, were used to organize their information. Students then presented their research to their peers.



Guardian GT



Jaco



AILA



PR2



RHex



PackBot



Rollin' Justin



Da Vinci



Daren UP



Asimo

| Design Process Step                                                               | Response to Questions                                                                                                          |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|  | What was the problem the robot was designed to solve?                                                                          |
|   | How had this problem been solved in the past?<br>What skills or knowledge would the designer have developed to design a model? |
|  | Create a sketch of the robot that includes labels and information about how the robot works.                                   |
|   | How could the designer test the robot?<br>What are some strengths and weaknesses of this robot?                                |
|  | Describe how the robot solved (or did not solve) the problem.<br>How could the robot design be improved?                       |



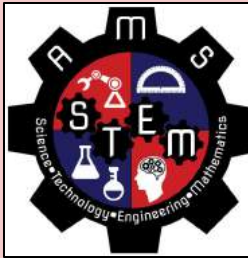
## AUSTINTOWN INTERMEDIATE SCHOOL

All students in 5th grade receive nine weeks of daily instruction in Project Lead the Way's Launch course. This STEM specials class focuses on introductory programming using flowcharts and pictures, robotics and automation. In addition, students solve a mystery at their school using the scientific method, collaborative learning, and elements of problem solving.





[Click here](#) to access our YouTube Channel and watch videos from the year.



[Click here](#) to access our class website to see projects from the school year.

# Austintown Middle School STEM

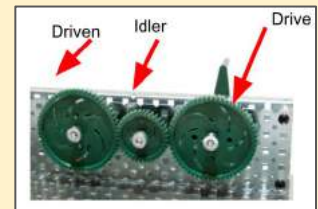
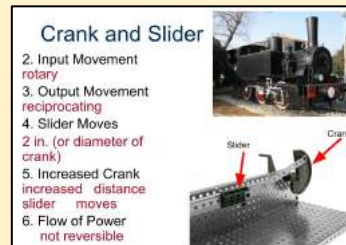
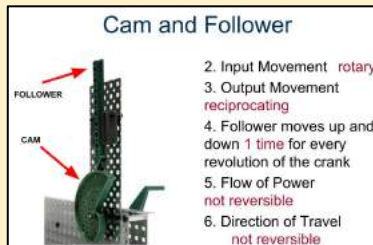


## AUSTINTOWN MIDDLE SCHOOL



### 6th Grade

Students are creating their first Pull Toy Parade! They will combine all the prior learning of simple mechanisms and the design process to collaboratively create a mechanically powered pull toy with a custom designed theme. Students will use the concepts of gear ratio, speed, torque, and a splash of creativity for this challenge!



### 7th Grade

Students completed the Ancient Civilization Playground Project. Students designed an ancient playground, such as Ancient Rome, Aztec, and Egyptian using 3D modeling software and prototyping. They documented their design process and wrote a research paper while 3D printing various components of their playgrounds. It was an engaging interdisciplinary project. #gostem



### 8th Grade



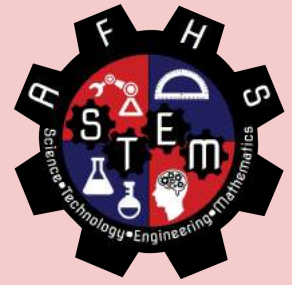
Students are making a DC motor using electromagnets and learning about the differences between motors, generators, AC and DC circuits. Soon students will be soldering and creating schematics of simple and complex circuits. This is preparation for an upcoming project involving the creation of an electronic invention or innovation involving 3D printing and circuitry schematics. It's all comprehensive in STEM!



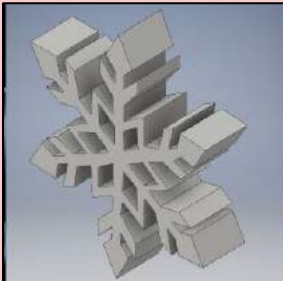


# AUSTINTOWN FITCH HIGH SCHOOL

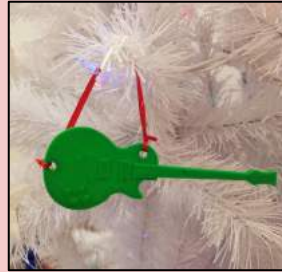
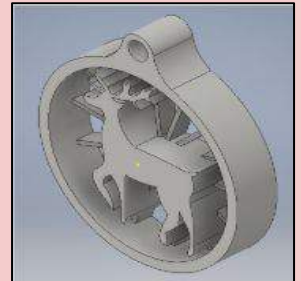
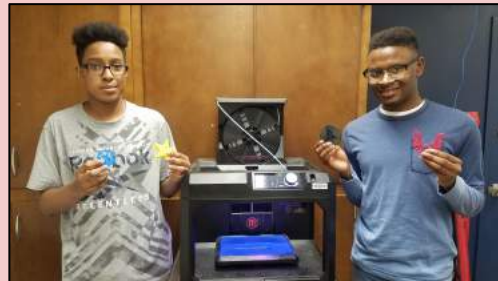
*"We provide an inspiring education that strengthens and prepares our students for unlimited future possibilities."*



The VEX Robotics Team, Cosmic Guardians, finished 32 out of 78 teams at Brecksville High School on November 10th. This is a huge accomplishment for a beginning team. To learn about this year's challenge click the video. Their next competition will take place at Firestone High School in Akron on December 15th. Both teams, Cosmic Guardians and Team CounterLogic will be competing that day. Good luck to everybody!



Fitch STEM and 3D Design 1 students are designing and creating using AutoDesk computer modeling software their own custom made 3D printed holiday ornaments.



Fitch STEM students participated in the STEM Entrepreneurship and Innovation Forum at YSU on Friday, November 9th. Students received inspiration from President Jim Tressel and local innovators by hearing of their pathways to success. Students then convened in a collaborative breakout session with the task of creating an innovation and presenting a one minute sales pitch. Click on the videos on the front page of Mason, Randy, Tyler, Dallas, Justin, and Victor give their on the fly pitch. It was an engaging day and refreshing reminder that anything is possible! [#gostem](#)



# Austintown Local Schools STEM Programs

## Meet Our Staff



Chris Berni



Danielle Chine



Doug Eisenbraun



Josh Folkwein



Jason Freudenberg



Lauren Hrusovsky



Ashley Smith



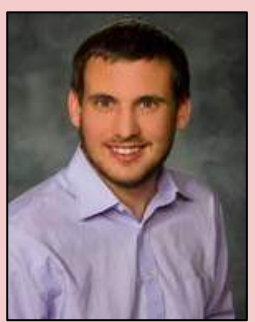
Celia Sroka



Jessica Tomic



Brian Umstead



Robert Wyant



The vision of Austintown Local Schools is to offer a united community with a proud legacy and a progressive approach to education. We prepare our students by providing an inspiring education with a focus on a future of unlimited possibilities. One way of extending progressive educational initiatives is through our many **STEM (Science, Technology, Engineering & Math)** programs and extracurricular activities starting in kindergarten through graduation. These programs provide a project-based and student-centered learning environment with a focus on 21st century skills to give our students skills to ensure success that lasts a lifetime.



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[Austintown STEM website](http://AustintownSTEMwebsite.org)