



Austintown Fitch High School

STEM Newsletter



January 2018

Calendar

Sat. February 3- VEX Robotics Competition at MCCTC

Wed. February 7- 2 hour Early Release

Thurs., February 15- Parent and Teacher Conferences

Fri., February 16- No School

Mon., February 19- No School for President's Day

Fri., February 27- Bridge Building Competition at YSU

March 6 & 7- Fitch STEM students to AIS STEM Days

March 23- Ends 3rd nine weeks

March 29-April 1- Spring Break

Tues. May 29- Last day for students



Erica and Sidney helped make the poster for Creative Arts Nights which took place on January 12th. STEM became STEAM when students showcased their artistic abilities displaying their custom-made 3D designs.

APPLY NOW

Applications for the Fitch STEM Program are being accepted for the 2018-2019 school year. The link to access the application is below. Seats are limited.

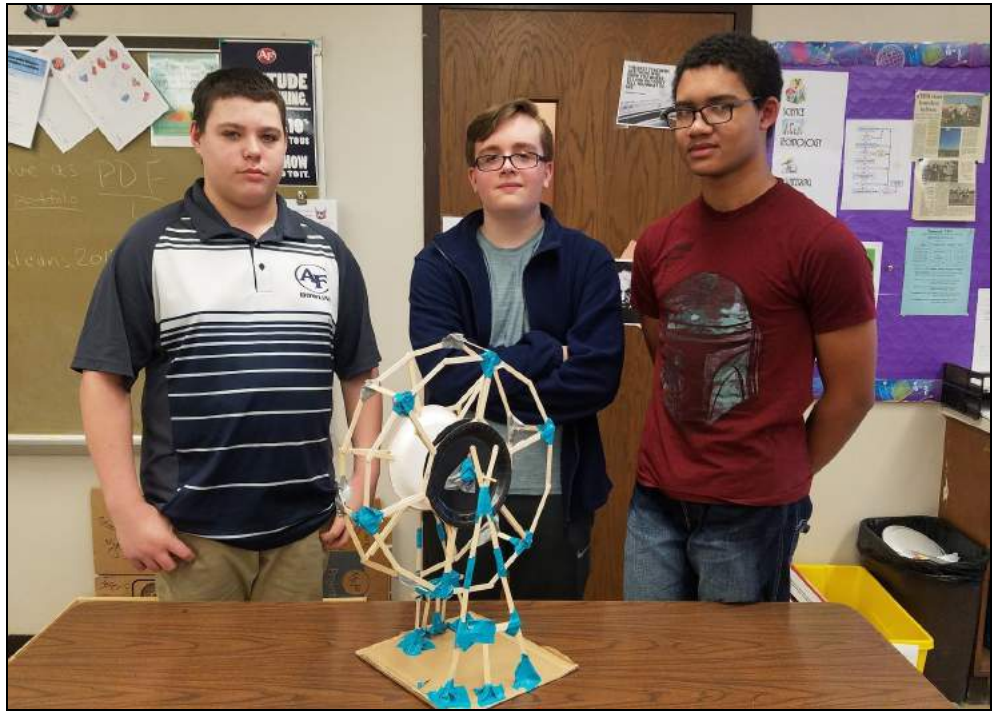
[Fitch STEM Application Link](#)

Greetings STEM Families,

January was a short and fast month due to many holidays and weather delays and cancellations. Nonetheless, STEM students in all grades have been working on many various projects and collaborative assignments. Two teams of 10th graders will compete at the [Mahoning Valley Miniature Bridge Building Competition](#) at YSU on February 27th. All 10th graders will watch the competition at YSU that day as well as tour parts of YSU. Also, all middle and high school STEM students will be presenting station activities at the AIS STEM Days on March 6th and 7th. This is an excellent example of peer instruction and mentorship in the STEM Program. Lastly, senior students are hard at work on their Capstone research projects and defended their innovative projects to a panel of engineers. It was an exciting month in the STEM Program!



Two teams of 10th grade students will be competing in the Mahoning Valley Miniature Bridge Building Competition held at YSU on Feb. 27th.



Robert, Anthony, and Omaree display their ferris wheel they created using elements of engineering in technology project.

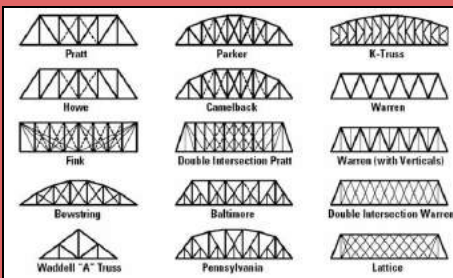


Students can order Austintown Fitch STEM Program T-shirts. They were designed by STEM students and are being made by the Fine Arts Department. Please consider buying a shirt and supporting the Austintown Fitch STEM Program.

[T shirt Order Form](#)



Jared poses with some students during STEM Ambassadors at AIS. This lesson from last year included using compound machines to toss a ping pong ball.



Students are experimenting and testing different styles of bridges in the Statics unit in Principles of Engineering.



11th grade students concluded the Computer Integrated Manufacturing unit which included the building and programming of the robotic arm seen above.



Isaac works fearlessly on his robot for VEX Competition. Students competed at three different league events and will compete at a tournament at the MCCTC on Feb. 3.



AMS and Fitch STEM students will be hosting STEM Day at AIS on March 6th and 7th. Students will set up hands on station activities for students during this engaging day.



Ariyana adjusts the trusses in her ferris wheel in technology project.



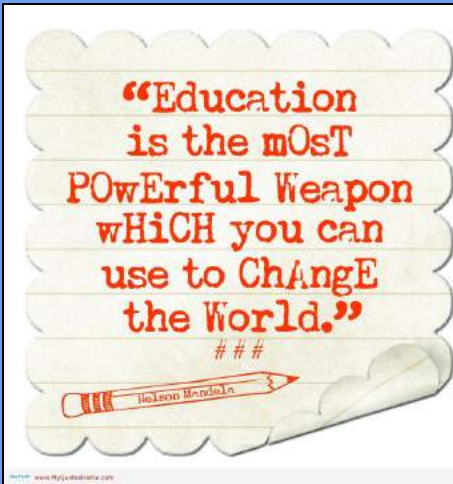
Last year at the Mahoning Valley Bridge Building Competition students secured the Wayne Harvey Design Award for their bridge that displayed a trifecta of strength, aesthetics, and uniqueness.



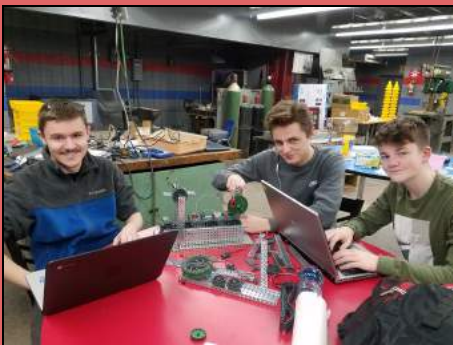
Vlad creates his automated conveyor belt at the conclusion of Computer Integrated Manufacturing.



Tre (far left) handles the VEX robotics course during League Play at the Mahoning County Career & Technology Center. For information about this year's competition [click here](#).



Janyah taught 5th grade students how to read temperature graphs and create heat by making friction during the STEM Ambassadors Program.



Students in Computer Integrated Manufacturing completed their conveyor belt projects.

9th Grade

- ★ 9th graders students finishing their Puzzle Cube Projects. Students went through the whole design process creating their unique puzzle cubes. They created isometric and orthographic sketches, built working prototypes, and calculated statistical



Robert and Sam displayed their game faces while working on their robots during VEX League Play at the MCCTC on Jan. 25th.

analysis of their measurements. Finally, they used computer modeling software to build individual parts and automate the final assembly using both parametric and geometric constraints. They will be marketing their toy and designing their own packaging as well.



STEM students showed their artistic side while participating in Creative Arts Night at Fitch High School on Jan. 12.



The augmented reality sandbox, created by STEM students last year will be at STEM Day at AIS. [Click here](#) to see the augmented reality sandbox in action!

10th Grade

- ★ Students designed and created a bridge utilizing West Point Bridge Designer software. The software allows students to apply engineering design, material science, and statics to the creation of a truss bridge carrying a two-lane highway that spans a riverbed.
- ★ Students will use their knowledge of truss calculations, statics, materials, and experience using bridge simulations to build their own balsa wood bridge. The most successful two teams will participate in the Mahoning Valley Miniature Bridge Building Competition at YSU on February 27.



Chris and Colin show off their ferris wheel created with elements of engineering.



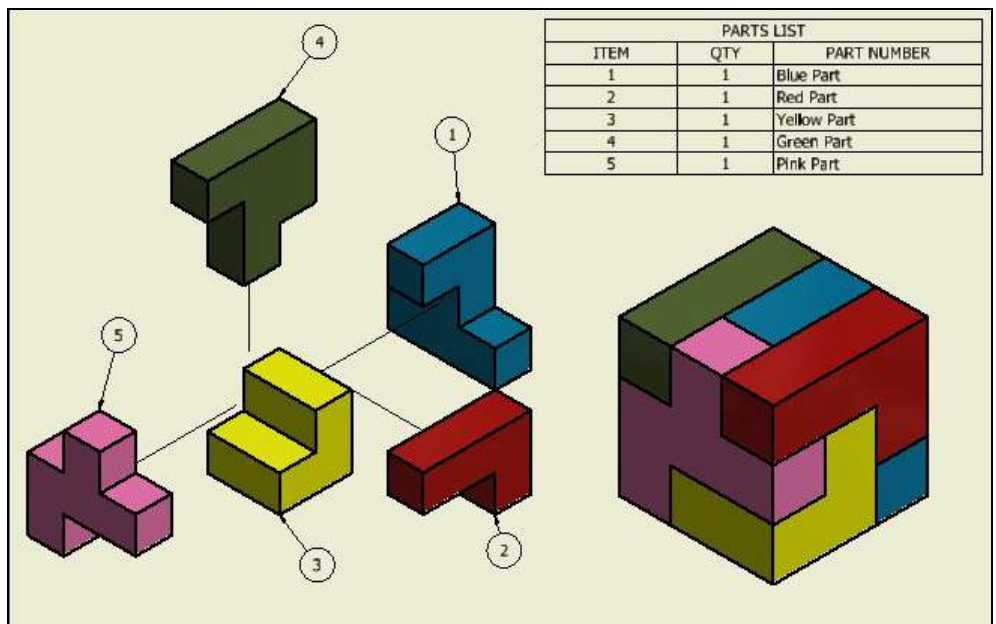
Sidney demonstrates to students how to use state-of-the-art Vernier temperature probes to analyze temperature. Students investigated making friction to predict the effect of friction on graphs.



Many students represented STEM by explaining projects and 3D printing during Creative Arts Night.



Ryan and Ariyana pose with their ferris wheel during technology project.



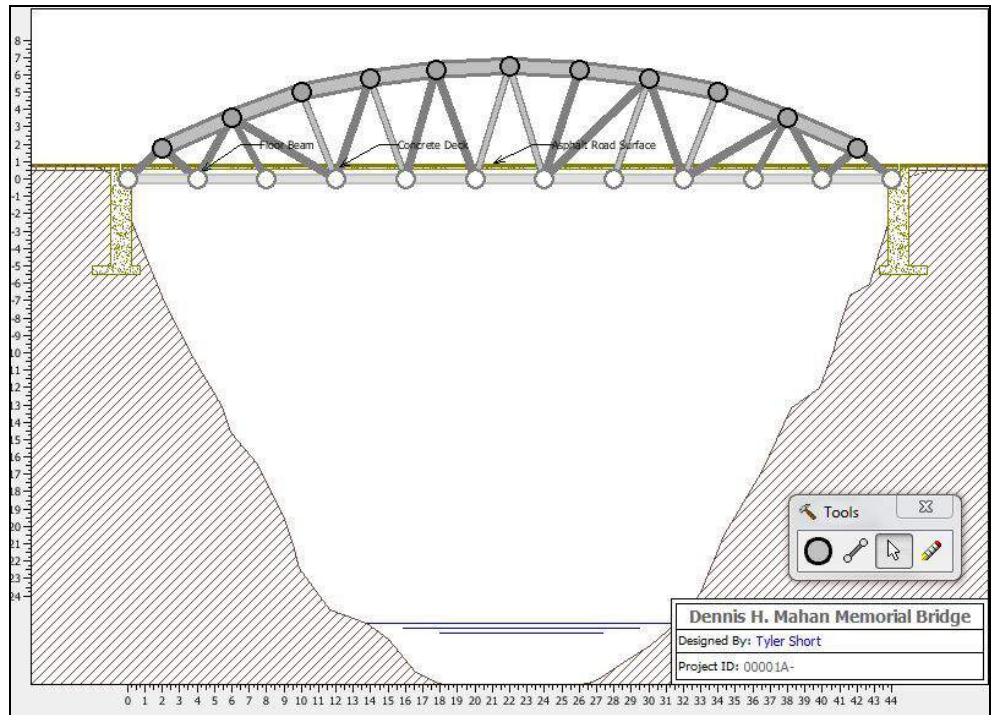
9th graders created working drawings of their puzzle cube projects using AutoDesk 2016, a computer-aided 3D design software.



11th grade students created simulations of their balsa bridges in preparation for the Mahoning Valley Miniature Bridge Building Competition on Feb. 27th.



Marcellena taught 5th grade students how to read temperature graphs and create heat by making friction during STEM Ambassadors.



11th grades students use a bridge building simulation program in the Statics unit of Principles of Engineering.



Computer Science 1 students begin programming with the language of Python using Repl.It, an online computer programming website that reads and compiles code in a variety of languages.

11th Grade

- ★ Students began coding in Python by using the concepts of input, output, variables, and functions in Computer Science 1.
- ★ Students concluded the Computer Integrated Manufacturing course using LexMotion Robotic Arms, a small scale model of robotic arm automation used in industry today. They programmed robotic arms using simulation, calculated roll angles and created a program for a robotic arm to communicate with another device.

THERE ARE 10 TYPES OF PEOPLE
THOSE WHO UNDERSTAND
BINARY
AND THOSE WHO DON'T



Jackson presents his senior Capstone project for Engineering Design & Development in front of a panel of engineers from Taylor Winfield Technologies.



12th Grade

- ★ In Engineering Design & Development students presented their innovative idea to a panel of engineers from Taylor-Winfield Technologies. They will then redesign and evaluate their innovation before presenting their final product at the end of the school year. This project is a great example of marrying education, local business, and the community.

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[Austintown STEM Website](#)

[AMS STEM Student Website](#)

[Fitch STEM Student Website](#)

