

Austintown Local Schools

STEM Newsletter



February 2017

Calendar

Friday, Feb. 24- 10th gr. bridge building competition at YSU

Tuesday, Mar. 7- Students at STEM Day at AIS

Wednesday, Mar. 8- 2 hr. Early Dismissal

Friday, Mar. 17- End of 3rd nine weeks

April 10-14- Spring Break

Friday, April 28- VEX Robotics Scrimmage at the MCCTC

APPLY NOW

Applications for the Fitch STEM Program are being accepted for the 2017-2018 school year. Click on the link to access the application. Seats are limited. Deadline is April 3rd or until all seats are filled.

[Fitch STEM Application Link](#)



Tuesday, March 7th the AMS and Fitch STEM students will be hosting STEM Day at AIS. ALL 4th graders will receive hands on, STEM lessons from experienced STEM students.



Congratulations to the following 10th grade STEM students who competed in the Mahoning Valley Miniature Bridge Building Competition at YSU on February 24. Owen Yohman, Kyle Anderson, and Victor LaRose won The Wayne Harvey Design Award. This highly recognized award is given to the team that has the most complex design, highest efficiency and is aesthetically pleasing. Great job team! [Click here](#) for more information.

Greetings STEM Families,

February was a short and fast month. STEM students in all grades have been working on many various projects and collaborative assignments. Two teams of 10th graders competed at the [Mahoning Valley Miniature Bridge Building Competition](#) at YSU on February 24th. All 10th graders got to watch the competition at YSU that day as well as tour the Chemistry Department and visit the Additive Manufacturing Lab. All middle and high school STEM students will be presenting station activities at the AIS STEM Day March 7th. This is an excellent example of peer instruction and mentorship in the STEM Program. Lastly, all STEM students got to tour [Taylor-Winfield Technologies](#) and receive first-hand experience working as an electrical, mechanical and computer engineer. Students heard from recent college graduates in the field and toured the facility. It was an exciting day in the STEM Program.



WFMJ “snapchatted” a picture of Victor, Kyle, and Owen while building during the Mahoning Valley Miniature Bridge Building Competition at YSU.



Thomas and Jerell pose at Taylor-Winfield Technologies. Students toured the facility that day and it was “a day in the life” of an engineer.



Tom Metzinger, Vice President of A.P. O'Horo Company, came and spoke to the STEM students. He discussed both commercial and industrial contracting and how to build infrastructures for wastewater plants, roads, bridges, and site development jobs.



Billy-Jack, Antonio, and Donovan pose in front of a robotic arm programmed similar to the Lynxmotion robotic arms used in the CIM course.



Caleb has been diligently working on his VEX competition robot "Proto" in preparation for a local scrimmage at the MCCTC on April 28th.



It was all smiles at Denny's after touring Taylor-Winfield Technologies. Moon Over My Hammy anyone?

Introduction to Engineering (IED)

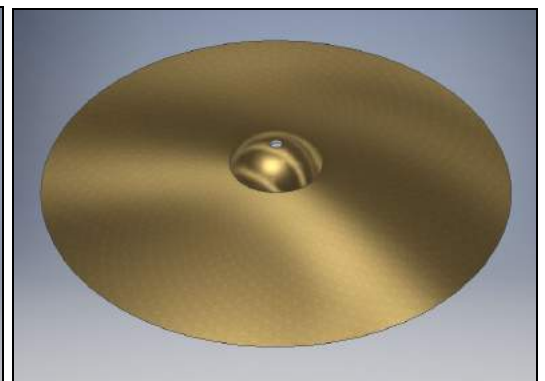
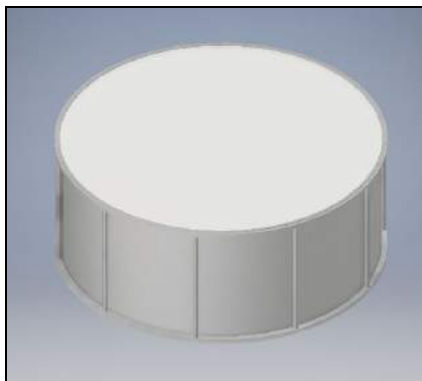
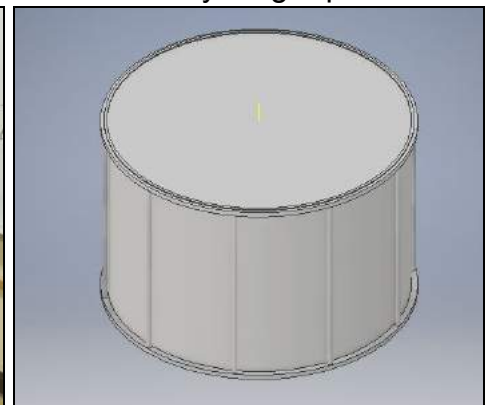
- ★ Students are using physical properties to solve design problems and creating objects or structures to satisfy physical constraints to minimize cost. Students also assigned a specific material to a part and use the capabilities of the CAD software to determine the mass, volume, surface area, and density value of a 3D object.
- ★ Students have created station activities for STEM Day at AIS on March 7th. Fitch STEM students are teaching 4th graders how to use a 3D printer, basic programming, simple circuitry, and interactive topographical maps. This is an exciting opportunity for both the high school students and their younger peers.

“It does not matter how slowly you go as long as you do not stop”

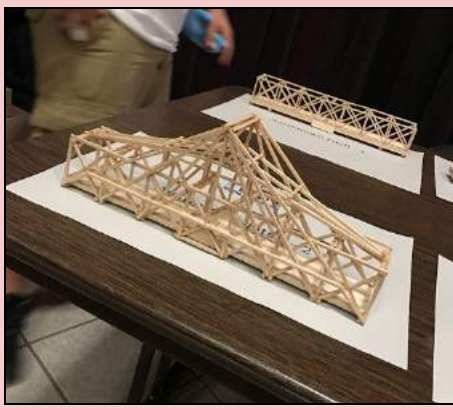
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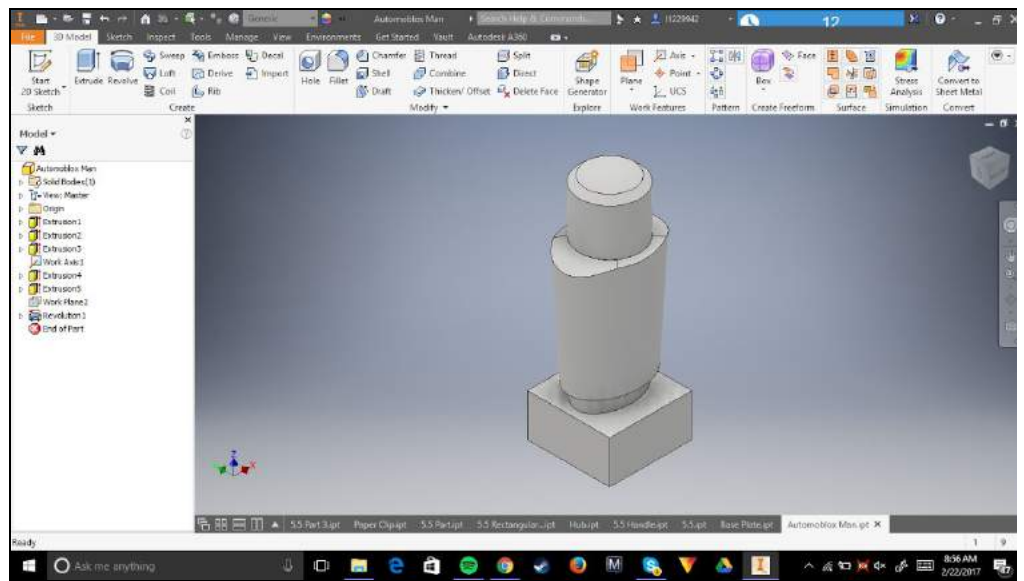
Dylan uses a 3D scanner to create a 3D image of Ms. Sroka in the YSU Additive Manufacturing Department at YSU.



Sam, a 9th grade STEM student and drummer in the band created a bass drum, snare drum and cymbals using Inventor. Well done!



Above is Victor, Kyle, and Owen's final bridge they created prior to demolition at the Mahoning Valley Miniature Bridge Building Competition at YSU on Feb. 24.



Sam showcases his attempt of a male component part given the specifications of a female part for his Automoblox project.



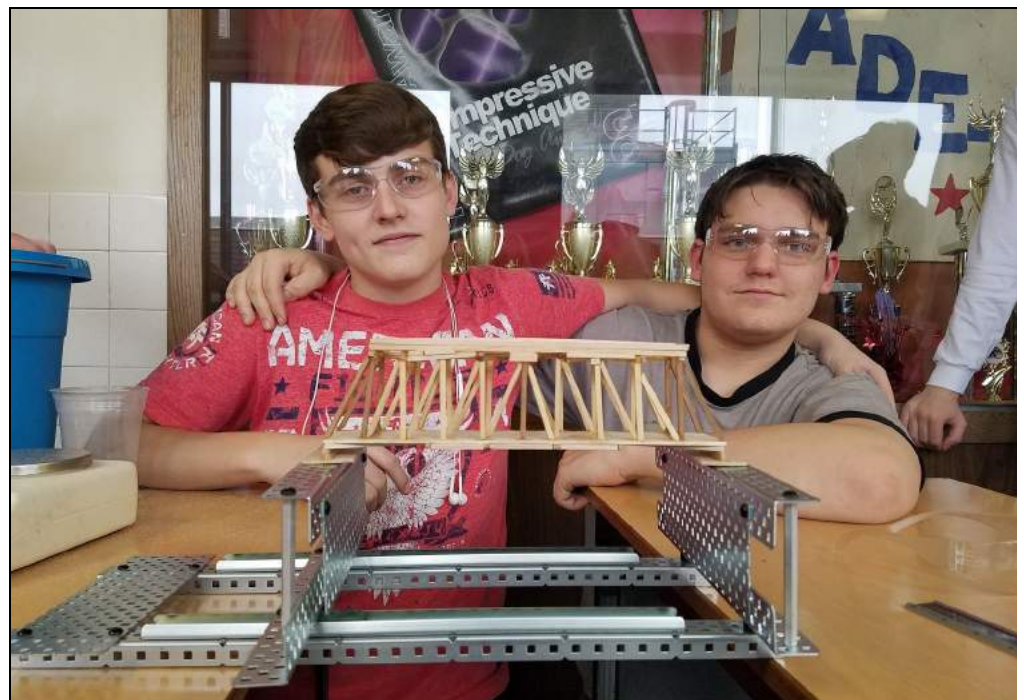
A representative from the Pittsburgh Institute of Technology came and talked to students about a career in aeronautics on Feb. 28.

Principles of Engineering (POE)

- ★ Students completed the Statics unit with emphasis on centroids, beam deflection, free body diagrams, force vectors, moments, and calculating truss calculations. They used this knowledge to use computer simulation software to building bridges and created their own balsa wood bridges that they tested and redesigned. The best two teams competed in the Mahoning Valley Miniature Bridge Building Competition at YSU of Feb. 24.
- ★ Students have created station activities for STEM Day at AIS on March 7th. Fitch STEM students are teaching 4th graders how to use a 3D printer, basic programming, simple circuitry, and interactive topographical maps. This is an exciting opportunity for both the high school students and their younger peers.



Sam the Man, a drummer in the school band created snare drums, bass drums, and other percussion equipment using AutoDesk Inventor.

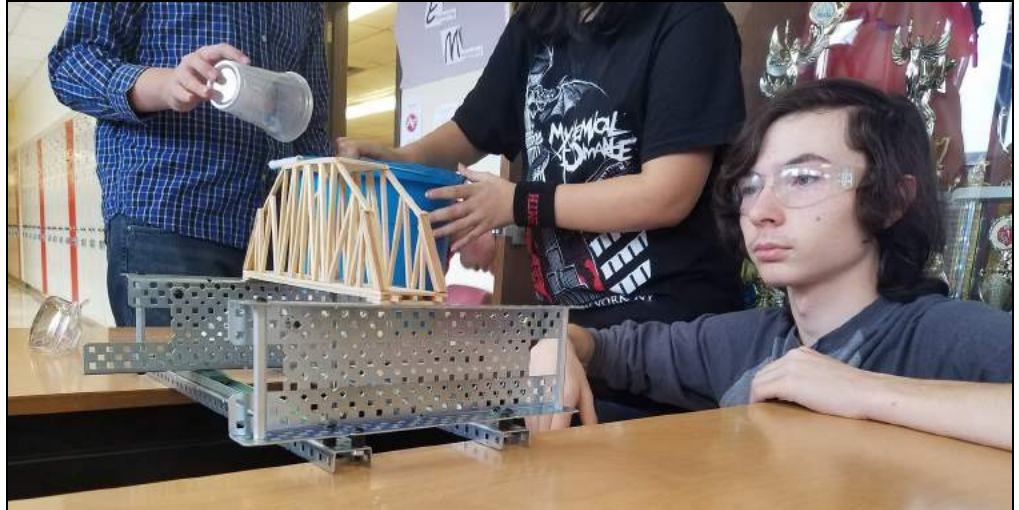


Justin and Nick pose with pride at their bridge design as it prepares to

be tested. Students learned about truss design and static forces. The best two performing teams competed in the Mahoning Valley Miniature Bridge Building Competition at YSU this month.



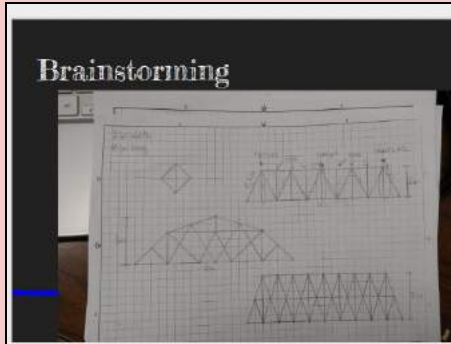
A copy of Victor, Kyle, and Owen's "Wade Harvey" Design Award for their recognition in building a bridge rated the highest in efficiency, aesthetics, and design complexity.



Kyle analyzes the weak joints of his bridge while his classmates slowly increase the amount of sand the bridge has to hold. This was one of many trial runs Kyle tried prior to competing in the Mahoning Valley Miniature Bridge Building Competition.

Computer Integrated Manufacturing (CIM)

- ★ Students built an [Augmented Reality Sandbox](#) to be used for the STEM Day at AIS on March 7th. Student built the sandbox and organized the extended metal to suspend the projector and 3D camera. Students calibrated both the hardware and software to create an augmented reality sandbox where students can learn about topographical maps and the patterns that water flows.
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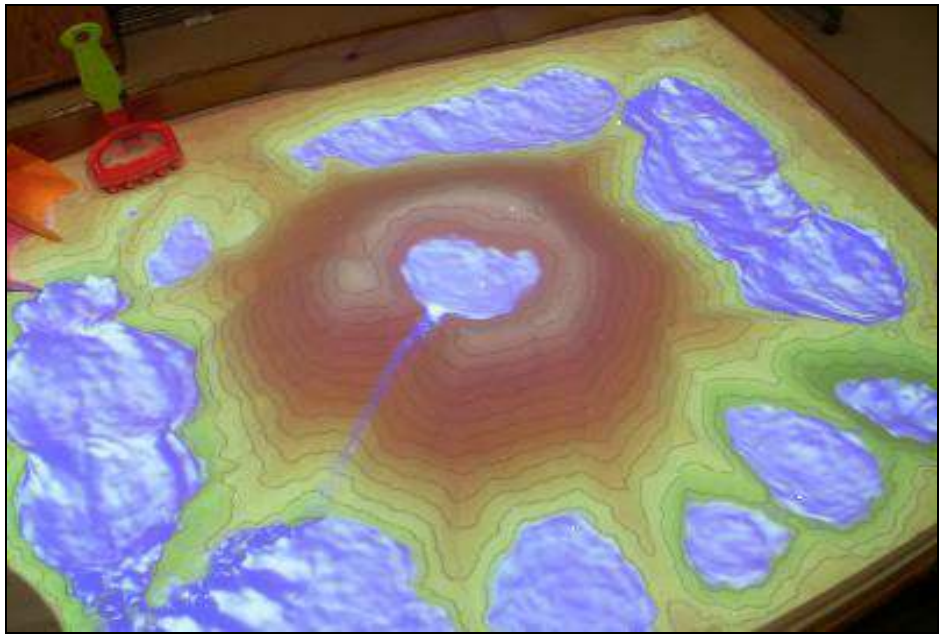
Sydney, Jared, Cedric, and Hannah share their [Bridge Build Presentation](#) which documents their building design process.



Mr. Freudenberg visited Fitch to



assist with the building of the
Augmented Reality Sandbox.



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[Austintown STEM Website](#)

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[Fitch STEM Student Website](#)



