

Austintown Fitch High School

STEM Newsletter



April 2017

Calendar

April 27th- Choffin Career Center field trip (11th gr.)

April 28th- VEX Scrimmage at the MCCTC

May 4th- Water Treatment Plant field trip (10th & 11th gr.)

May 10th- Weather Balloon Launch, Football field at 9am

May 11th- Materials Research Labs field trip (9th gr.)

May 12th- Prom

May 31- Last day for students



STEM students and alumni brought their own drone to collect aerial footage of the annual weather balloon launch last spring. This year's launch will take place Wednesday, May 10th at 9am on the football field.

Greetings,

April was a busy month with many different projects commencing in the Fitch STEM Program. Students also completed state AIR testing with students taking many assessments in English, Algebra, World History, and Biology. This was an overwhelming tasks for students but we persevered and became stronger learners because of it.

Additionally, there are many upcoming events in the Fitch STEM Program. Select students competed in the VEX Robotics Scrimmage at the MCCTC on April 28th. 10th and 11th grade students are expanding on their learning by touring the Water Treatment Facility in Warren and the 9th grade students are touring Materials Research Labs in Struthers on May 11th. Check out the calendar of events at the left side of these page for more exciting events in the Fitch STEM Program.

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 so apply today!

[STEM Applications Link](#)

Austintown Fitch High School
STEM Program
Pathway

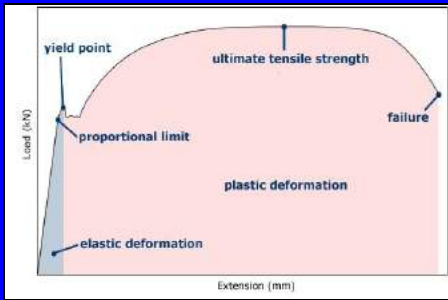


2017-2018

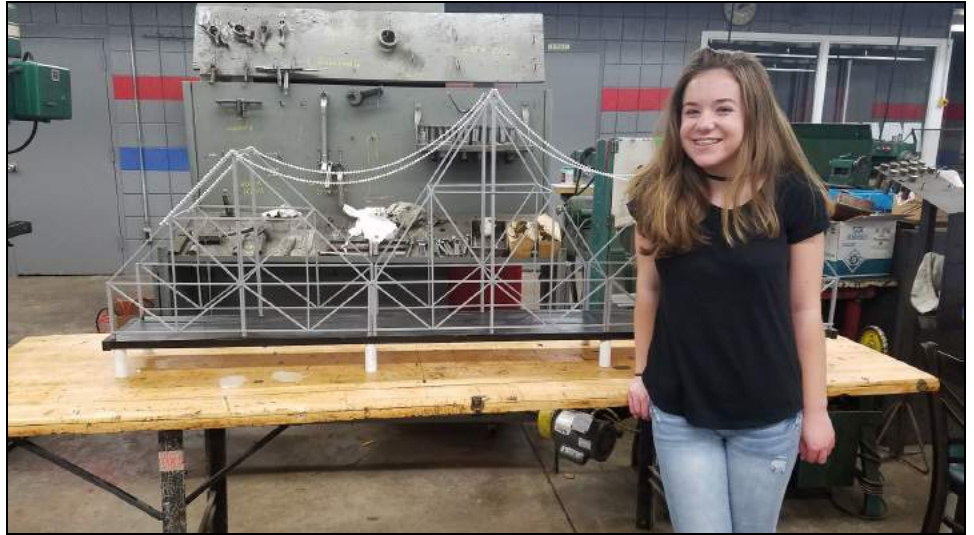
"Ask not what I want to be
when I grow up, but what
problem do I want to solve!"



[Click here](#) to access an informational presentation regarding the Fitch STEM Program.



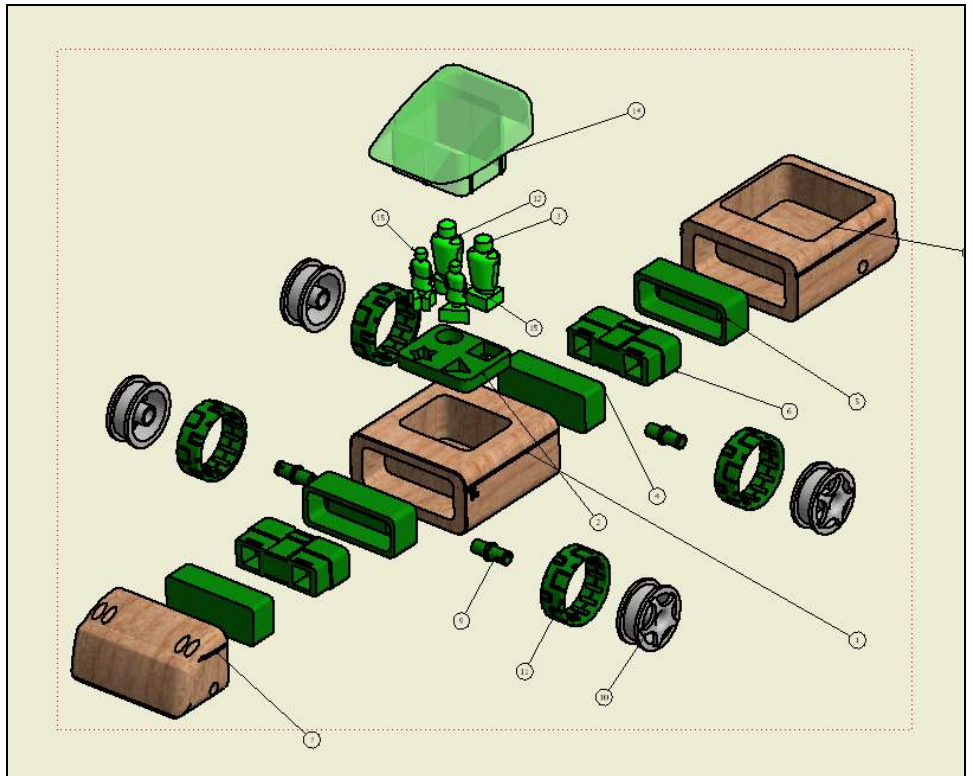
In POE students interpreted and made sample specific calculations related to the material properties of a dog bone test sample.



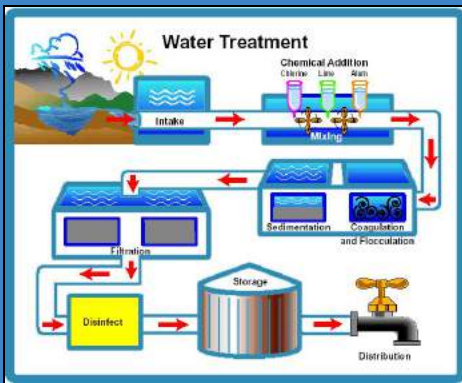
Sidney built a Parisian-inspired bridge for her French class complete with elements of architecture involving stress and strain. What an awesome way of incorporating STEM into other subjects.



Kyle modified the scoop feature of his robot in preparation for the VEX Robotics Scrimmage at the Mahoning County Career & Technical Center on April 27th.

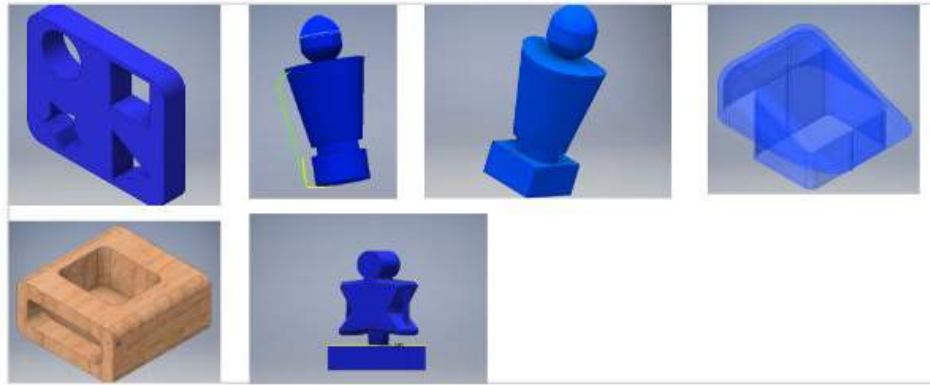


Andrew, Zack, Thomas, and Antonio's show the assembly views of their reverse engineering project.



10th and 11th graders will learn about the process of water filtration to provide clean drinking water while visiting the Warren Water Filtration Facility on May 4th. This is expansion on the 11th graders' learning for those in Environmental Science.

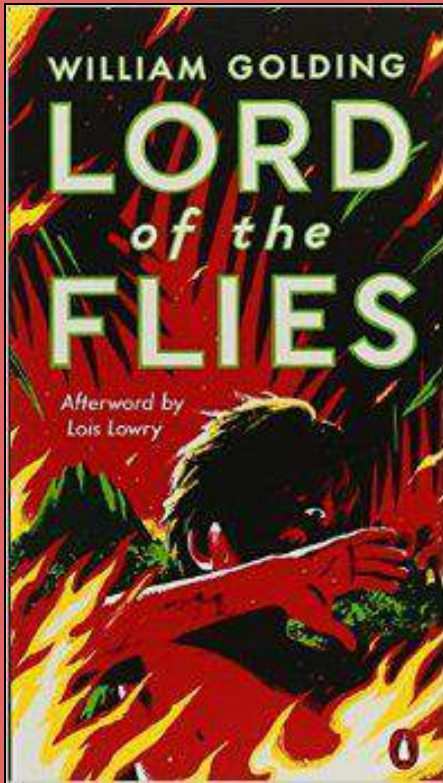
Base Components



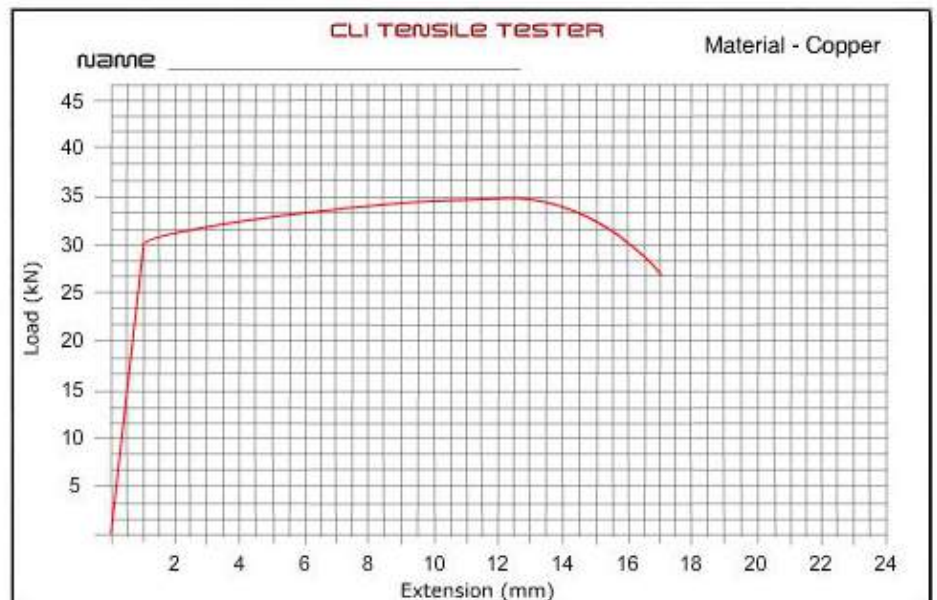
Jamie showcases her base components she created for her reverse engineering project in Introduction to Engineering Design.

Introduction to Engineering Design

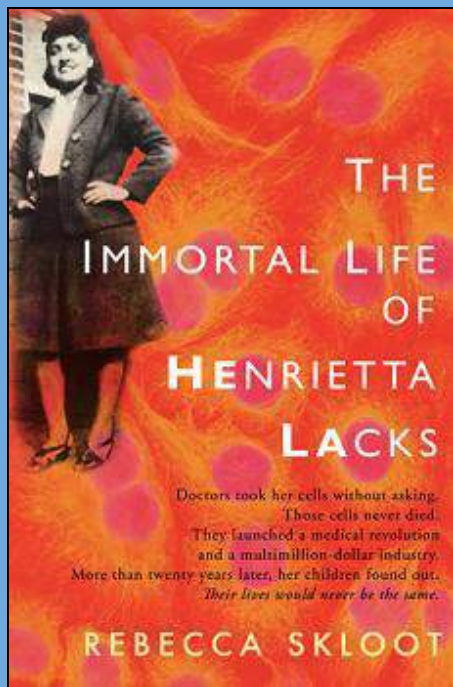
- ★ Students concluded their reverse engineering project by disassembling a consumer product. Students created disassembly charts, 3D part models, mass property analysis, and computer 3D CAD models.
- ★ Students started dimensioning 7.1 American National Standards Institute and the American Society of Mechanical Engineers (ANSI or ASME) is used to apply measurement to parts to enable clear communication. In order to communicate effectively, a person needs to understand the rules of the language and to follow the standards set down so that anyone who reads a dimensioned drawing wi



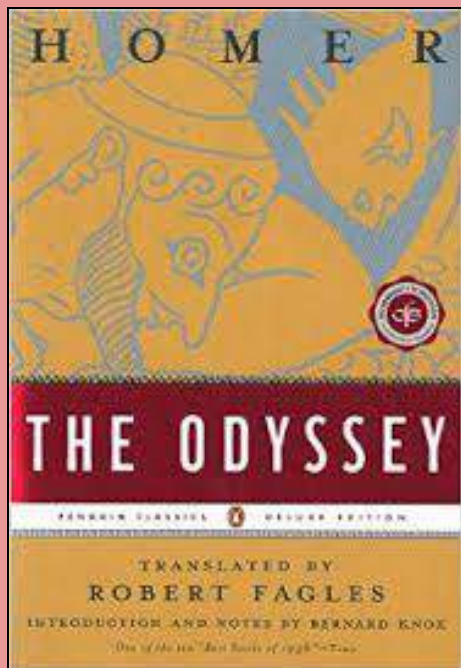
10th graders are in groups reading various William Golding novels. Students are comparing and contrasting selections by Golding.



POE students are using tensile testing to determine the proportional limit stress of various materials.



10th & 11th grade students have concluded *The Immortal Life of Henrietta Lacks*, a book documenting the life and afterlife of a woman who had inadvertently impacted science and modern medicine.



9th grade students are learning about Greek Mythology by reading *The Odyssey* by Homer.



Jared and Nick created a prototype of their shipping container design. Student repurposed used shipping containers, performed a cost analysis, and designed their structures using architectural design software.



William and Hannah prepare for the VEX Robotics scrimmage.

Principles of Engineering

- ★ Students performed materials analysis on various objects such as a dog bone. Students calculated tensile stress, rupture points, modulus of elasticity, modulus of resilience, and modulus of toughness.
- ★ Students took on the challenge of repurposing shipping containers and creating a design. Some cost effective, innovative ideas included a small grocery store used to bring fresh produce and kitchen staples to grocery limited areas such as in poor urban areas.

Cracking the AP Economics

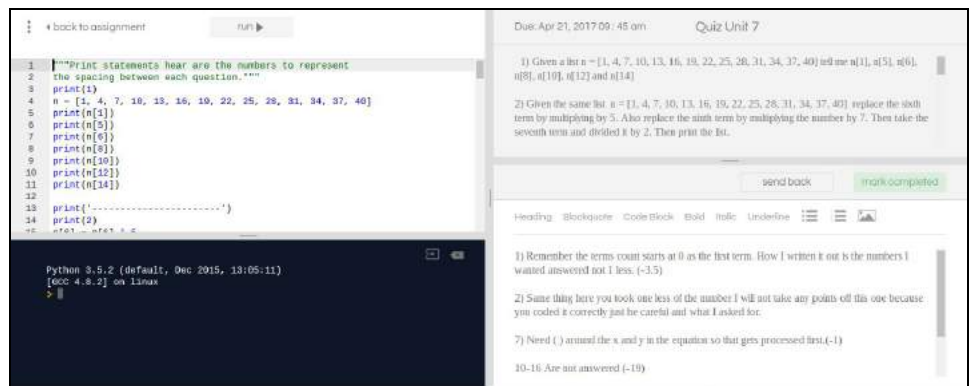
11th students are hard at work studying for the AP Economics Exam. Students take the exam on May 12 and upon passage with a certain score they receive college credit for the course. Good luck to them!



Owen displays his shipping container home using Floorplanner software. Students also created working drawings and used various cost estimators to develop a build plan for their creations.



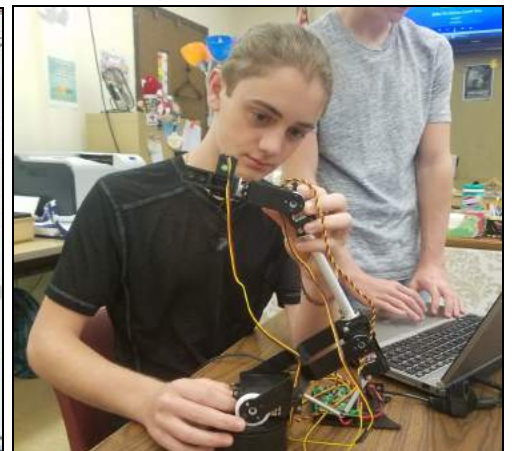
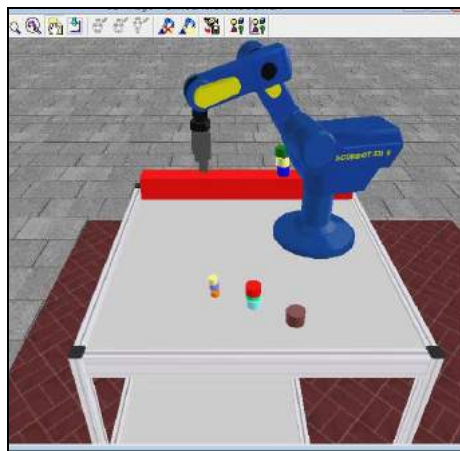
Last day for students is Wednesday, May 31st.



Junior STEM students are continuing with the development of their skills in Python.



10th grade students repurposed and designed using architectural software used shipping containers as part of a Principles of Engineering Project. They then created prototypes of their models.



Victor, Jacob, Vlad, Dylan, and select 10th and 11th grade “STEMmers” were hard at work assembling and calibrating the five Lynxmotion robotic arms. The RoboCell program is used to automate the robotic arms (left). Victor calibrates the servo motors to coincide with the RoboCell software (right). This is not as easy as he makes it look.



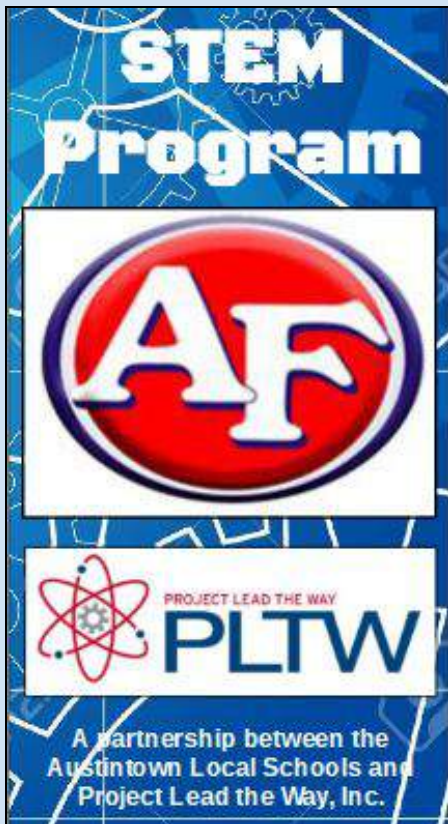
Brandon, Jackson, and Tylor check out a piece of equipment at the Choffin Career Center on April 27th.

Computer Integrated Manufacturing

- ★ Students continued with programming using Python, a cloud coding environment. As seniors next year, students have the opportunity to take Computer Science 1 & 2 to expand on their programming and coding skills.
- ★ Mr. Umstead and students are hard at work preparing for the AP Economics test on May 12. This is an accelerated course used to prepare students to take the AP exam. Upon passage with a certain score students can get college level credit.
- ★ Students are assembling and calibrating the Lynxmotion robotic arms as part of the Computer Integrating Manufacturing course.



Many STEM students sought refuge in the cool STEM Lab during a particularly hot day with students all working on different projects and activities. It was organized chaos.

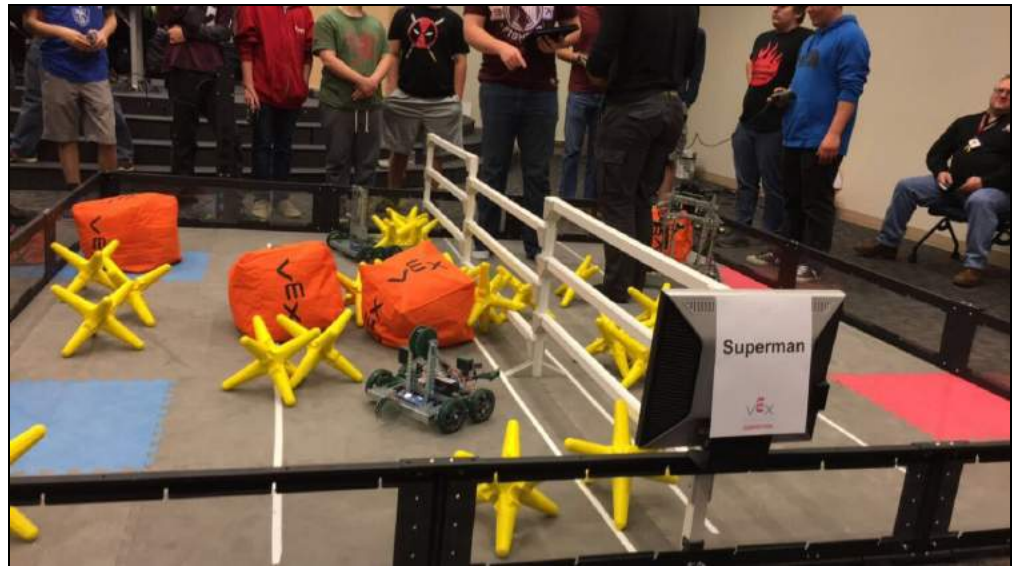
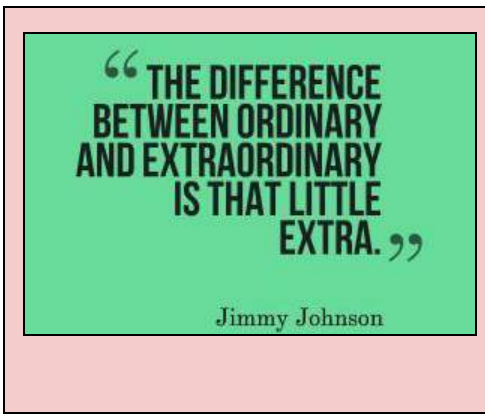


The AMS STEM Showcase will take place on Thursday, May 4th in the AMS STEM cafetorium from 6 - 8 pm. All students and families are encouraged to attend.



The AMS STEM students will launch their annual weather balloon on

Wednesday, May 10 at 9am at the Fitch football field. Pictured above, is a previous successful launch.



Select student competed in the VEX Robotics Scrimmage at the Mahoning County Career and Technical Center on April 27th.

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[Austintown STEM Website](#)

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[Fitch STEM Student Website](#)



