

Austintown Fitch High School

STEM Newsletter



September 2016

Calendar

Oct. 1st- Fitch SAT Testing

Oct. 4th- 10th & 11th gr. STEM field trip to America Makes, AST2 & YSU

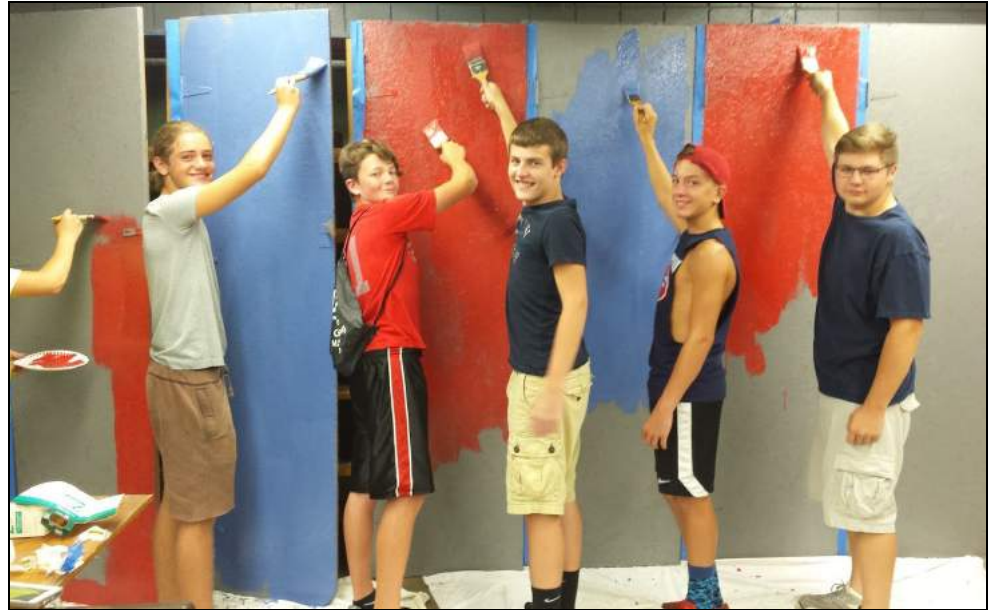
Oct. 6th- 9th gr. STEM field trip to America Makes & YSU

Oct. 8- Homecoming Dance

Oct. 12th- 2hr. Early Dismissal

Oct. 14th- NEOEA Day, No school for students

Oct. 28th- End of 1st nine weeks



Victor, Dylan, Justin, Zach, and Andrew (aka Ted) paint the shelves in the Fitch STEM Lab which will house the robotics kits.



Charles proudly designed the Fitch STEM logo complete with all areas of STEM. It will be used on the class website, Tshirts, and STEM materials. Great job!

Greetings,

It has been an exciting and engaging first month of the STEM Program at Austintown Fitch High School. Students are hard at work in their Introduction to Engineering, Principles of Engineering, and Computer Integrated Manufacturing courses. In addition, they have created a Fitch STEM Logo, website, and are undertaking many new endeavors in their Technology Project courses.

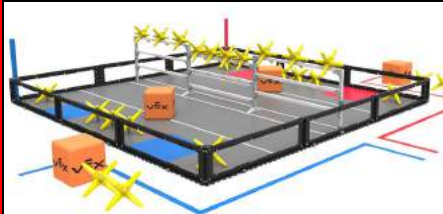
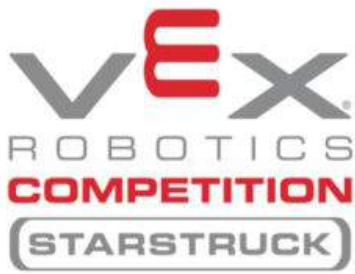


Ja'Nyaha, Kyle, Tre, and Owen display their compound machine.

Austintown Fitch STEM Program

[HOME](#) [ABOUT US](#) [CLASSES](#) [COMMUNITY INVOLVEMENT](#) [GALLERY](#)

Jared and other STEM students have worked feverishly creating the Fitch STEM website. [Click here](#) to see their progress.



Students will be competing in the VEX Robotics Competition. For information on this year's challenge [click here](#). To access a sponsorship form [click here](#).



Matthew received 4th in the National Derby Racing Championship on August 6th. That is 4th in the world! Yes, you read that right.



Austin and Brandon using team building skills while preparing the Robotics Lab.



It was all smiles during the STEM Lab renovation and pizza party in August. Students volunteered their time to assist in making the lab their own personal learning space.



Austin sets the bar on how to paint the trim of the Fitch STEM Lab on August 11th.

Introduction to Engineering (9th graders)

- ★ Students began the course learning about the engineering process and developed skills working through the design process, technical sketching, and product development. They learned how to sketch isometric, oblique, perspective and multi-view sketches of various object in preparation for using 3D modeling software and making their own creations.
- ★ Students started and organized the *STEM Ambassadors Program*, which focuses on introducing STEM skills and equipment to students at lower grade levels. Currently, students are going weekly to AIS and teaching 5th graders hands-on lessons. Some lessons include making circuits to light bulbs and



Matthew displays his trophy for 4th place in the NDR Championship.

turn fan blades using snap circuit kits, and investigating simple machines and how they contribute to compound machines.

- ★ Each student wrote their own article on the career accomplishments of guest speaker, Rachel Kusnic. The best article, written by Jamie Knutti, was published in this newsletter and is below. Click on the link to read the full article.



Fitch Alumni Focus on STEM

Fitch Graduate Rachel Kusnic Gives Students an Inside Look at Her Career as a Chemical Analyst
By: Jamie Knutti

Mrs. Rachel Kusnic, Austintown Fitch High School graduate of 2000, visited the Fitch STEM program on September 14th to speak of how she got to where she is in her career as a chemical analyst, and what she does in her field.

Rachel Kusnic, mother of two sons, graduated in 2000 from Austintown Fitch High School. She started her college education at Ohio Northern University, in their pharmacy program. Shortly after, Kusnic then transferred to the University of Pittsburgh, planning to make pharmaceutical drugs. After her second year of chemistry, she realized what she wanted to do; look at materials and analyze them. During her sophomore year, in the process of earning her bachelor's degree, she switched her major over to chemistry. Following this, Kusnic transferred once again, and went to Youngstown State University, for grad school and to earn her master's in analytical chemistry. [Click here to read the whole article.](#)



Nick carefully reads the assembly instructions while building robotics storage.



Robert checks the dimensions while Brandon constructs the VEX Robotics

Sidney and Cedric cleaning up after the paint has finally dried! Tearing out the tape from the trim and adding some finishing touches. The end of a hot day ended in a success and a job well



done!

practice field during their Engineering Technology Project course.



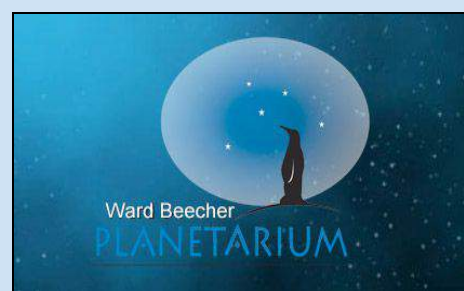
Kewan sets up his cable-car design challenge for the Introduction to Engineering Design course.

Principles of Engineering (10th graders)

- ★ The students built simple machines and subsequently compound machines and manipulated speed, distance, force and function to complete tasks. They gained a better understanding of these mechanisms through the application of theory-based calculations accompanied by lab experimentation and inquiry-based learning.
- ★ Students established roles in the classroom and have created a logo, website, and jobs in the *STEM Ambassador Program*, which is responsible for STEM outreach and teaching lessons to students at AES and AIS.
- ★ Students are researching the VEX Robotics Competition and creating a team and main design of the robot. For more information about this year's competition [click here](#).



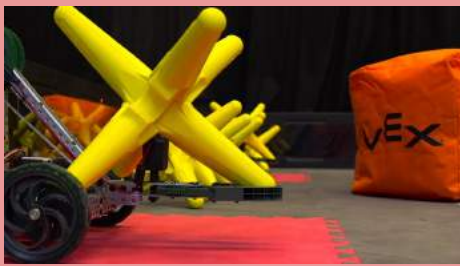
Students will be touring America Makes on Oct. 4th and 6th.. They will see advanced manufacturing techniques and 3D printing in action and speak with those in the field.



Students will be watching a show titled, *Black Holes: The Other Side of Infinity* at the Ward Beecher Planetarium at YSU on Oct. 4th and 6th.



Nick and Walter assemble the robotics storage.



Students are competing in the VEX Competition Starstruck. The mission is to toss or slide the yellow jacks and orange bean bags over or under hurdles. To sponsor the team click the link below.

[VEX Sponsorship Form](#)



Zachary, Cedric, and Justin demonstrate to their Principles of Engineering classmates how to calculate the effort force necessary to overcome the resistance force in a wheel and axle system.



Students are designing STEM T-shirts as a fundraiser to pay for field trips, robotics competition, and extra materials needed for class. Order forms will be sent home soon.

Computer Integrated Manufacturing/ Computer Science (11th)

- ★ Students are reviewing basics of programming and automation as it pertains to manufacturing and VEX robotics systems. As a prelude, they created flowcharts for modeling computer systems.
- ★ Students established roles in the classroom and have created a logo, website, and jobs in the *STEM Ambassador Program*, which is responsible for STEM outreach and teaching lessons to students at AES and AIS.

```

1  #pragma config(Sensor, in1, linefollower, sensorLineFollower)
2  #pragma config(Sensor, in2, potentiometer, sensorPotentiometer)
3  #pragma config(Sensor, in3, lightsensor, sensorReflection)
4  #pragma config(Sensor, dgtl1, limitswitch, sensorTouch)
5  #pragma config(Sensor, dgtl2, bumpswitch, sensorTouch)
6  #pragma config(Sensor, dgtl3, encoder, sensorQuadEncoder)
7  #pragma config(Sensor, dgtl5, ultrasonic, sensorSONAR_inch)
8  #pragma config(Sensor, dgtl12, green, sensorLEDTtoVCC)
9  #pragma config(Motor, port1, flashlight, tmotorVexFlashlig
10 #pragma config(Motor, port2, rightmotor, tmotorVex393_MC29
11 #pragma config(Motor, port3, leftmotor, tmotorVex393_MC29
12 #pragma config(Motor, port9, servomotor, tmotorServoStanda
13 /*!!Code automatically generated by 'ROBOTC' configuration wizard
14
15 task main()
16 {untilBump(bumpswitch,);
17 startMotor(rightmotor, 127);
18 startMotor(leftmotor, 127);
19 wait(5);
20 stopMotor(rightmotor);
21 untilBump(bumpswitch,);
22 stopMotor(leftmotor);
23 turnFlashlightOn(flashlight, -10);
24 wait(2);
25 untilBump(bumpswitch, 0);
26 turnFlashlightOff(flashlight);
27 untilBump(bumpswitch,);
28 startMotor(rightmotor, 127);
29 wait(2);
30 startMotor(leftmotor, 127);
31 wait(2);
32 startMotor(rightmotor, 127);
33

```

Brandon created his first program utilizing all types of motors and sensors. Next up, adding while loops and if/else statements.



Former Soap Box Derby World Champion, Victor LaRose, troubleshoots his compound machine.



Charles and Marcellana were all smiles showing their compound machine.



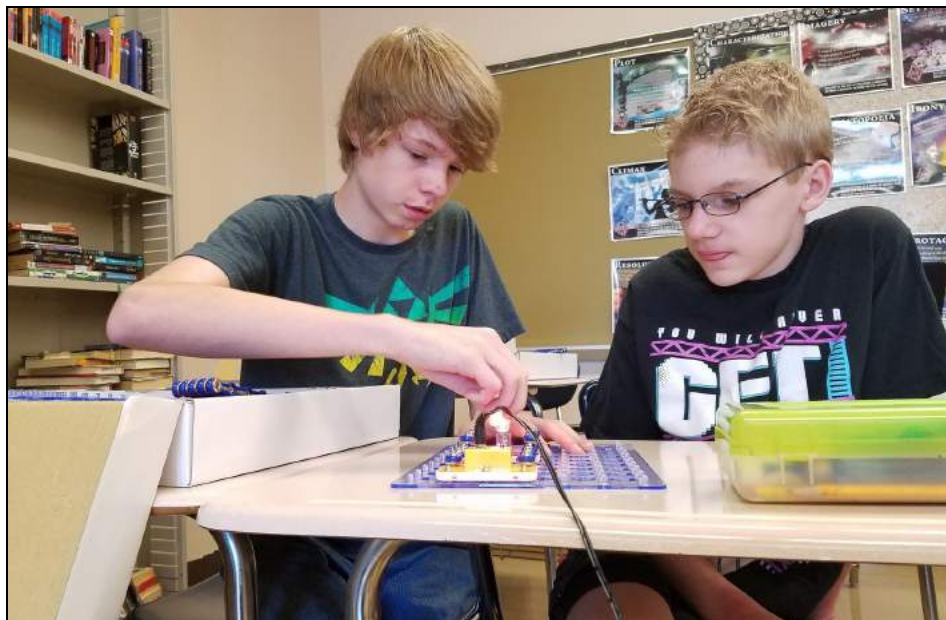
Sidney and Vlad were all smiles while Justin built their compound machine.



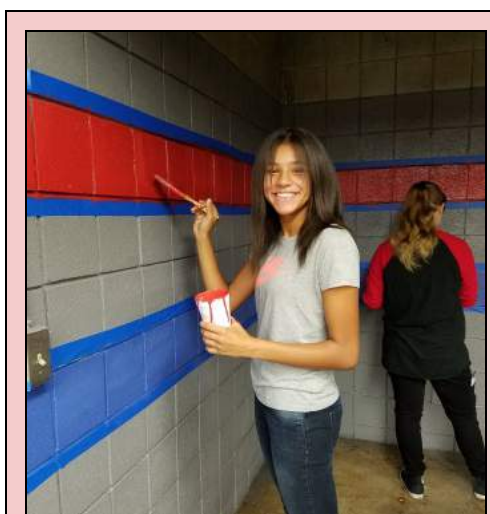
Mr. Folkwein instructs Arron and Nick on the basics of constructing using VEX.



Parents can access student's grades by logging into Progress Book. Log in information is the same as last year.



Caleb and Nathan prepare and test their circuitry lesson before teaching the 5th graders as part of the *STEM Ambassadors Program*.



Shania helps decorate the STEM Lab over the summer. Many students came and helped. It was a huge success!



VEX Competition team members, pictured from left, Will, Walter, Tylor, Jackson, and Robert brainstorm and begin building. The team name has yet to be determined. Stay tuned...

For more information contact:

District (K-12) STEM Coach

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mobile: 330.719.3421

[STEM Informational Website](#)

[Middle School STEM Website](#)

