



Austintown Fitch High School

STEM Newsletter

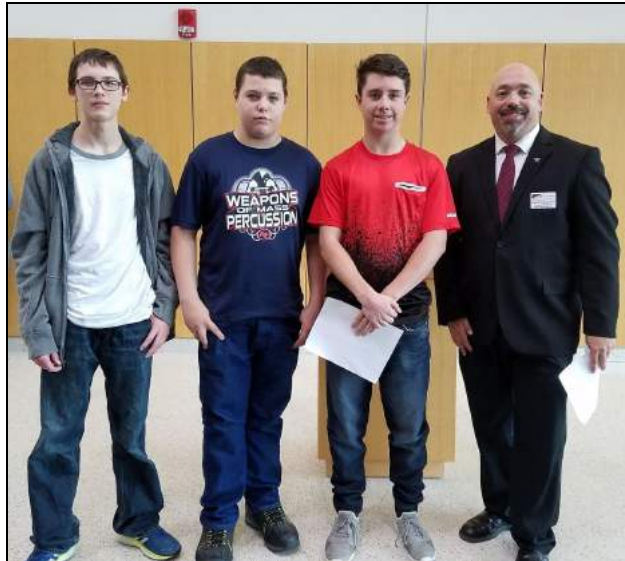


October 2017

Calendar

Nov. 3- STEM Ambassadors
(9th & 10th grades)
Nov. 8- 2 hr. Early Release
Nov. 11- Veteran's Day
Nov. 17- STEM Ambassadors
(11th & 12th grades)
Nov. 21- Conference Night
Nov. 22-24- Thanksgiving
Break

Announcing the winners of the 3D Design Competition at YSU...



Colin, Robert, Larry and Makayla received recognition for winning the 3D Printing Design Competition during YSU National Manufacturing Day.



Fitch STEM students won both 1st and 2nd place in the 3D Printing Design Competition at YSU.

Greetings,

October was a busy month in the Fitch STEM Program. Students saw advanced manufacturing techniques in action during the YSU National Manufacturing Day. We also commenced the STEM Ambassadors Program where high school STEM students visited 5th graders at AIS during their library time. It was during this time Fitch STEM students taught their younger peers about automation and robotics by bringing their competition robots.



Students and parents can access all assignments and projects via Google Classroom and PLTW.org.





Username

Password

[Create Account](#) | [Forgot Password](#) [Log In](#)

Students login to <https://my.pltw.org/> to access the curriculum and most assignments. Check it out!



Fitch STEM students showed their appreciation during this month's Lunch with a Veteran.



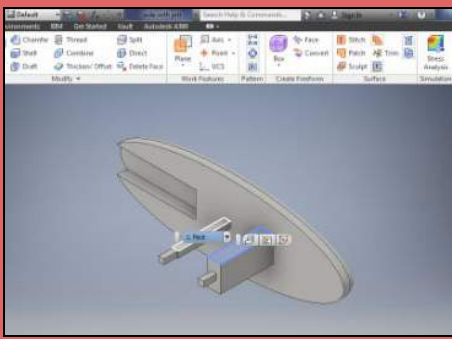
Erica was all smiles during the VEX Robotics Tournament at Perry High School on October 14th.



Students visited the Launch Lab at YSU on Manufacturing Day. It was here they got to experience first-hand additive manufacturing practices in action.



Battlebots went head-to-head at AIS during the STEM Ambassadors Program. Fitch STEM students brought the competition robots for the 5th graders to see during library time.



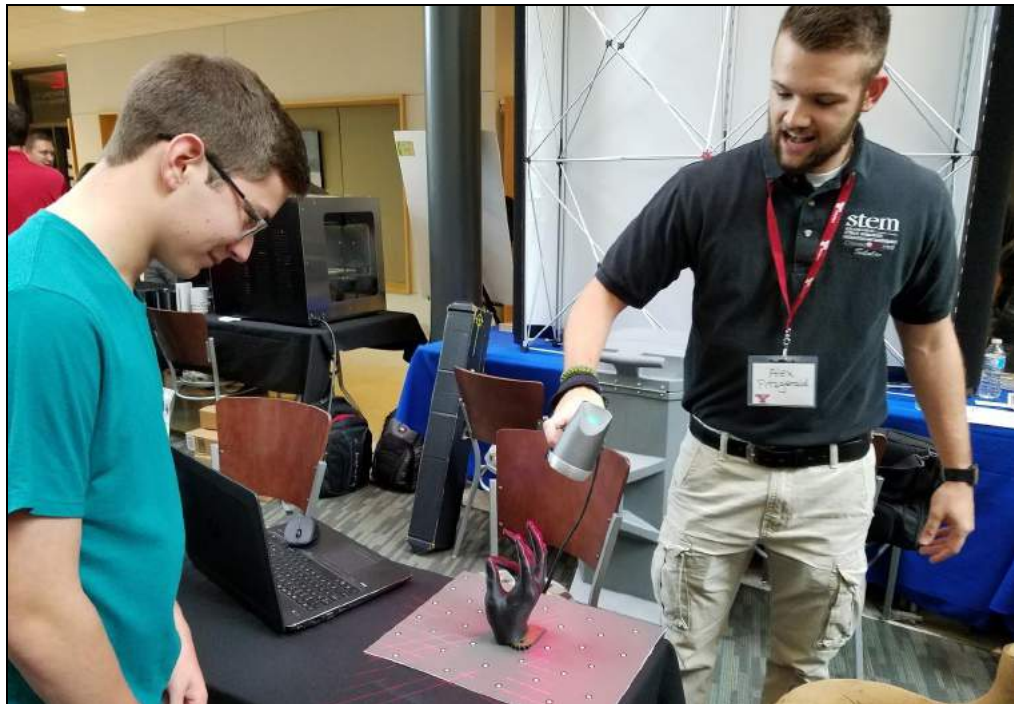
A 3D Design student created this invention intended to wrap up an Iphone cord and hold your phone in place.



Victor assists a 5th grade student in completing The Marshmallow Challenge during the STEM Ambassador Program.



3D Design and Modeling students visited the Vallourec Star booth during Manufacturing Day at YSU.



Robert watches a YSU engineering students use a 3D scanner to create a 3D printable image file. This technology is being used more and more in all fields, such as prosthetics, manufacturing, and reverse engineering



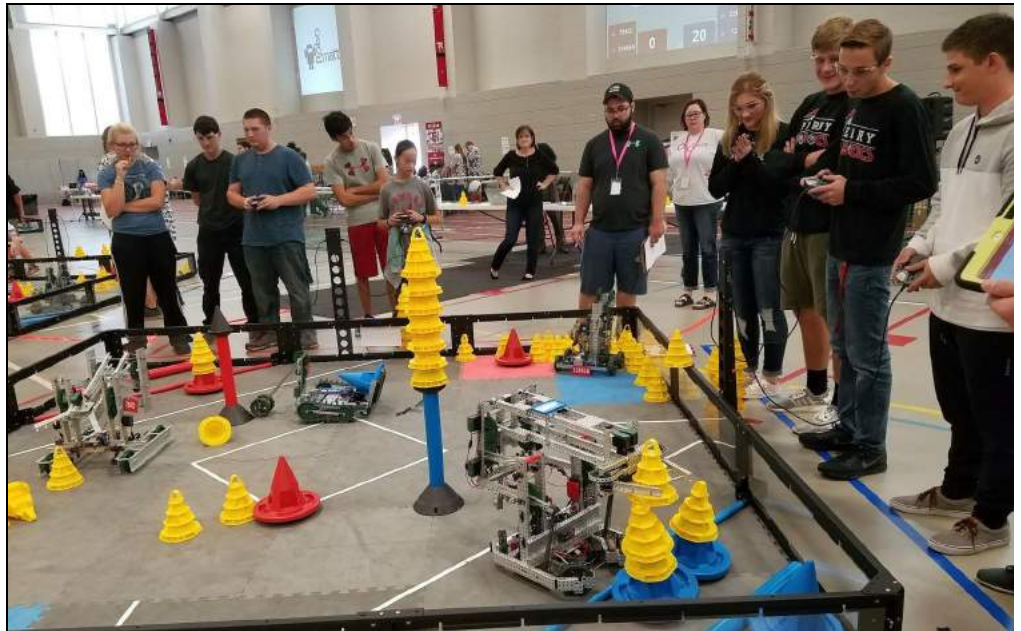
Sam got behind the wheel of a Baja car built by YSU mechanical engineering students during Manufacturing Day.



Representative from many local businesses and companies came to Manufacturing Day at YSU and spoke with students about the wonders of 3D printing and advanced manufacturing techniques.



Sandro and Nathan visited many of the demonstrations and booths displayed at Manufacturing Day at YSU.



Over 30 teams from the state competed in the VEX Tournament at Perry High School on October 14th.



Report cards will go home with students by Friday, Nov. 3rd.



Bobby strums a 3D printed guitar while assessing the quality of the acoustics during Manufacturing Day at YSU.



Ms. Chine was a musician in another life.



Battlebots invaded the halls of AIS during the STEM Ambassadors Program. Fitch STEM students brought their VEX Competition robots for 5th grade students to observe.

AIS Ambassadors Program

Fitch STEM students at each grade level (9th, 10th, and 11th) visited AIS 5th graders during their library time. They taught basics of circuitry using snap circuit kits, simple and compound machines using Vex kits, and fundamentals of programming using code.org and RobotC. The highest level of understanding is the ability to teach complex concepts simply. Fitch STEM students are able to do just that!

9th Grade

- ★ Students used the rules of dimensioning, precision measuring, unit converting, and dimensional analysis to create technical drawings in prelude to using AutoDesk Inventor 2016. Students will use this industry-utilized modeling program to create their own innovations and 3D print them.

SUCCESS IS 10
PERCENT
INSPIRATION AND
90 PERCENT
PERSPIRATION.



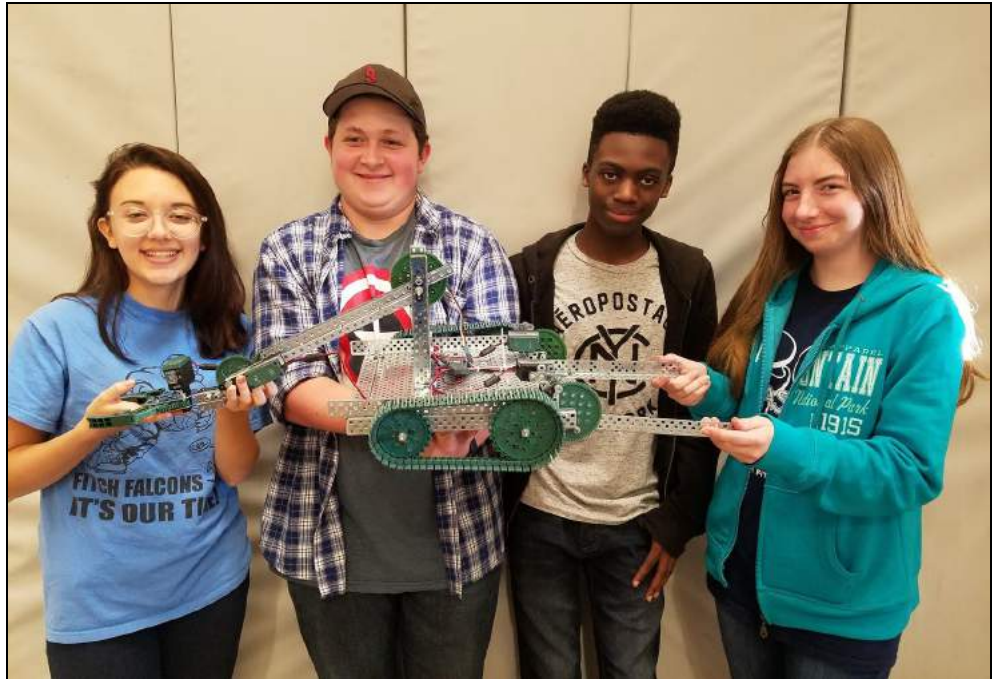
Students visited the Launch Lab at YSU Manufacturing Day.



Ms. Sroka was all smiles riding the bus from the field trip to YSU for Manufacturing Day. It was an engaging and fun-filled day in the Fitch STEM Program.



Dylan, Robert, Vlad, Robert, and Victor, also known as team, *Counter Logic*, pose with their VEX robot used for the VEX Tournament at Perry High School.



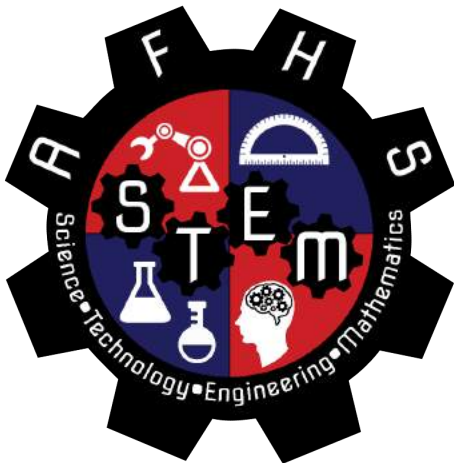
Erica, Isaac, Tre, and Hannah, also known as team, *Cosmic Guardians*, pose with their VEX robot used for the VEX Tournament at Perry High School.

10th Grade

- ★ Student finished the unit on Control Systems where students used various programming commands such as input/outputs, while loops, if/else structures, variables and functions. They will use this learned knowledge to build and program automated guided vehicles, an incoming wave of the future.



Fitch STEM students were ready and prepared during our first VEX Tournament at Perry High School. Both teams finished in the top 8 out of over 30 teams. Congratulations Teams!



Students pose with representatives from Brilex Industries during Manufacturing Day at YSU.

11th Grade

- ★ Students are learning about manufacturing processes and how the design of a product is influenced by many factors such as cost, safety and functionality. They are analyzing products and discussing ways in which they might be improved in preparation for creating their own unique inventions and innovations.



12th Grade

- ★ Students have their problem statements ready and are currently researching existing products and patents. The Community Connectors Program is matching students with prospective local companies to carry out their research projects.

Computer Science

- ★ Students are deepening their skills and knowledge using Python by combining all their learned functions such as, looping, varying inputs/outputs, and if/else statements. They are using these skills to create an online menu for a restaurant.

```
1 2 #5.10 The Next Part is Key
3 #Print the values stored under the 'Sloth' and 'Burmese Python' keys. Accessing dictionary
  values by key is just like accessing list values by index:
4 residents = {'Puffin' : 104, 'Sloth' : 105, 'Burmese Python' : 106}
5
6 print(residents['Puffin']) # Prints Puffin's room number
7 print(residents['Sloth'])
8 print(residents['Burmese Python'])
9 '''When recalling a dictionary you must give me:
10 dictionary name (dn) and the key so it print out like this
11 print(dn[key)'''
12 print('-----')
13 #5.11 New Entries
14 #Add at least three more key-value pairs to the menu variable, with the dish name (as a
15 "string") for the key and the price (a float or integer) as the value. Here's an example:
16
17 menu = {} # Empty dictionary
18 menu['Chicken Alfredo'] = 14.50 # Adding new key-value pair
19 print(menu['Chicken Alfredo'])
20 menu['Chicken Parm'] = 17.99
21 menu['Cheeseburger'] = 22.95
22 menu['20oz Ribeye'] = 42.75
23 print(menu['Cheeseburger'])
24 #DO not use append for dictionaries you do not need to
25 # Your code here: Add some dish-price pairs to menu!
26
27
28
29
```

```
Python 3.6.1 (default, Dec 2015, 13:05:11)
[GCC 4.8.2] on linux
>
104
105
106
-----
14.5
22.95
There are 4 items on the menu.
{'Chicken Alfredo': 14.5, 'Chicken Parm': 17.99,
 'Cheeseburger': 22.95, '20oz Ribeye': 42.75}
-----
{'Atlantic Puffin': 'Arctic Exhibit', 'Rockhopper Penguin':
 'Frozen Tundra'}
-----
['xylophone', 'tent', 'bread loaf']
-----
{'gold': 550, 'pouch': ['flint', 'gemstone', 'twine'],
 'backpack': ['bedroll', 'bread loaf', 'xylophone'], 'burlap
 bag': ['apple', 'small ruby', 'three-toed sloth'], 'pocket':
 ['seashell', 'strange berry', 'lint']}
```

A Computer Science 1 student’s program utilizing loops, various inputs, and outputs to create an online menu system. The picture above represents a dictionary that has a set of key value pairs and the relationship that each one has with the other. Student use this language to create their online menu.

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