



Austintown Middle School STEM Newsletter



January 2018

Calendar:

Feb. 7th: 2-Hour Early Dismissal
Feb. 15th: Parent/Teacher Conferences
Feb. 16th: No School
Feb. 19th: No School

Doodle®

Parent teacher conferences are Thursday, February 15th. Sign-ups are first come, first serve.

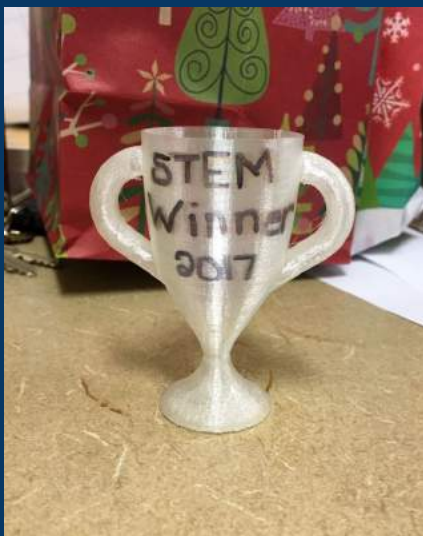
Sign up for conferences using the link in this email



7th and 8th grade STEM students running the concession stand at the annual STEM Movie Night.

Greetings Everyone,

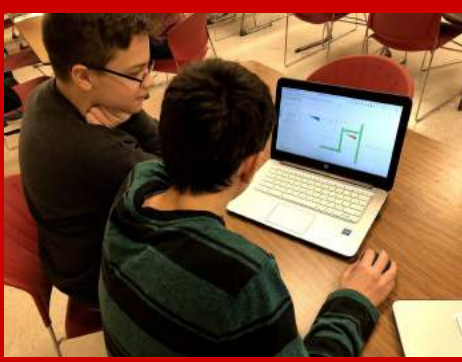
December and January were exciting months in STEM. We had a busy field trip to American Makes to see the latest innovations in 3D printing technology. Then, we headed to the Ward Beecher Planetarium where we were shown our local sky, stars, and a show on the moons in our solar system. Finally, we received an interesting tour of the Butler Institute of American Art. We also held our annual STEM Movie Night fundraiser as well as one of our regular Junior STEM meetings where 6th and 7th graders were instructed by our STEM students on using AutoDesk Inventor, ROBOTC, and Snap Circuit Kits.



Tommy won the CAD Christmas ornament design contest and pictured above is his 3D printed major award.



7th and 8th grade STEM students in front of the Butler Art Museum on our last field trip.



Zach trying to solve a puzzle that Matthew created. The puzzle needed to be solved using different transformations (translations, reflections, and rotations).



8th grade STEM students showing off the gifts they received in the annual STEM Gift Exchange.



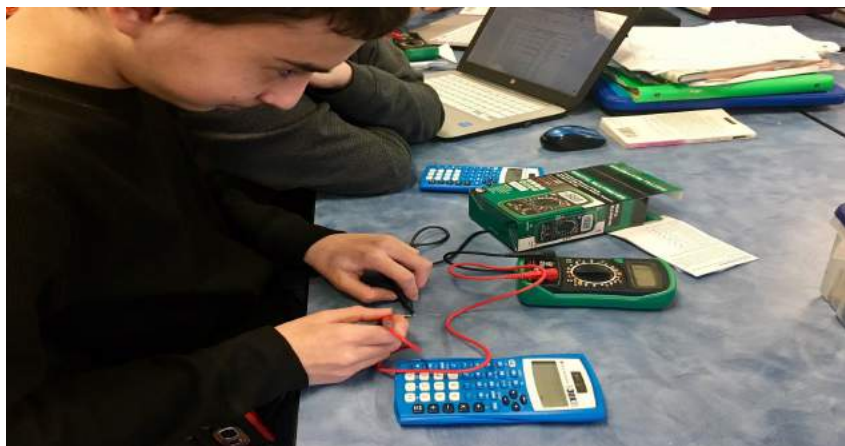
Ryan built an electromagnet, which was required to lift iron when turned on, and drop it when turned off.



7th grade STEM students showing off the gifts they received in the annual STEM Gift Exchange.



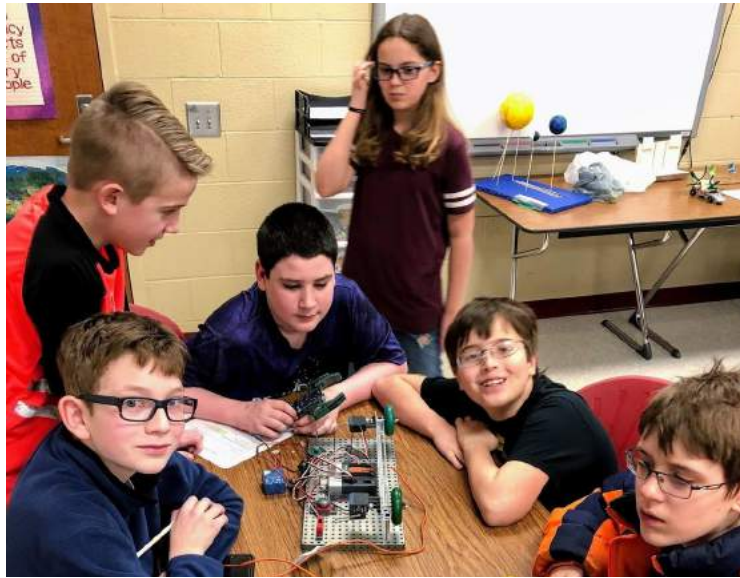
Student should be keeping up with CAD even on their Chromebooks with cloud-based programs such as [TinkerCAD](https://tinkercad.com/).



Zach testing the variance in Ohms between measured resistance after learning how to calculate resistance bands.

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learn. together.

Please check out [Schoolology.com](https://www.schoolology.com) for access to assignments and activities from class. The phone app is also very intuitive.



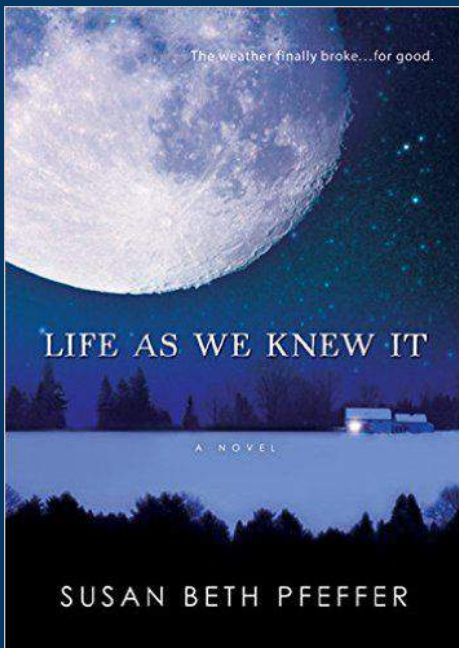
Max, Pete, Devin, and Briana showing 6th graders how their testbed is programmed during January's Junior STEM meeting.



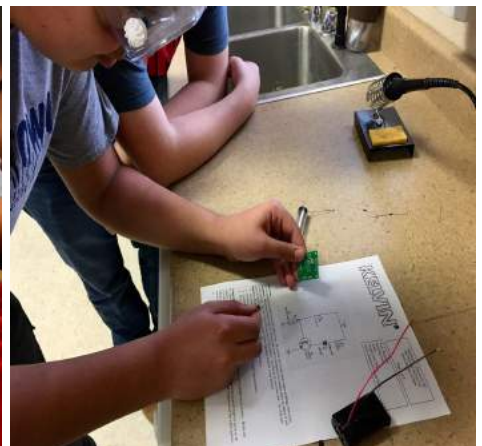
Nia and Peyden with their total solar eclipse model.

7th Grade

- ★ In December, the 7th grade STEM class began building with VEX gears and parts. They started by building several different gear mechanisms to learn the purpose of each type. Next, they were given an apocalypse scenario and 4 tasks to choose from to complete with their team. After completing this challenge, students were introduced to ROBOTC to build and program a testbed. The testbed had to run motors off of various sensors.
- ★ Our science unit was focusing on moon phases, tides, and eclipses. We concluded our moon unit with an eclipse model project. Each group researched either a total or partial solar or lunar eclipse, and built a model to represent their chosen type of eclipse.
- ★ In math we completed a chapter on probability and solving word problems. Students worked with their teams to determine the fairness of games, draw probability tables and trees, and use the 5-D Process (Describe/Draw, Define, Do, Decide, Declare) to solve complex word problems.
- ★ 7th Graders have finished *Life as we Knew it*, and will be starting *The Boy who Harnessed the Wind*, a story about how a boy from Malawi built a windmill from scrap parts to bring electricity to his home and eventually to his entire village.



7th graders have finished reading the first book of the *Last Survivor Series*, *Life as we Knew it* by Susan B. Pfeffer.





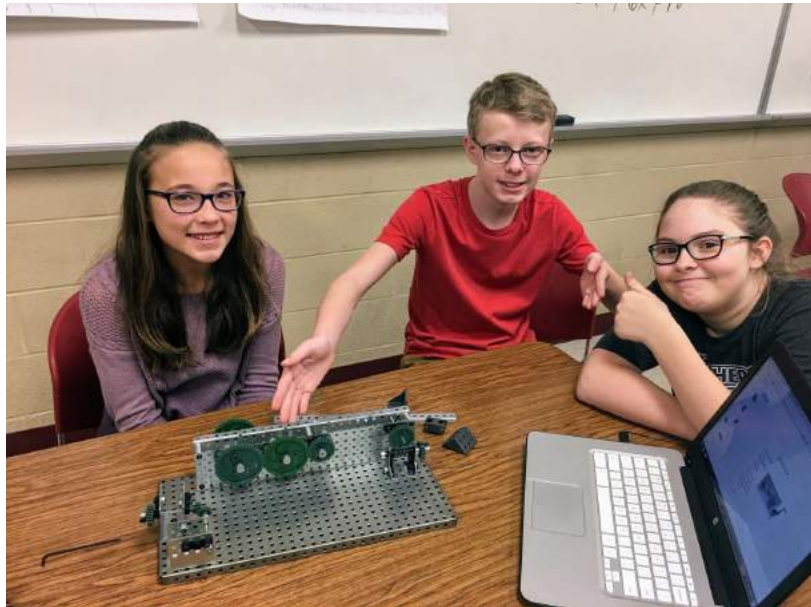
Kyle and Sebastian built a device for the survival challenge that would use one input to pump water, cut wood, and grind grain.



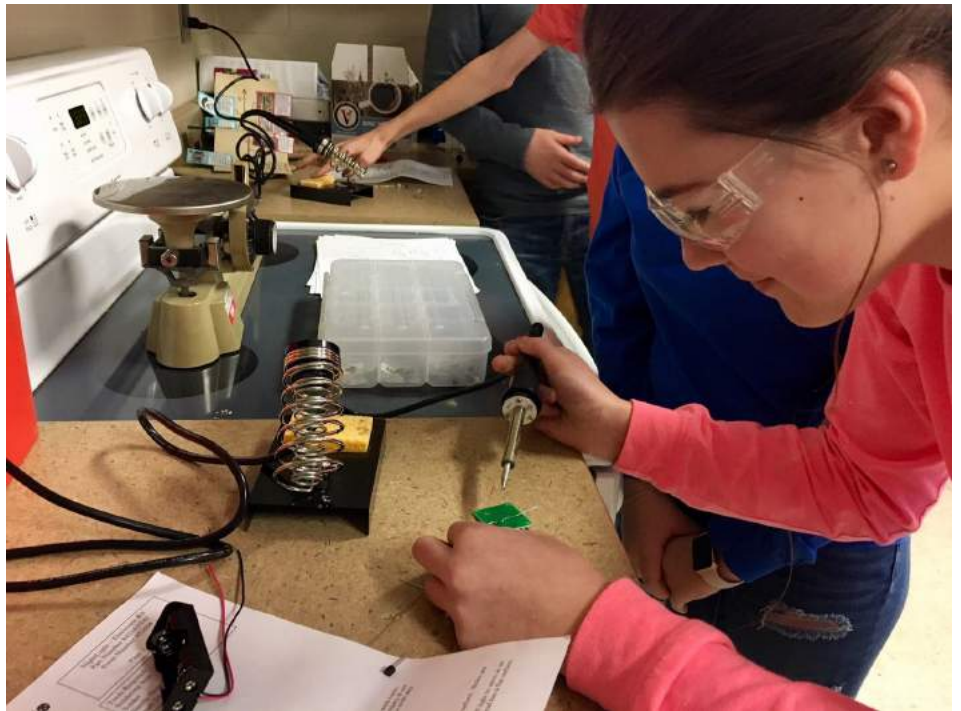
Eighth grade students have finished reading George Orwell's *Animal Farm* and have analyzed the use of allegory and satire.



Alyssa, Lillie, and Amira were able to program the claw on their testbed, the first project that requires programming.



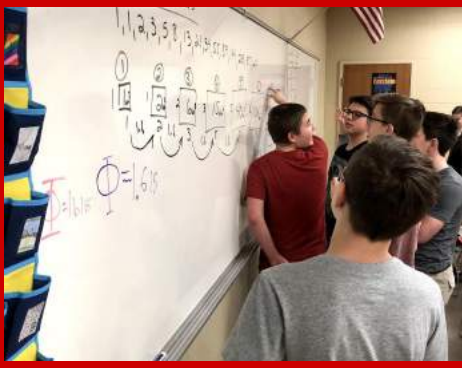
Bailey, Morgan, and Elaina showing their bevel gear, simple gear train with an idler, and worm and wheel mechanisms, which were built using VEX parts.



Maryn carefully soldering the components of her circuit board to create a functioning nightlight using resistors, a transistor, a photoresistor, and a light emitting diode.

8th Grade

- ★ We finished up the final Magic of Electronics final project in which the students had to invent or innovate something that will make life easier for people today. The only constraint is that it had to contain one or more electrical circuits and show how it works via a detailed schematic using proper symbols. We are now moving ahead in our next STEM Module, Green Architecture.



Vince, Ryan, Jon, Jaymes, and Steve working together to look for patterns in the sum of areas of Fibonacci rectangles.



- ★ The students will be learning how to measure, scale, estimate materials, design floor plans on paper as well as using professional architectural software, and also building a 3D scaled model of a building in class using scaled dimensional lumber.
- ★ In Language Arts, we finished reading and analyzing *Animal Farm*, and will be moving ahead this week to *The Giver*. Also, the students did a great job with their informative biographical speeches last month, and we are moving from informational writing to persuasive.
- ★ In science, students learned about contact and non-contact forces. There was also a bonus project to build an electromagnet, which was required to lift iron when turned on, and drop the iron when turned off. They compared the benefits and effectiveness of each, and made connections to Newton's first law of motion.



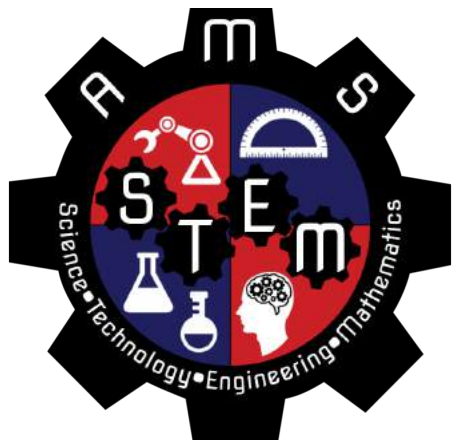
Laura with her electromagnet, which was able to lift more weight than any other design.



Learning about the newest 3D printing technology on our field trip to America Makes



Once again, Greenwood Chevy Collision Center has agreed to Sponsor and paint our three brand new Super Stock Soap Box Derby cars this year. We really appreciate it!



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