

**Advancing science, technology, engineering, and mathematics education for people of all ages.**



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**Engineer for a Day Held at SSOE**

SSOE Group, a global project delivery firm for architecture, engineering, and construction management, hosted nearly 40 students from local area high schools, including Dundee, Elmwood, and Springfield, on February 20th as part of Engineers Week. Focused on promoting entry into the engineering profession, Engineers Week takes place February 19 - 26, 2018 in locations across the United States. Engineering is one of the fastest-growing, best paid careers for recent college graduates and this growth is projected to continue into the future.



Visiting students enjoyed hands-on activities with a team of engineers and technical experts when they spent part of their day at SSOE's world headquarters in Toledo for the "Engineer for a Day" program. While at SSOE, they participated in team building activities, gained insight into the different engineering disciplines, and learned what it takes to become an engineer-and potentially an employee of SSOE.

The program began with a high-level overview of Virtual Design and

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Construction (VDC), presented by Lauren Collier, Department Manager, VDC Global Initiatives, Mark LaBell, Jr., Senior VDC Technical Leader, and Douglas Furia, Project VDC / BIM Specialist. Next, John Colley, PE, Senior Electrical Engineer, led a demonstration on electrical engineering titled, "Let's Build a Motor", which exposed students to the motor effect and electromagnetism. The day concluded with Kyle Bosworth, PE, Structural Engineer, leading an activity titled, "Construct a Building Frame", which involved students collaborating in teams to construct a building frame out of household products. The frames were then tested to resist both vertical and horizontal loads-measuring the students' creativity with various design options in a team environment, while managing a theoretical project budget and schedule.

During the program, students also learned about SSOE's student co-op / internship program. This program provides college students with resume building experience, a competitive wage, and college credits. Named a "Great Workplace" for the past 2 years by the independent analysts at Great Place to Work®, SSOE employs an average of nearly 30 co-ops / interns at any given time and provides them with scholarship opportunities and, if later hired full time, tuition reimbursement.

SSOE is committed to preparing students for successful careers by generating interest and improving skills in the STEM fields. In 2017, the firm partnered with Toledo Public Schools on a pilot apprenticeship program to engage students at the high school / pre-college level and provide them exposure to careers in engineering and architecture. For more information on SSOE, please see: [www.ssoe.com](http://www.ssoe.com).

## Community STEM in the NEWS

### Students Show Off Portable Libraries

#### Teachers from 21 countries get look at solar-powered devices

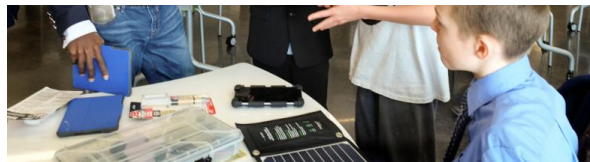
*This article was reprinted with permission from The Blade, by Zach Lemon, Blade Staff Writer*

A group of 20 Hull Prairie Intermediate school students spent about three months building portable, solar-powered learning libraries, and on Tuesday they got the chance to show those off to their schoolmates along with 21 teachers from 21 countries who were visiting for the day.

"We're just fifth and sixth-graders and we get to work with all



this tech," Blake Turner, a fifth grade student, said. "We'll be helping them as we're having fun in our classroom."



The devices, called Solar SPELLs - Solar Powered Educational Learning Library - are loaded with a variety of education content that can be displayed on any device with wireless Internet capabilities.

The Solar SPELL is not actually connected to the Internet, but for students disconnected from the Internet, it is a similar experience on a relatively low-cost device.

"They developed these really cool devices out of bare minimum things. They act as a solar-powered recharging learning library for students, and it's a resource for teachers in a third-world country," said Julie Farkas, one of the school's STEM teachers.

"Or anybody that doesn't receive an Internet connection or electricity. It could be Third World, or it could be a mountainous area anywhere in the world," Mike Lease, another STEM teacher, added.

The devices were funded through a combination of grants, one of which stipulates that the devices be shipped to educators in need. One has already been pledged to Kenya, with three more still to find their next home.

"One of our teachers here could end up walking away with one of these," Ms. Farkas said.

The technology used in that project, and elsewhere around the school, impressed Marwa Hajjej, a teacher from Tunis. She, along with the rest of the visiting teachers, are fellows in the Fulbright Teaching Excellence and Achievement program, an effort run by the U.S. Bureau of Educational and Cultural Affairs.

The program brings teachers from around the world to the United States to study how American education operates and enhance their own teaching skills.

"It's always interesting to see how teachers behave in other classrooms," said Miss Hajjej, an English-as-a-third-language teacher. She said the technology at Hull Prairie allows students to become independent thinkers who are capable of learning themselves beyond the textbook.

Aysegul Colak, an English teacher from Trabzon, Turkey, was also impressed with the technology on display Tuesday.

"I was amazed," she said. "We don't have that kind of possibility in my school."

**Photo:** High school math teacher Abayomi Abodunrin of Ibadan, Nigeria, listens to Chase Kunkel, Blake Turner, and Jack Bowe, from left, as they talk about the battery capabilities in the Solar SPELL unit at Hull Prairie Intermediate School in Perrysburg. Mr. Abodunrin is a Teaching Excellence and Achievement Fellow at Bowling Green State University.

Photo credit: THE BLADE/JETTA FRASER

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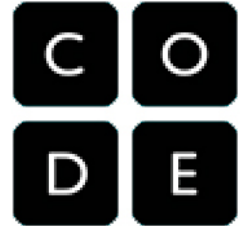
## STEM Opportunities

### Code.org Professional Learning Workshops

Workshops are available at no cost for teachers in Ohio. Applications are currently open for the [Summer 2018 Professional Learning Program](#) for middle and high school teachers.

Code.org partners with [Battelle](#), who will be running workshops July 16-20, 2018, in Columbus, with follow-up workshops on four Professional Saturdays throughout the school year.

Please see the website for more information: <https://code.org/educate/professional-learning-2018/>



### Xcite Learning hosting a Two-day Workshop on K-5 Supercharged STEM 2.0

Xcite Learning will be hosting a two-day workshop at The 577 Foundation in Perrysburg in April. The workshop is specifically designed for grades K-5 educators of STEM.



#### April 19 & 20, 2018

Explore ways to make your grades K - 5 STEM lessons Supercharged and Picture Perfect by infusing STEM inquiry and literature. Learn how to supercharge STEM lessons in your classroom using our Science, Technology, Engineering, and Design model. Participants receive an inquiry-based STEM lesson book and a hands-on science teaching "kit", and a grade-appropriate literature book. Bring a team and design a STEM experience for your grade level [team discounts available]. This workshop is PART II of the Supercharged Science workshop, focusing on STEM design challenges. [Sign Up HERE!](#)

For this workshop and others please visit: <http://www.xcitelearning.com/join-us-.html>

### GLOBE Mission EARTH Professional Development

#### GLOBE Mission EARTH (formerly known as SATELLITES)

**Who:** Career Tech Education Teachers (grades 7-12)

**When:** June 11-June 15, 2018, 8:00 am to 5:00 pm each day

**Where:** The University of Toledo, Main Campus



Teachers will learn how to use kites to collect environmental observations through the GLOBE Program and then create a visualization of the data. They will receive additional GLOBE training in the protocols and connections to NASA resources applicable to their classroom.

If you have any questions, please contact Janet Struble at [Janet.struble2@utoledo.edu](mailto:Janet.struble2@utoledo.edu)  
UT phone: 419-530-4120  
Website: <https://www.facebook.com/globemissionearth/>

## Research Experiences for STEM Educators and Teachers (RESET)

RESET provides educators with summer research experience at participating Army Laboratories across the country. Workshops are designed for High School and Upper Middle School teachers of science, math, and/or career technical education (CTE) including engineering, and other topics closely related to STEM.

Selected teachers will participate online, interacting with Army and Department of Defense scientists and engineers, as a cohort, with a subset of the cohort selected to conduct research on-site with a mentor Army scientist or engineer. At the completion of the program, teachers will be able to translate this knowledge and experience into enhanced STEM curricula.

**Applications for RESET are due April 6.**

For more information: <http://www.usaeop.com/programs/stem-enrichment-activities/reset/>

## MetroParks Toledo Summer Camp Opportunities

**Registration Now Open** for various summer camps for elementary aged students.



Please see the website for more information:  
<https://goo.gl/JYJwRF>

## ITIP Ohio Summit May 14-15

**Featuring Google for Education**

Register now for the ITIP Ohio Summit featuring Google for Education. The Schedule-At-A-Glance which includes 100+ Concurrent Sessions is available online and detailed session information will be available in mid-March. For more information: <https://sites.google.com/a/itipohio.org/google2018/attendees>

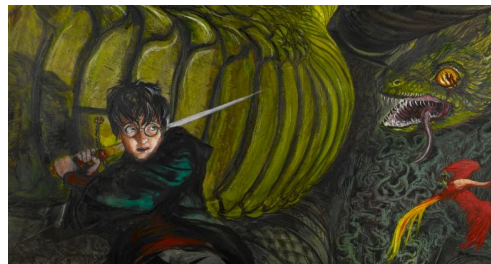


## Harry Potter For the Classroom



### Bring the Magic of Harry Potter Right to the Classroom

Google Arts & Culture has partnered with the [British Library](#) to bring the magic of Harry Potter to the classroom. This online version of a Harry Potter exhibit includes the series' original illustrations, a history of witchcraft and wizardry, fantastical beasts, and much more. Teachers and students can view over 190 items and 10 exhibits right on the Google Arts & Culture site.



Step aboard the Hogwarts Express: <https://goo.gl/QLatAH>

### Using Inquiry to Drive Authentic Research

INFOhio's FREE Professional Development webinars offers teachers ways to help students to craft researchable questions, as well as how to support students as they find the answers and synthesize their learning.



Please see the website for more information: <https://www.infohio.org/educators/pd/lwi/recordings/view/item/lwi20180308>

### EngineerGirl Ambassadors Program

The National Academy of Engineering is pleased to announce a new program to support girls and young women on the way to an engineering education. High school girls with an interest in using creativity and skills in engineering design to inspire younger students are encouraged to apply to become EngineerGirl Ambassadors via the EngineerGirl website: <https://www.engineergirl.org/61291/Ambassadors>



### Northwest Agricultural Research Station Workshop

See the latest technology on farms such as auto-steer tractors and crop sensors. Learn how farmers are using data to make sustainable decisions. Hear about current research projects in agriculture at The Ohio State University.

Each teacher will receive ready-to-use modules and access to a set of crop sensors for classroom use.



**Mon, Jul 23 and Tue, Jul 24, 2018, 8 am - 4 pm each day, lunch is included.**

Field work to include:

- collect soil samples
- observe variable rate seeded plots to study populations and the effect of different densities
- use crop sensors to measure light interception and canopy cover

This workshop is facilitated by Dr. Alexander Lindsey, Assistant Professor OSU, Agronomy and Crop Ecophysiology and Jane Hunt, Education Projects.

Ashland Credit is available, 16 contact hours or 1.6 CEUs provided.

**Questions?** Contact Jane Hunt, [jane@educationprojects.org](mailto:jane@educationprojects.org)

<https://www.eventbrite.com/e/tech-in-ag-custar-2018-registration-42575822431>

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## NWO STEM Activity

### Ice Cube Curling: Let's Explore Friction

*Curling has become a popular sport, especially with the recent Olympic Gold Medal won by the USA Curling Club. This activity is provided by the Bowling Green Curling Club:*

#### What You Need

- 2 players
- Ice Cubes (kept frozen until right before they are needed)
- A coin
- Kitchen counter top or 1 metal tray (cookie sheet)
- Small Hand Towel



#### What To Do

1. Start with a dry kitchen counter top or metal tray
2. Place a coin on the counter top or tray to act as your "house" (the target in curling)
3. Try to slide you ice cube as close as possible to the house.
4. Each player tries to get their ice cube closer to the house than the other player.
5. Predict what will happen as the ice cube is moved around on the tray with greater motion

Download a pdf of the complete hands-on activity by [clicking here!](#)

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## Share Your Story!

Thank you for your support of NWO, our programs, our activities, and our partners. Please send us updates, press releases, and news of STEM happenings at your school, district, or organization. Please submit to [nwo@bgsu.edu](mailto:nwo@bgsu.edu). We are always looking for great STEM education stories to feature in upcoming newsletters.

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