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K-16 STEM in the NEWS

"Engineer for a Day" Held with Much Success

As part of "Engineer's Week", 33 students from area high schools participated in the highly successful and tenth annual "Engineer for a Day" held last month at the Toledo engineering firm SSOE. Students participated in interactive and engaging hands-on activities, gained valuable insight on the different engineering disciplines, and learned what it takes to become and work as an engineer.

SSOE Engineers take the students through fun experiments and projects, all in an effort to expose the students to what its like to actually work as an engineer. The first project of the day was to build a tiny motor from scratch. "The kids really get into it, they are really engaged," stated Jenni Roder of SSOE.



SSOE Data / Fire / Security system specialist, Evan Baker, covered the importance and design of fire alarm systems and the intricacy of building new security technologies, as well as data center design and the inner workings of wireless networks. Students were also introduced to the role and duties of an engineering project manager. This was followed by a Lego challenge exercise where students were briefly shown a picture of a completed Lego structure, then asked to build it from that point as a team, in an effort to demonstrate project management principles and team building.



The day ended with a presentation on "What is Civil Engineering?" and "Fly with SSOE", where 3D technology and

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animation software were explored. SSOE presenters discussed their roles within the company and answered questions from students on pursuing a career in the engineering field. A female engineer also spoke with the students on the rarity and unique challenges of being a female in the engineering industry. SSOE also gave the students contact information for follow-up if they are interested in furthering their study with student co-ops or internships with the company after high school. This program provides college students with valuable resume building experience, a competitive wage, and college credits and is popular at SSOE, which employs 40 interns at any given time.

SSOE has been a part of the Toledo community for over 60 years and has grown to be the largest engineering and architectural firm in the region.

Community STEM in the NEWS

District Science Days to be Held

The 70th Annual Ohio Academy of Science Northwest Ohio District 2 Science Day will be held at the University of Toledo on **Saturday, March 23, 2013**. This is the regional science fair for students in grades 5-12 in schools from Defiance, Fulton, Henry, Lucas, Ottawa, Sandusky, Williams, and Wood counties. Students who enter District Science Day are usually the winners from science fairs held locally at their own school, county, or school district.

Throughout Ohio, sixteen different colleges and universities will host 4,000 STEM students at District Science Days, where students will display their scientific research and technological design projects on behalf of The Ohio Academy of Science. Professionals from industry, government and academia will judge students on originality and creativity, use of scientific or technological design methods, clarity of expression, knowledge achieved, and teamwork.

The district Science Days will culminate at the State Science Day on May 11, where student researchers who emerged from their district compete for \$2.2 million in awards and scholarships at the Ohio State University.

The Junior Academy Council of the Ohio Academy of Science governs the district science days in the state. The OAS is a nonprofit organization founded to stimulate interest in the sciences, to promote research, to improve instruction in the sciences, to disseminate scientific knowledge, and to recognize high achievements in attaining these objectives. The Junior Academy Council sets quotas of students who can compete in State Science Day and sets the rules for entries and judging criteria.

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STEM Opportunities

INFOhio Virtual Library

INFOhio, a virtual K-12 library, transforms teaching and learning by ***connecting educational resources with the power of information technology!***

INFOhio is a statewide cooperative school library and information network, which supports and enriches teaching and learning by providing equitable access to quality resources for Ohio's PreK-12 community of students, educators and parents. INFOhio's components include electronic resources for schools, instructional development for teachers, and school library automation - all promoting information literacy and media literacy through the use of technology.

Please visit: www.infohio.org for more information

Book your field trip now at Imagination Station for Grossology: The (Impolite) Science of the Human Body

May 18 - September 2, 2013 at Imagination Station

Sometimes it's stinky; sometimes it's crusty; and sometimes it's slimy!

Explore why the body produces mushy, oozy, crusty, scaly and stinky gunk at Grossology during its appearance at Imagination Station.

Based on the best-selling book 'Grossology', this exhibition uses sophisticated animatronics and imaginative exhibits to explain the good, the bad and the downright icky about runny noses, body odor and much more.

To book a field trip for Grossology call: **419.244.2674 ext. 250** or make a reservation online. Grossology is sponsored by The Ohio Lottery.

Visit imaginationstationtoledo.org for more information and for activities you can do in your classroom.



Build It!



Build It! is a recently opened hands-on educational center that uses Legos, K'Nex, and Duplo to motivate children to learn basic scientific principles. Build It! is located in Levis Commons, Perrysburg at 5180 Chappel Drive.



Classes are offered at 4 p.m. and 5:15 p.m. Mondays through Thursdays. Separate classes for preschoolers and their parents are at 9:15 a.m. and 10:30 a.m. Tuesdays. Build It! hosts a family fun night from at 5:30 p.m. and 6:30 p.m. on the last Friday of every month. Prices for classes start at \$8 per class or \$30 per month.

More info: <http://www.builditperrysburg.com>

Bring the Mobile FabLab to Your School!

Educators: Want to teach your students how to prototype and help them build technical skills? Consider a visit from the Mobile FabLab! What is a FabLab?

The FabLab concept-short for Fabrication Laboratory-was developed by the Center for Bits & Atoms at the Massachusetts Institute of Technology (MIT). The Lab is a technology platform for learning and innovation: a place to play, create, learn and invent. It combines high-tech production equipment with an easy user interface to help students and teachers use rapid prototyping in their STEM projects. With open-source software, FabLab users can create everything from circuit boards to furniture to microcontrollers for robots: if you dream it, you can design and produce it!



Visit: www.mc2stemhs.wordpress.com for more information.

Ohio Energy Project

Youth Energy Celebration-May 14th

Mark your calendars, it is almost time to celebrate energy education around Ohio at the Youth Energy Celebration, held at the Ohio Union at The Ohio State University. The program will run from 9:45-1:00 and lunch is included.



Visit: www.ohioenergy.org for all the details concerning the YEC. Online registration begins April 1.

EGGstreme Science at Imagination Station

Become a science EGGspert!**March 23 - April 7**

Spring into Imagination Station and explore the science of eggs. Stand eggs on end, pull eggs into a bottle and make naked eggs.

Make sure to EGGsperience these EGGciting EGGsperiments at EGGstreme Science!

Visit: imaginationstation.org for more information

122nd Annual Meeting of The Ohio Academy of Science

Hosted by The University of Findlay on April 6, 2013

REGISTRATION

by March 29th

More information: www.ohiosci.org

Elementary STEM workshops available for P-6 teachers

Kent State University, 204 Van Deusen Hall

Wednesday April 24, 2013, 5:30 to 6:30 PM (repeated Wednesday May 1, 2013)

Join us for an informal, informative evening and learn how to integrate STEM into your preK- 6 standards-based classes. Get free standards-based lessons and resources, participate in grade-level STEM activities using inexpensive materials and snack on pizza and pop as we show you how integrating STEM into the elementary school core curriculum is essential, exciting and engaging for your students, as well as easy for you to implement.

Open to all elementary educators, administrators and curriculum directors. To make a reservation or for further information, please contact Bob Claymier at 740-816-9627 or bob@stemiselementary.com by Monday, April 15 at 5 PM. The maximum number of participants for each session will be 20.

STEM Leader's Academy

Battelle's Ohio STEM Learning Network is accepting applications for its STEM Leaders' Academy (SLA). The

four-day intensive SLA is scheduled for May 2-3, 2013 in Akron, Ohio and June 25-26, 2013 in Cincinnati, Ohio. The SLA is an interactive series of workshops designed to:

- Develop leaders' concept of leadership in a STEM school
- Enhance leaders' capacity to promote STEM instructional practices across the curriculum
- Strengthen leaders' capacity to improve staff effectiveness, learning, and teaching in a STEM school
- Prepare leaders with the procedures and policies of opening a STEM school

Online [applications](#) are now available and are due **March 25, 2013**. If you have any questions, contact Stephanie Johnson at johnsonsa@battelle.org or 614-372-9045.

FREE Educator Workshop on School Violence Prevention and Response

WHEN: APRIL 17, 2013

Eligibility: All individuals in the field of education. Administrators, teachers, counselors, psychologists, law enforcement, and school support staff including, but not limited to: nurses, bus drivers, recess monitors, food service, custodial, cafeteria.

Find out more about WGTE and Fostering Healthy Communities' "Preventing Bullying = Creating Safety" initiative at <http://www.preventingbullying.org>

Upon Completion Participants Receive a Certificate for 6 Contact Hours.

Register: <http://www.wgte.org/wgte/learn/> or contact WGTE Public Media at **419-380-4634**.

Survey Help needed from 6th, 7th, and 8th Grade Science Teachers

Shakari Lige, a graduate of Bowling Green State University is pursuing a Master of Education in Reading degree and is completing an Action Research Project and is requesting help with a survey. This project aims to provide high-quality trade books that can be integrated in middle school science classrooms.

A website has been created in order to highlight these books. After viewing the website, complete the survey in order to evaluate the contents of the website. The survey is estimated to take 5 to 10 minutes.

Complete the survey by **Friday, March 22, 2013** and you will be entered in a drawing for a **\$25 gift card!** Your participation is greatly appreciated. The website link is: <http://sciencewithtradebooks.weebly.com>

Penta Career Center STEM SUMMER CAMP June 10-14

A summer career exploration career activity for students currently in grades 7 - 9 from the following districts: Anthony Wayne, Bowling Green, Eastwood, Elmwood, Genoa, Lake, Maumee, Northwood, North Baltimore, Oak Harbor, Otsego, Perrysburg, Rossford, Springfield, Swanton and Woodmore.

Registration Forms available: March 18

For more information contact: Kristie Reighard
kreighard@pentanet.k12.oh.us

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NWO Hands-On STEM Activity

Building A Model DNA

Suitable for grades 6 - 8

Objectives

1. Understand that chromosomes are structures in the nucleus of a cell that carry genes
2. Understand that genes are smaller units that contain the hereditary code, DNA
3. Understand that the genetic code is transmitted biochemically through molecules called deoxyribonucleic acid (DNA)
4. Understand the structure of the DNA molecule



Materials needed for each student

- Two 24 inch pieces of fishing line
- Eight 2 inch pieces of chenille stems (pipe cleaners)
- Eight 2 inch piece of green chenille stems
- Eight 2 inch pieces of purple chenille stems
- Eight 2 inch pieces of orange chenille stems

- Eighteen pieces of dried pinwheel pasta
- Sixteen pieces of dried ziti cut pasta
- Take home activity sheet: Crack the DNA Vocabulary Code
- Crack the DNA Vocabulary code Answer Key

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. We are always looking for great STEM education stories to feature in upcoming newsletters.

Join NWO on [Facebook](#)

Find Even More Ohio STEM Education Resources

Visit our STEM clearinghouse, nwostemresources.org, for more STEM activities, programs, and information.

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