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K-16 STEM in the NEWS

Bowling Green State University and Ohio Virtual Academy Collaborate for Student Engagement

Ohio Virtual Academy's (OHVA) high school science department teamed up with Bowling Green State University (BGSU) to bring the world of scientific research to their virtual high school students across the state of Ohio. OHVA science teacher Roger Gluckin arranged "virtual field trips" using Elluminate online technology to connect to BGSU's Marine and Herpetology Labs. Several hundred OHVA students throughout Ohio attended the live science webcasts. During these live sessions, students were able to speak directly with BGSU faculty and students. They discussed topics of interest to them relating to various ocean creatures, snakes, and reptiles. Students were able to view fish, snakes, lizards, and turtles in the lab and ask questions by voice or in live chat. In addition, a dozen or so students and their families traveled to BGSU's Herpetology and Marine Labs for personalized tours. ([read more](#))



Community STEM in the NEWS

Project pi r-squared and Community Resources Workshops

Shortly after the 2011 school year ended, 30 K-6 teachers traveled throughout Northwest Ohio experiencing STEM through baby elephants, bats, and even baseball during the first leg of a 100-hour professional development program called Project pi r-squared (Partners in Inquiry Resources and Research). The weeklong summer institute, dubbed *The Community Resources Workshop*, is an ongoing partnership among local non-profit organizations and institutions of higher education including Toledo Zoo, Toledo Mud Hens, Challenger Learning Center of Lucas County, WGTE Public Media, Lourdes College, and BGSU. The goal of the week is to introduce teachers to the myriad educational resources available to them right here in northwest Ohio. The institute also seeks to provide teachers with a sense of self and place through "teacher as student" field experiences at a variety of sites that introduce them to the rich history of innovation and invention in the Toledo area. Project pi r-squared teachers came from primarily high need schools in the region. An additional 19 teachers from area public and private schools were also permitted to join the summer institute held June 20-24, 2011. The 30 pi r-squared teachers will continue through academic year 2011-2012 with monthly professional development sessions and receive six free classroom programs provided by some of the education specialists they met during the summer institute including Toledo Botanical Garden, Imagination Station, and Sauder Village. ([read more](#))

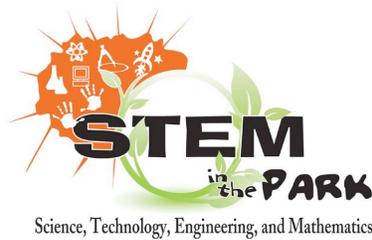


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STEM Opportunities

STEM in the Park

Bring your family and join NWO for three hours of hands-on STEM learning and fun September 10, 2011 from 10am to 1pm on the BGSU campus. Over 50 STEM hands-on activity stations from area colleges and universities and community organizations from PNC Bank to the Imagination Station will be featured at NWO's second annual STEM in the Park. The event (rain or shine) is free and includes free food, beverages, and take-home activities for kids of all ages. For more information, visit <http://www.nwocenter.org/STEMinPark/index.htm>.



Future® City Competition

In the 2011-2012 National Engineers Week Future® City Competition, sixth, seventh, and eighth graders across the country team with engineer-volunteer mentors to create their visions of the city of tomorrow. Future City combines problem-based learning with computer simulation to address real-world issues and national and state academic content standards. You can learn more and pre-register your students at www.futurecity.org; the registration deadline is October 31, 2011.

NWO Inquiry Series-PD in STEM Content

The NWO STEM Education Inquiry Series is back for the 2011-2012 school year. The series presents high quality K-12 teacher professional development in STEM content. Registration is now open for Session 1 (*Understanding the Newly Revised Standards in Math & Science* with facilitators Diane Burtchin and Michelle Shafer) to be held on September 22, 2011 from 5-8pm at Rossford High School. The \$15 registration fee includes contact hours, snacks, and hands-on materials. Register online at <http://www.nwocenter.org/inquiryseries/index.htm>.

Workshop and Reception for Educators

The Best of the Outdoors Page: Celebrating 15 years of Nature in Northwest Ohio and Beyond with Steve Pollick and Jeff Basting

On Tuesday, September 27, 2011 from 4-7pm at Secor Metropark's National Center for Nature Photography, meet Steve Pollick, The Blade's outdoor editor, and Jeff Basting, Blade illustrator/designer, who have teamed up to bring the "best of" their nationally acclaimed, award-winning Outdoors Page to book form. Breakout sessions will help you incorporate the pages from their beautiful book into your lesson plans while meeting the revised Ohio Academic Standards. The \$20 registration fee includes the Blade book, refreshments, and 3 contact hours from Bowling Green State University. For additional information, call The Blade at 419-724-6157.

To register visit: <http://www.nwocenter.org/outdoorworkshop.htm>.

New STEM Resource Center Website

NWO has recently launched an online STEM Resource Center for educators and other stakeholders interested in improving STEM education in the region.

The new resource center site at <http://www.nwostemresources.org> is a clearinghouse for STEM teaching and learning that provides the latest news and contact information regarding K-12 and higher education STEM programs, consultants, professional development, grants, lessons, curriculum, and informal education services to assist schools in finding high-quality, region-specific resources.

Healthy Water, Healthy People (HWHP)

Facilitator Workshop

When: Wednesday, August 24, 2011 from 9:00 a.m. - 4:00 p.m.

Where: BATTELLE DARBY CREEK Metro Park
1775 Darby Creek Drive
Galloway, OH 43119
(southwestern Franklin County)

HWHP is an innovative water quality education program sponsored by Project WET and the Hach Scientific Foundation, offering hands-on activity guides, testing kits, training, and much more. Recommended for middle and high school teachers, students, scout groups, 4-H, and home schooled groups. All activities are correlated to the National Science Standards and the Ohio Academic Content Standards for science and social studies.

For more information and to register by e-mail, please contact: Dennis Clement, Ohio EPA/OEE @ 614-644-2048 or dennis.clement@epa.state.oh.us.

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NWO Hands-On STEM Activity

Box Design Challenge



Grade Level: 5-10

Aligns to Ohio Common Core Mathematics Standards for grades 6 and 7

What you need:

- Examples of different shaped boxes such as Toblerone bars, Chinese food cartons, cereal boxes, unusual shaped juice cartons
- Blank sheets of construction paper or card stock
- Paper for experimenting with nets
- Protractors
- Rulers
- Pencils
- Markers
- Snack foods (enough to experiment with filling 3D boxes)

Objective:

Draw and construct representations of two- and three-dimensional geometric objects using a variety of tools

What you do:

1. Discuss the phrase *net of a solid* with your students. A net of a geometric solid is a two-dimensional (planar) figure that can be folded into a geometric solid, like a cardboard box prior to assembly. For example, we know that a cube has six sides. Each side of a cube is a square. So if we arrange six squares into a figure that can be folded into a cube, we have a net for a cube.
2. Ask students to name some types of products that come in three-dimensional cardboard box packaging.
3. Divide students into groups of 3 or 4 and give them several boxes to take apart and examine to determine their net. Ask them to (a) observe how the box was folded, (b) observe how many sides it takes to make a 3D object as opposed to a 2D drawing, and (c) notice how the size of the final folded object compares to the original size of its net.

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

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STEM Education Updates

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.

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