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The Toledo Botanical Garden (TBG) recently received a \$5,000 grant from the Tree Research and Education Endowment Fund (TREE Fund) to provide Arboriculture Education to students in the Central City Ministries Schools of Rosary Cathedral and Queen of Apostles.



This fall, students in Kindergarten through 6th grade classrooms (approximately 400 inner city students) will receive a field trip to the TBG Main Campus to learn about the "arboriculture" practices used to maintain the sixty acres of TBG gardens. The field trip experience will be tied to a grade-level correlated science standard and will include a hands-on inquiry based activity as well as outdoor exploration. Horticulturists and educators at TBG will expose students to current arboricultural practices in use at TBG as well as issues relevant to Toledo area forestry. Later this year, the TBG environmental educators will visit each classroom at both schools to provide an in-class follow up activity that will reinforce the topics presented during the field trip.

The TBG educators and Central City Ministries teachers are excited to partner with the shared goal of engaging students about the role of trees in the urban environment and to deepen their understanding of the importance of maintaining a natural balance within a healthy urban setting. The students will have an increased understanding of how trees grow and respond to cultural practices and to their environment. This will take the science activities and experiments to the next level by connecting science and text book concepts to real world learning about the importance of trees in urban culture.

The TREE Fund is a nonprofit foundation funding scientific research,

NWO Hands-On STEM Activity

education programs and scholarships related to arboriculture and urban forestry. The TREE Fund works to sustain the world's urban forests by providing funding for scientific research, education programs, and scholarships related to arboriculture and urban forestry.

[Make It! Glass](#)

Community STEM in the NEWS

Sylvania Teacher Wins Praise for Approach

Vince to receive Presidential Award

BY BRIAN BUCKEY
BLADE STAFF WRITER

Karma Vince has a phrase she likes to use to challenge her junior high math students. Think this short, wide cylinder holds more than this tall, narrow cylinder? "Convince the Vince." Think there is another way to arrive at the answer to this problem? "Convince the Vince." Ms. Vince, 61, will teach math at Arbor Hills Junior High this fall after 20 years teaching in Sylvania, most recently at McCord Junior High.

She learned that she will receive a Presidential Award for Excellence in Mathematics and Science Teaching, one of the two teachers in Ohio to receive that honor. Her hands-on approach to teaching math helped her receive the award, for which she applied in May of 2013. She pushes students in her classroom to lead discussions on different mathematical topics, rather than simply handing out work sheets for students to work through. She said she stumbled upon the phrase "Convince the Vince" one day in class, but it has become symbolic of her teaching philosophy.

"I try to get students involved in thinking," Ms. Vince said. "That's not always what kids want to do. I want them to struggle in learning the math, but not to the point of frustration. I want them to struggle because if they do, they are more likely to remember mathematical content and then also be able to apply it."

Ms. Vince said she is fortunate that Sylvania uses a district wide program called Connected Mathematics as a curriculum guide. Connected Mathematics was developed to promote an inquiry-based teaching and learning classroom environment for junior high math courses.

"It's problem centered, so I'm not just telling the students, 'Here's the procedures, here's the rules, now do it,' " Ms. Vince said. "We start typically with a problem, and then the students do some thinking and some figuring, and then the idea is for the students to come up with the rules and the procedures and the discussion and the answers."

Ms. Vince taught seventh and eighth-grade math at McCord and worked district wide in helping teachers with new curriculum for three years. She will teach seventh and eight graders at Arbor Hills in the fall.

"It's going to be a good move," she said. "There's a great team of math teachers over there that work together. That's what I'm going for is that collaboration."

Ms. Vince will receive \$10,000 from the National Science Foundation and will travel this summer to Washington to receive her award. "To me, it tells me I must be doing something right," she said. "But at the same time, I know there are lots of other teachers that deserve it as much as I do. I know a lot of other people that I have learned from and I work with that I



hope apply for it, because I know there's a lot of others that can earn it."

Photo Credit:

Karma Vince shows some of the props she uses to teach math. Ms. Vince, 61, who will teach math at Arbor Hills Junior High this fall, will receive a Presidential Award for Excellence in Mathematics and Science Teaching later this summer.
THE BLADE/LORI KING

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STEM Opportunities

Join us for STEM in the Park!

Saturday, September 26, 2015, 10:00am - 2:00pm
in the Perry Field House @ BGSU.

A free event for all northwest Ohio families and the entire community. STEM in the Park features:

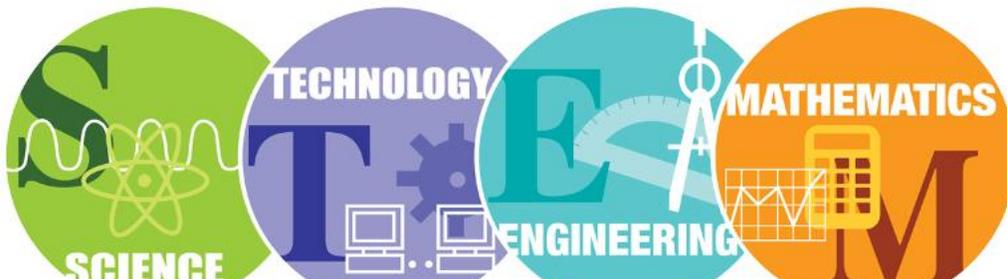
- Four hours of engaging, hands-on STEM activities from over 80 area businesses, schools and organizations,
- Free lunch and other refreshments (while supplies last),
- Free take-home activities,
- Free STEM materials, and best of all:
- Fun for the whole family!

Watch the website for pre-registration information coming soon!

Visit the website for more info at www.STEMinthepark.org



Announcing the 2015 NWO Symposium on STEM Teaching





Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching

A local professional development conference for PreK-12 teachers, administrators, pre-service teachers, college faculty/staff, and informal educator.s

Featuring a keynote presentation by BGSU Professor of Teaching Excellence, Dr. Daniel Brahier!

A passionate and dedicated educator for 27 years, Dr. Brahier continues to have a tremendous impact on mathematics education nationwide. He has written several books, including the top-selling textbook for middle and high school mathematics teacher preparation, and is the co-author of *Principles to Action*, an NCTM-published guidebook centered on mastering teaching practices with core principles for today's educators.

Dr. Brahier has taught mathematics and science at many levels during his career. He currently teaches mathematics education courses at BGSU, and serves as the Director of Science and Math Education in ACTION, a program designed to train STEM teachers in current and effective teaching methods.

Saturday, November 21, 2015 at Bowling Green State University from 8:30 AM - 4:00 PM.

Online registration is now open! [Click here](#) to for more info. and to register.

Grand Teton National Park Virtual Visit

The park rangers at Grand Teton National Park are offering a unique opportunity for distance learning. Between January and March, the park rangers welcome classrooms to "visit" the park via Skype. The rangers discuss the unique challenges animals face in the snow and cold of the park and surrounding land. Contact the park education office to schedule a time to "visit"!

<http://www.nps.gov/grte/learn/education/learning/snow-desk.htm>

Montana Geographic Alliance
208 Stone Hall
The University of Montana
Missoula, Montana 59812
www.umt.edu/mga

Mohican Outdoor School

Great resource for student trips, studies, internships, fall break activities/field trips, and programs: The Mohican School in the Out of Doors is an outdoor environmental education organization located in rural Richland county near Butler, Ohio. They have a wonderful facility and besides their own huge acreage and sites for field and other studies, they are right next to Mohican State Park, Malabar Farm, and other similar areas.



<http://www.mohicanoutdoorschool.org/>

The National Council of Teachers of Mathematics Grant Programs

NCTM is accepting Applications for Music Projects to Teach Pre-K-2 Mathematics:

The purpose of this grant is to incorporate music into the elementary school classroom to help young students learn mathematics. For 2016-17, grants with a maximum of \$3,000 each will be awarded to persons currently teaching mathematics in grades Pre-K-2 level. This award is for individual classroom teachers or small groups of teachers collaborating in one grade or across grade levels. Any acquisition of equipment must support the proposed plan but not be the primary focus of the grant. Proposals must address the following: the combining of mathematics and music; the plan for improving students' learning of mathematics; and the anticipated impact on students' achievement.



<http://www.nctm.org/Grants-and-Awards/grants/Using-Music-to-Teach-Mathematics-Grants/>

NCTM is accepting applications for its Teacher Professional Development Grants for Grade Pre-K-5 Teachers program.

Grants of up to \$2,000 will be awarded to one or more individuals currently teaching at the pre-K-5 level for professional development plans aimed at improving teacher competency and student learning. While the grant does not fund the purchase of technology, proposals that include professional development involving the use of technology to enhance student learning are encouraged. Any acquisition of equipment must support the proposed plan but not be the primary focus of the grant.

<http://www.nctm.org/Grants-and-Awards/grants/Mathematics-Course-Work-Scholarships-for-Grades-Pre-K-5-Teachers/>



EmergingEdTech

Engaging students and enhancing learning outcomes with Internet & Instructional Technologies

Emerging Ed Tech presents: Six Excellent YouTube Channels Created by Inspired Teachers for Outstanding Math, Science, Art, History, and Social Studies Content for Flipped, Blended, or Traditional Classrooms!

<http://www.emergingedtech.com/2015/07/best-youtube-channels-created-by-teachers/>

Target Field Trip Grants

Target Corporation is accepting applications from education professionals for the Target Field Trip Grants program, an annual program designed to expose K-12 students in the United States to museums, historical sites, and cultural organizations. Grants are intended to fund visits to art, science, and cultural museums; community service or civic projects; career enrichment opportunities; and other events or activities away from school grounds. More than 3,600 grants of up to \$700 each will be awarded in January 2015. Grants are available to applicants from the U.S. for field trips taking place between February and December 2015. Funds may be used to cover field trip-related costs such as transportation, ticket fees, food, resource materials, and supplies.



<https://corporate.target.com/corporate-responsibility/grants/field-trip-grants>

EDUTOPIA

The Big List of Educational Grants and Resources is a comprehensive "roundup" of educational grants, contests, awards, free toolkits, and classroom guides aimed at helping students, classrooms, schools, and communities. Check this page weekly to get the latest updates!

<http://www.edutopia.org/grants-and-resources>

DiscoverE Collaboration Grant

Designed for the launch of a new engineering outreach program or innovative

DISCOVER

ideas to improve an existing program or event, the **DiscoverE Collaboration Grant** provides \$1,000 to fund programs led by a diverse team of at least three partnering organizations that are inspiring and engaging youth with hands-on learning experiences (particularly underserved K-12 students). Applications accepted on a rolling basis. College students, working engineers, educators and volunteers are welcome to apply.



<http://www.discovere.org/about-us/collaboration-grants> for more information and to apply online!

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NWO Hands-On STEM Activity

*This month's STEM activity features one of the many exhibitors that will be at this year's **STEM in the Park**. More fun activities from STEM in the Park can be found on our website at: www.nwocenter.org/STEMinPark*

Make It! Glass

This month's Hands-on Activity is from Toledo Museum of Art

What's the Activity?

Students will simulate glass making with a sugar mixture and have the opportunity to observe that heat and energy are required to make glass. Since ancient times, glass has been manufactured by heating a sand/lime/soda mixture, and then slowly cooling it.



Materials:

- * 2 cups sugar
- * 1/3 cup light corn syrup
- * 1/3 cup water
- * 2 tsp. vinegar
- * Nonstick cooking spray
- * Electric frying pan or hot plate and pan
- * Sheet of glass
- * Candy thermometer

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.

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Find Even More Ohio STEM Education Resources

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

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