

STEM

News You Can Use . . .



January 2014

STEM Daughter-Parent Event at Argonne

Approximately 150 students and parents attended the annual STEM Daughter-Parent event on November 15 at Argonne National Laboratory. Participants learned about STEM careers and attended breakout sessions in which students worked on a design project and parents shared ideas about supporting their students' interest in STEM. Thanks to Argonne for hosting the event, the Argonne staff for supporting the event, and the Downers Grove AAUW for assisting.



Photos from the November 15 STEM Daughter-Parent Event at Argonne National Laboratory

DuPage STEM Jobs Report

STEM related jobs continue to offer many employment opportunities in DuPage County. What areas top the list and what salaries do these jobs offer? Read more at <http://www.dupageworkforceboard.com/career-readiness/science-technology-engineering-math-education.html>

Educator Lists Free Math Apps to Help Increase Student Engagement

Educator/blogger Monica Burns shares a list of free iPad applications that math educators can try out in their classrooms, including apps that can help teach time, angles and decimals. "Whether you're modeling a lesson, creating stations or working in a one-to-one classroom, virtual tools can promote student engagement while increasing academic success," she writes. <http://www.edutopia.org/blog/11-virtual-tools-math-classroom-monica-burns>

Math Does Not Have to be Boring

Are students turned off to STEM because of their school experiences? Learn more: <http://www.nytimes.com/2013/12/08/opinion/sunday/who-says-math-has-to-be-boring.html>

STEM Connector website

USInnovation.org was created to advance the STEM agenda through news, data and research. Find interesting information and links: <http://www.stemconnector.com/>

Coming Events

February 9, 2014, 1 to 5 p.m. Fermilab Family Open House

Join us for this party for children who bring an adult with them. Learn about the world of physics and tour the Cockcroft-Walton accelerator, linear accelerator gallery, and Main Control Room. Explore physics concepts with hands-on activities. Ask a scientist your physics questions. Enjoy exciting science demonstration shows. The open house is most appropriate for families with children in grades 3 and up with tours restricted to those ages 10 and up. The program is free, but registration is encouraged. Contact edreg@fnal.gov (preferred) or 630-840-5588. More information <http://ed.fnal.gov/openhouse>

February 15-16, 2014 – 11:30 a.m. – 5 p.m.

Visit the Fermilab Education Office at Family Science Days at the AAAS (American Association for the Advancement of Science) Annual Meeting

Family Science Days are FREE and open to all. Explore interactive science exhibits, learn about cool science jobs, and have your questions answered by scientists! This free community science showcase features hands-on demos, shows, and other activities appropriate for K-12 children and their families. Hyatt Regency Chicago, 151 East Wacker Drive, Chicago, IL. <http://meetings.aaas.org/public/family-science-days/>

February 17, 2014, 10 a.m. to 12 noon, ROE STEM Open House

This free event is open to 5th through 8th grade students who must be accompanied by a parent or guardian. Flyers and registration form will be emailed in January to newsletter recipients and parents who attended the November 15 event. Register early to ensure your spot. Contact Mary Biniewicz for more information: mbiniewicz@dupage.k12.il.us

February 22, 2014, Engineer's Week Celebration, IIT-Rice Campus, Wheaton

Fun, free, family interactive event providing children and adults the opportunity to experience and explore the many fields of science and engineering through interactive displays and presentations. The 30th Annual Engineers Week Expo is geared toward children in K-8th grade, however, all ages will enjoy the event! <http://www.dupageeweek.iit.edu/>

Resources

Benedictine Degree Program

Benedictine University, in partnership with Brookfield Zoo, Fermilab, the Forest Preserve District of DuPage County, Morton Arboretum, and the Golden Apple Foundation, offers a Master of Science degree in Science Content and Process. The program provides K-9 teachers and other science educators integrated content knowledge in general science utilizing the resources of the local scientific community. This program is intended for teachers who want to increase science knowledge and confidence in science teaching and addresses content and pedagogy expectations of the NGSS. See <http://www.benuscience.org/msscp/index.php> for more information or contact Allison Wilson at awilson@ben.edu.

University of Illinois Extension Offers Incubation & Embryology for School Classrooms

What is more fascinating than seeing a fully developed baby chick emerge from an egg? Just 3 weeks of incubation transforms a seemingly lifeless chicken egg into an active, living being. During the 21-day incubation period, students learn to prepare eggs, set up an incubator, record progress, turn eggs, and test eggs for fertility. The project aligns well with the NGSS. For information about costs, teacher training registration and fertile egg order: <http://web.extension.illinois.edu/dkk/embryology/>. Questions? Contact Pat Luster, pluster@illinois.edu or 630-955-1123.

NSTA STEM Classroom Newsletter

The December issue presents a "sound" lesson and dissects the lesson into all four STEM components. For details: http://www.magnetmail.net/actions/email_web_version.cfm?recipient_id=1168659052&message_id=3155584&user_id=NSTA&group_id=807751&jobid=15957086



STEM

News You Can Use . . .



March 2014

Nevada Becomes Ninth State (+DC) to Adopt the NGSS

The Nevada State Board of Education adopted the Next Generation Science Standards, making it the ninth state and Washington D.C. to support the new standards. Learn more in this [Education Week blog post](#).

NAE Report Examines STEM Integration in K-12 Education

The report, *STEM Integration in K-12 Education*, references approaches to formal and out-of-school STEM education and research regarding the impact of an integrated approach. A [short animated video](#) explains STEM and potential advantages and challenges of integration.

Engaging Girls in STEM: Tinkering

Learn about the challenges of engaging girls in tinkering, proposed solutions to these challenges, and ideas about how to assess tinkering projects, and promote tinkering in specific fields. http://www.laurelschool.org/about/documents/CRG_TINKERING.pdf

Spell Success with S-T-E-M: Science, Technology, Engineering and Math

Some say the U.S. can regain the competitive edge in education with the use of a training plan not unlike that of the American athletes who recently competed in Sochi. [Read more here](#).



Photos from the February 17 STEM Open House at the Technology Center of DuPage

DuPage Science Teacher Receives STEM Award

Jeff Grant, science teacher at Downers Grove North High School, was recently announced as one of five recipients of the 2014 PASCO STEM Educator Award. A portion of the award includes several Pasco probes and sensors that Jeff will use to advance STEM learning with his students. Congratulations!

Coming Events

Climate Change Workshop, June 18-20 at Purdue University

This NSF sponsored Climate Change workshop at Purdue is limited to 60 people – the first 40 get free housing (principal's letter required). The \$25 registration fee includes food and materials. For more information; <http://content.des01.com/vo/?FileID=e1d1e5d8-875f-4966-94e2-07bb1c291d09&m=27b9e4ae-0be8-4413-8043-58ee22a6f29c&MailID=28137760&listid=70611> or contact Cindy Fate, cynthia@purdue.edu or 765-494- 5146.

“Energy Slam” on April 3, 2014; 6:30 p.m. Reception and Poster Session; 7:00 p.m. Talks, Voting, Q & A at Argonne

Four Argonne researchers will each have 10 minutes to state their case for a different energy source – wind, solar, nuclear and biofuels. At the end of the presentations, audience members will decide which researcher made the most persuasive case. [More . . .](#)

Wonders of Science (Grades 2-7) on April 6, 2014; 1:00 - 2:00 p.m. at Fermilab

Award-winning high school chemistry and physics teachers will present a fast-paced series of demonstrations on chemical and physical phenomena to involve you and your young scientists mentally and at times, physically! Portions of this show have been seen on many national television broadcasts including Inside Edition, the CBS Evening News, and David Letterman. The presenters are master science teachers who have been recognized locally and nationally for their ability to reach young minds. Tickets: \$4.00/person (nonrefundable). <http://ed.fnal.gov/events/wos>. Contact edreg@fnal.gov (preferred) with questions.

STEM High School Career Expo on April 23, 2014; 5:30 - 8:30 p.m. at Fermilab (Wilson Hall)

High school students from Kane and DuPage Counties are invited to meet scientists, engineers and technicians from many STEM careers. Ask career questions of the experts. Attend panels to learn more. The program is free with no registration required. For more information, send e-mail to edreg@fnal.gov. <http://ed.fnal.gov/programs/careerfair/>

Resources

Scholarship Program for Community Stewardship Projects

The Illinois-Indiana Sea Grant (IISG) EMPOWER Scholarship provides \$500 to plan and implement a community stewardship project focused on local watershed issues and is available to Illinois and Indiana grade 4-12 educators. Applications will be accepted until April 30. For more information: <http://lakesideviews.blogspot.com/2014/03/new-scholarship-program-offers.html>. Learn more about upcoming training opportunities and classroom resources: http://www.iisgcp.org/education/topics_education.html

Energy Is Elementary with KidsActOnEnergy

Free K-8 teachers' guides provide standards-based lessons that easily integrate into the regular curriculum. The website also offers games, videos and fun facts about energy with a focus on energy efficiency. Order materials online at KidsActOnEnergy.com.

Fermilab Scholarships for Teachers and Schools

Funding for teacher professional development and engaging activities and enrichment classes for students can be challenging. [Fermilab Friends for Science Education](#) offers scholarships for teachers to attend summer workshops, field trip transportation expenses, and families for student enrichment classes held at Fermilab. Apply online. Deadline is March 28, 2014. http://ed.fnal.gov/ffse/ed_ffse_scholarships.html

Illinois Department of Natural Resources

IDNR has added to its website at <http://dnr.state.il.us/education/standards.htm> new lessons based on the Next Generation Science Standards (NGSS). New topics include: Mammals - grades K-3; Fossils - grades 3-4 and middle school; Trees - grade 1. Visit often as lessons will be added as they are completed.

Illinois Summer Research Academy (ISRA) for High School Students - July 13-18, 2014

High school students will spend a week with ISU professors working on various hands-on research projects and/or working with peers on their own research projects. Research Opportunities include: Arts Technology, Biology, Biochemistry, Chemistry, Computer Mapping and GPS, Computing and Information Technology (IT), Criminal Justice Sciences, Mathematics, Physics, and Technology. Scholarships are available! The application is due May 2, 2014. For information <http://cemast.illinoisstate.edu/students/high-school/summer-academy/>

Benedictine Offers M.S. in Science Content and Process

The program is designed for K-9 teachers and other science educators. Participants will use inquiry-based learning and technology to create an effective learning environment for science education. More information at http://www.ben.edu/academic_programs/majorsheets/upload/MSSCP_Trifold_2013.pdf



STEM

News You Can Use . . .



June 2014

Maryland's Strategy Brings STEM Education to Younger Students

The state's comprehensive strategy is intended to make Maryland the nation's STEM education leader and improve instruction. <http://www.ed.gov/edblogs/progress/2014/03/race-to-the-top-boosts-stem-in-maryland-early-grades/>

Importance of STEM Mentors

STEM mentoring can take on many forms. Unfortunately for many students such opportunities are too few in number. <http://www.usnews.com/news/stem-solutions/articles/2014/04/24/the-crucial-role-of-mentors-in-stem>

Survey shows STEM interest on the rise

College enrollment in science, technology, engineering and math fields is growing, according to a recent study. Based on a national survey of college freshmen, 28.2% in 2011 said they planned to major in STEM, up from 21.1% in 2007. Researchers found that business and education majors have declined by nearly 6%. <http://www.insidehighered.com/news/2014/04/07/study-finds-increased-stem-enrollment-recession#sthash.nsxg6mLo.dpbs>

Congratulations to Dr. Meg Van Dyke, Golden Apple Award Recipient

Selected from 620 nominations and 272 applicants representing 4th through 8th grade teachers throughout the Chicago area, Van Dyke, 48, was surprised with a Golden Apple Award for Excellence in Teaching on May 7 in her classroom. Read more: <http://www.mysuburbanlife.com/2014/05/13/oneill-science-teacher-surprised-with-golden-apple-award/agl7mw6/>



Westmont Jr. High students enjoy STEM Night activities on March 13

Coming Events

Chicago Botanic Garden offers Summer Staff Development

Explore opportunities like "STEM in Your Neighborhood" and "Field Research for Educators." For additional information, go to <http://tiny.cc/hj93dx>

3rd Annual Technology Day: A Modern Story, August 18, 2014 at St. Xavier University

Calling faculty, K-12 educators, staff and administrators from the Chicago area who are interested in exploring K-20 education innovation. A dynamic lineup of speakers with a common message of innovation: Alan November, Dr. Theresa Dunkin, Superintendent, CCSD 102, Stephen diFilipo, and Bernard Robin. Interested in presenting? Proposals will be accepted until July 1, 2014. [Submit your proposal today](#). The \$40 registration fee includes breakfast, lunch and end-of-day reception. For more information, please visit the [Technology Day](#) web page. Direct questions to cidat@sxu.edu.

2014 Tech Savvy Conference – November 15, 2014

Tech Savvy is a daylong science, technology, engineering, and math (STEM) career conference designed to attract girls in sixth through ninth grade to these fields and to inform families about STEM education and career opportunities. The Chicago Tech Savvy Conference will be held at IIT Rice Campus in Wheaton on Saturday November 15, 2014. The registration fee is \$5 which covers breakfast, lunch and all activities. Registration for the event will open September 1, 2014. For more information: <http://www.slideshare.net/kateskegg/tech-savvy-flyer-chicago-il-2014>

Resources

Dart Foundation Education Grants

The Dart Foundation awards grants for youth education programs, with an emphasis on science, technology, engineering, and mathematics. This private family foundation also provides grants to support projects and programs in health, community services, and journalism, with a specific focus on accurate coverage of science and the environment. <http://www.dartfoundation.org/web/dartfweb.nsf/pages/index.html>

New Tool Released to Help Educators Assess Alignment of Materials to NGSS

The Educators Evaluating the Quality of Instructional Products (EQuIP) Rubric for science provides criteria for measuring alignment and quality of lessons and units with respect to the NGSS. [Click here](#) to view and download the rubric and other resources from the NGSS@NSTA Hub, or view it on the [official NGSS](#) site. Read more about the rubric and what it means for teachers in a [blog post by Joe Krajcik](#), professor of science education, director for the CREATE for STEM Institute at Michigan State University, and one of several NGSS writers, developed the EQuIP Rubric for Science. NSTA has formed a group of 55 curators who are using the rubric to identify resources that support the standards.

51 Tools to Support BYOD Programs in the Classroom

A bring-your-own-device program has been adopted for the classroom. Now what? In this blog post, Vicki Davis, a teacher and IT integrator in Georgia, suggests 51 tools that can be used now in a BYOD classroom. Among them are Socrative and other mobile applications designed for formative assessment, Screencast-O-Matic and similar screencasting tools and content-sharing platforms, such as Sophia. [Edutopia.org/Vicki Davis' blog](http://Edutopia.org/Vicki-Davis-blog)

Investigating Ice Cream and Water Toys

Summer conjures up thoughts of cookouts and warm-weather treats such as ice cream. Capture students' interest by delving into a lesson on endothermic reactions through Sarah Young's "Cold Milk" activity from [Gourmet Lab: The Scientific Principles Behind Your Favorite Foods](#) (grades 6–12). You can also explore the engineering angle on a common summer toy in the lesson "What Makes a Squirt Gun Squirt?" from Richard Moyer and Susan Everett's [Everyday Engineering: Putting the E in STEM Teaching and Learning](#) (grades 6–8).

Putting the "E" in STEM

[Engineering Essentials for STEM Instruction](#), an ASCD Arias™ publication, provides ideas and strategies for incorporating engineering into lessons. Designed to be read in one sitting, learn how to use engineering to engage students in hands-on, collaborative projects; encourage students to apply content-area knowledge and skills; focus STEM instruction on real-world problem solving. Sample lesson, links to additional resources, guidelines for assessment, and more. [Order online](#) or by phone, 1-800-933-ASCD (2723), press 1.





News You Can Use...

Congratulations to Laura Riley, 6th Grade Science Teacher at Westmont Junior High School

Laura was selected to participate in the 2014 - 2015 Science Master Teacher Project. With the NEA Science Master Teacher Project, BetterLesson is bringing the Master Teachers' curriculum and practice within reach for every teacher. Laura is one of only 65 science teachers selected in the U.S. to create knowledge regarding effective science teaching.



Why STEM Is Important

An increased interest and understanding in mathematics and science improves our ability to solve problems (engineering), leading to inventions and innovations (technology) <http://cemast.illinoisstate.edu/educators/stem/index.shtml>.



Study: Pro-social Mindset May Help Improve Math, Science Grades

Researchers are testing an academic-mindset intervention that involves asking students to tie their learning to larger, pro-social goals. In one pilot, the researchers found that students who connected their learning to a bigger purpose improved their grades in math and science. KQED.org/Mind/Shift_blog



Minnesota District Blends STEM Across All Academic Subjects

Minnesota district integrates science, technology, engineering and math into all subject areas. District STEM coordinator Tom Meagher said it can be amazing "when kids see the real applicability in what they learn to what's going on in their life." http://www.southernminn.com/owatonna_peoples_press/article_00fe5083-4d09-5878-87c9-2bd492c7932a.html

Ice Cream that Changes Colors?

You bet. But don't get your hopes up – it is still experimental. Read more about the invention of the Spanish physicist. http://sploid.gizmodo.com/scientists-invents-ice-cream-that-changes-color-as-you-1612539292?fb_action_ids=10203442244131030&fb_action_types=og.likes



STEM Everywhere: Science, Technology, Engineering, and Math in the Real World (EduTopia)

Explore STEM education in settings beyond the classroom walls, and see how opportunities to learn science, technology, engineering, and mathematics are all around us. From science-based internships, to student-run maker-spaces, to after-school activities, STEM is everywhere. [Read more here.](#)

Upcoming Events

STEM Resources Boot Camp. The DuPage Regional Office of Education will host a workshop for middle school educators and administrators that focuses on building a repertoire of STEM resources available in our area. For more information and to register: <https://www.dupage.k12.il.us/register/course.php?recid=6028>

Brookfield Zoo – Classes for Teachers. Fall and Early Winter 2014/ 2015 classes carry optional graduate credit and address the Next Generation Science Standards. Topics include Weather and Climate, Animals of the Night, Animal Travelers, Science Stories, and Animal Behavior and Training. To register: www.czs.org/teacher-classes. For questions, please contact Lanis Petrik at 708-688-8372 or Lanis.Petrik@czs.org; or Julie Wozniak at 708-688-8367 or Julie.Wozniak@czs.org.

National Geographic Professional Development. National Geographic is offering teachers free online professional development courses to learn about water as a resource and how to facilitate learning through outdoor watershed education. "FLOW Education: Facilitating Learning through Outdoor Watershed Education" (Sept. 17-Oct. 29) is designed for classroom teachers of grades 4-9 to learn about watersheds and outdoor education using the Chesapeake Bay watershed as an example. Sign up at www.coursera.org/#course/watershed. "Water: The Essential Resource" (Oct. 15-Dec.17) focuses on both ocean and freshwater subjects and provides strategies for teaching environmental topics in grades 4-8. Sign up at www.coursera.org/#course/waterandenvironment.

Resources

Ten "Must Use" Math and Science Instructional Strategies. These strategies focus on critical skills and practices that are effective well outside the study of math and science. <http://mastersed.uc.edu/news-resources/infographics/the-importance-of-stem-in-k-12-education-video/>

SMART Competition. Redesigning a gym is the theme of this year's intelligent-building challenge for high school students. Registration opened Aug. 18. [Learn more.](#)

Google RISE Awards. Receive up to \$50,000 to start or expand a computer science program for girls or underrepresented groups. Apply by Sept. 30. [Learn more.](#)

STEM Teacher Scholarships. Applications just opened for Engineering is Elementary's professional development workshops. Funds include travel to Boston. [Learn more.](#)

Verizon Innovative App Challenge. Middle and high school students need not be techies to dream up a \$20,000 winning app idea. Registration began Aug. 4. [Learn more.](#)

Engineering – Go For It. Introduce your students to the engineering process by engaging them in lessons and activities that introduce them to the engineering design process. <http://teachers.egfi-k12.org/category/lessons/grades-6-8-lessons/>

Back to School Strategies to Engage Learners. Engage your students in learning and thinking from the moment they step into your classroom. [Read more.](http://blogs.kqed.org/mindshift/2013/08/10-ideas-to-get-those-back-to-school-juices-flowing/) <http://blogs.kqed.org/mindshift/2013/08/10-ideas-to-get-those-back-to-school-juices-flowing/>

A Resource for Parents. NSTA has recently released a resource for parents to help them understand the Next Generation Science Standards and how they will impact their child's classroom. [Find them all here.](http://science.nsta.org/enewsletter/2014-08/Leadership_Stakeholders.htm) http://science.nsta.org/enewsletter/2014-08/Leadership_Stakeholders.htm

Interested in exposing your female students to amazing young STEM professionals? [FabFems](#) are enthusiastic about the science and technology work they do and want to inspire our future generations. Visit the FabFems website to search profiles, connect with role models, and find career resources.



Announcing the ROE STEM website!
<http://www.stemdupage.com/>

News You Can Use...

STEM: Purposeful Change in Teaching and Learning

STEM is more than the four separate subjects the acronym represents. It holds the potential for purposeful change in the structure of schools and the teaching and learning within them. When stepping out of the subject silos, creating learning environments that provide purposeful integration of subjects taught in service to other students at all performance levels.

http://blogs.edweek.org/edweek/leadership_360/2014/10/problem_solving_before_stem_tbt.html?cmp=ENL-EU-NEWS3



Districts Transform STEM Lessons with Robotics

More school districts are integrating robotics into their K-12 STEM curricula and promoting robotics through after-school clubs and activities, according to this article. Educators involved in this trend say robotics can help students master technology, increase engagement and teach collaboration. <http://www.districtadministration.com/article/robots-move-clubs-classrooms>



How Inequity in STEM education Fuels Workforce Gaps

Data reveal access gaps to science, technology, engineering and math education among certain student populations, including minority and low-income students, teacher trainer and former scientist Anne Jolly writes in this blog post. She suggests that such STEM education inequities can result in workforce gaps. <http://www.middleweb.com/18467/stem-disadvantaged-minority-students/>



Antares Rocket Carried Middle School Science Experiments

You have likely heard that an unmanned rocket headed to the International Space Station exploded just seconds after takeoff Tuesday from Wallops Island, Va. What you might not have known is that the Antares rocket was carrying, among other things, a "multitude" of middle school science experiments. The students' experiments were selected from nearly 1,500 proposals. <http://mashable.com/2014/10/28/science-on-antares-rocket-explosion/>



by illustration

Ways to Teach Math Besides 'Drill the Skill'

Educators and experts share their thoughts and suggestions about teaching math.

http://blogs.edweek.org/teachers/classroom_ga_with_larry_ferlazzo/2014/10/response_ways_to_teach_math_besides_drill_the_skill.html?cmp=ENL-EU-NEWS2



25-plus Job Titles That Fall Under STEM

Seventy-four percent of individuals with science, technology, engineering and math degrees do not hold jobs in STEM fields, according to U.S. Census Bureau data. This blog post shines a light on more than 25 job titles, from actuaries to natural sciences managers, which the Bureau includes under its STEM occupations' umbrella.

<http://www.washingtonpost.com/blogs/answer-sheet/wp/2014/09/30/what-is-a-stem-occupation/>

Educators: How to Craft Common Core Math Questions

Educators at a mathematics teachers' conference in New Jersey shared tips for teaching Common Core State Standards in math. Some speakers said questions should include ambiguity that sparks creative problem-solving. "You have to choose the right level of ambiguity, enough language so that students know what to do without making it obvious what they need to do," test-question designer David Wees said. http://hechingerreport.org/content/makes-good-common-core-math-question_17841/

Upcoming Events

NGSS: Shifts in Assessment Practices, January 27, 2015. The DuPage Regional Office of Education will host a workshop for middle school educators and administrators. Stay tuned for details.

County Institute Day, February 27, 2015. The ROE STEM Team, in cooperation with several members of the STEM Community Advisory Team, is planning to host a number of STEM related workshops, with a focus on middle school. Information will be published as part of general Institute Day Program available in several weeks. Watch for future announcements.

Applications Available for Annual TECH 2015 Student Showcase. Applications are now being accepted for the annual TECH 2015 student showcase on May 7, 2015, at the Illinois State Capitol building. TECH 2015 is a not-for-profit initiative supported by a broad range of education and business organizations. Its purpose is twofold, to raise awareness of the critical role technology plays in preparing students to succeed in today's world and to show the need for increased funding for classroom technology. All state schools are invited to apply. Selected schools will send a team of two or three students to Springfield, accompanied by one teacher or administrator. Each team will share a classroom project with state legislators from approximately 12:30 to 3 p.m. at the Capitol. For more information about TECH 2015 and to apply, visit the TECH 2015 website at www.iceberg.org/tech_2015. Applications will be accepted through Feb. 3, 2015.

Schedule an Hour of Code, December 8-14

Join the largest learning event in history, December 8-14. The Hour of Code is a global movement reaching tens of millions of students in 170+ countries. Anyone, anywhere can organize an Hour of Code event. One-hour tutorials are available in more than 30 languages. No experience needed. Ages 4 to 104. <http://hourofcode.com/us>

Resources

STEMscopes: Tool to assist with shifts required by the NGSS

Teachers need to be prepared for the shifts and challenges that will accompany the NGSS. Accelerate Learning™, creators of the first, built-from-the-ground-up K-12 NGSS curriculum, has your solution: STEMscopes™. Combining powerful hands-on investigations, engineering and design challenges, and claim-evidence-reasoning assessments. Learn more and download our NGSS Flow Map at:

<http://info.acceleratelearning.com/illinois-ngss-flowmap-download>

Sport Science Blogs

Schottenbauer Publishing has a series of sport science blogs with free graphs and discussion questions. These resources may be of interest to physics, physical science, and math teachers of grades 7-12, plus some college and university classes. A range of sports are covered.

<http://sportsscienceeducation.blogspot.com/>

DOE TED-Ed Video, Lesson on Energy

Learn about and apply a multidisciplinary approach to energy education, from the natural sciences to economics and other social sciences, using a TED-Ed video and lesson. Energy is neither created nor destroyed, yet the global demand for it continues to increase. But where does energy come from, and where does it go? The animated #energy 101 video and lesson plan explain how energy flows through Earth's system. <http://ed.ted.com/lessons/a-guide-to-the-energy-of-the-earth-joshua-m-sneideman#watch>

Teacher Scholarship to Raft the Grand Canyon with NCSE

Apply for an all-expenses-paid eight-day raft trip down the Grand Canyon with the National Center for Science Education (NCSE). Winners will receive free airfare, lodging before and after the trip, and the trip of a lifetime, exploring the wonders of Grand Canyon with a team of scientists, educators, and science fans. The deadline for applications is January 5, 2015. For more information:

<http://ncse.com/about/excursions/teacher-scholarship>

The Sow It Forward Garden Grants Program

This grant is for nonprofit causes or organizations (schools, colleges, community gardens, etc.) interested in starting or expanding food garden projects that are of general benefit to their community. For the 2014 round of giving, Sow it Forward has offered 100 full grants and roughly 50 partial grants. The full grant has a worth of \$500 and the partial a worth of \$325. There are no geographic limitations on what types of food garden projects will be considered, but all grantees must be based in the United States. <http://kqi.org/grants>

Groovy Lab in a Box

As science educators who have both worked in private industry, we wanted to create something that inspired critical thinking and a genuine love of learning. We believed more "doing" and "experiencing" of actual science practices is essential to science education. Groovy Lab in a Box has many facets to its design and can be utilized by schools, after school programs, homeschoolers, and parents of natural born STEMists. <http://www.groovylabinabox.com/>