

ENERGY Education newsletter

May/June 2008



Support for Innovative Teaching

FirstEnergy's Mathematics, Science and Technology Education Grants Help Make It Happen

We know that teachers at all grade levels have creative ideas for teaching math, science and technology in ways that will engage and inspire their students. We also know that bringing those ideas to the classroom requires some funding – and that's where FirstEnergy's Mathematics, Science and Technology Education Grants make a difference.

Since 1986, FirstEnergy has supported innovative teaching by making grants to educators and youth leaders for classroom projects and teacher professional development initiatives. We award grants for a wide range of initiatives related to math, science and technology, but we generally favor those that focus on electricity.

Who Can Apply, and How?

Pre-K through 12 teachers or youth group leaders are eligible if they are located in communities served by First Energy's operating companies (Ohio Edison, The Illuminating Company, Toledo Edison, Penn Power, Met-Ed, Penelec and Jersey Central Power & Light) or where we have facilities, such as power plants.

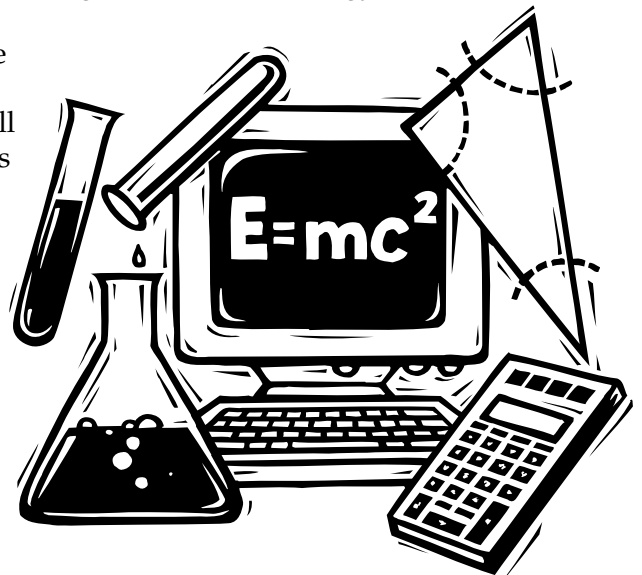
Our simple application form will be available on our website in May. Please go to www.firstenergycorp.com/education and click on "Educational Grants." The 2008 application can be completed in writable Adobe Acrobat format, or you can print it out and fill it out on paper. There you'll also find a full explanation of what kinds of projects are eligible for the grants.

Bright Ideas

In addition to the application form, the website provides a link to *Bright Ideas for Educators*, a downloadable booklet of successful projects from past years. Reading this booklet can help you refine your own application – and it

offers practical projects for you to use in your own classroom.

We're ready and waiting for your bright, new ideas. This summer, focus on that project you've had in mind for years, write a brief description of it and fill out the application form. We hope that next school year you'll be switching your students on to math, science and technology with your own bright idea supported by a grant from FirstEnergy.



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FirstEnergy
Community Initiatives Dept.
76 South Main Street
Akron, Ohio 44308
(330) 384-5022

Electric Operating Companies:

- Ohio Edison
- The Illuminating Company
- Toledo Edison
- Metropolitan Edison
- Pennsylvania Electric
- Penn Power
- Jersey Central Power & Light

Have a Green Summer in Your Backyard



Gardening is one of America's most popular hobbies – and one of the healthiest. All that time spent in the fresh air, digging and tending the garden is good for mind and body, and gardeners who grow vegetables and fruits enjoy the health benefits of fresh produce. This summer kids and grown-ups can add a new dimension to gardening – making it healthy for our planet.

Doing It the Green Way

Gardeners across the U.S. are making their hobby greener with small changes such as collecting rainwater instead of letting this precious resource run off into storm drains. Switching to a push mower not only saves electricity or gasoline, it also provides a healthy workout. Another idea is to avoid chemical pesticides and use insect traps or natural predators such as ladybugs instead.

Long before there were chemical fertilizers, farmers and gardeners used natural compost to nourish their crops. A backyard composter is easy to build and maintain. To learn more about how to compost, find books in your local library or explore websites like www.gardensimply.com that offer instructions.

Vermicomposting

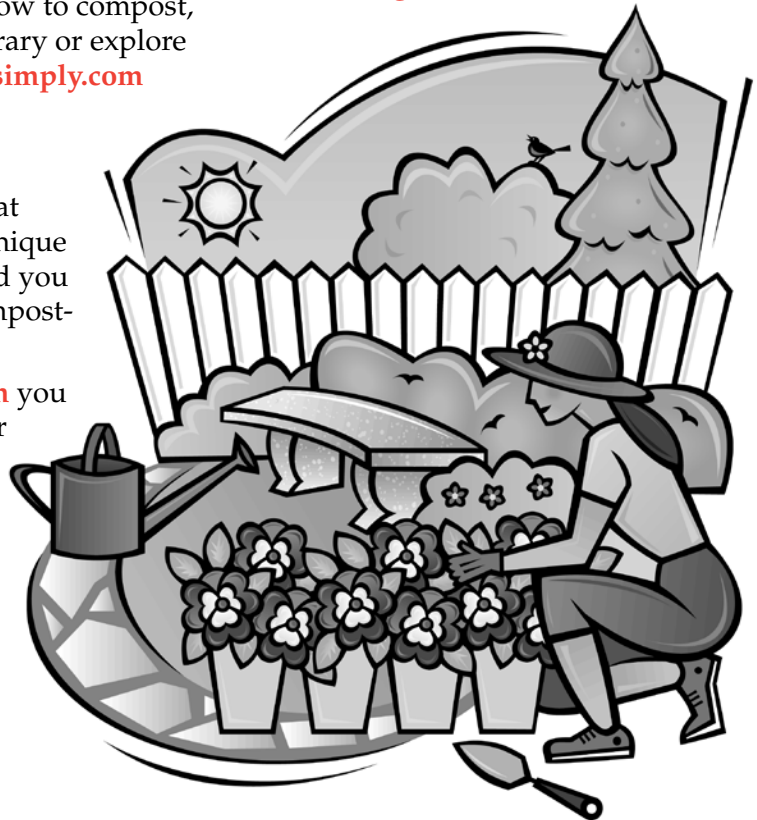
Simple composting is a great sustainable gardening technique – add worms to the mix and you can create a fascinating composting ecosystem.

At www.gardensimply.com you can learn how to build your own worm farm and how to maintain a worm

habitat where kitchen and garden scraps are transformed into rich dirt for your garden. Students could even keep a worm farm in the classroom, gaining the opportunity to learn about the natural cycle that turns plants into dirt that in turn nourishes new plants.

Get Certified!

Any gardener, young or old, who has put green gardening techniques into practice is just a few steps away from having his or her yard named a Certified Wildlife Habitat. The National Wildlife Federation certifies backyards that have the essential elements for a healthy, sustainable wildlife habitat. To find out more, or to fill out an application for certification, visit the National Wildlife Federation website at www.nwf.org.



Cool Planting

In 2001 Chicago authorities installed a roof garden on top of City Hall as part of a drive to reduce power consumption in municipal buildings. The idea was that a rooftop garden covering the 11-story building's 20,000 square feet of rooftop could reflect heat and provide shade. The results are now in, and City Hall's annual power bill has dropped by 11 percent, or almost \$10,000, since the garden went in. In light of these savings, the city has expanded the program and will soon have 4 million square feet of municipal and private rooftops under cultivation.

The Wall Street Journal, February 11, 2008



Building Homes That Sell

In January sales of new homes in the U.S. fell to a 13-year low, and San Jose, California saw a 45 percent drop in 2007.

Yet when nine new homes in San Jose went on sale in March, seven of them sold in the first weekend they were on the market. The attraction? These homes were the first in San Jose to meet the stringent energy-saving standards of Leadership in Energy and Environmental Design (LEED). Their features include water-saving shower heads, thicker insulation in the walls and attic, and integrated solar roofs.

MercuryNews.com, March 11, 2008

FirstEnergy Joins

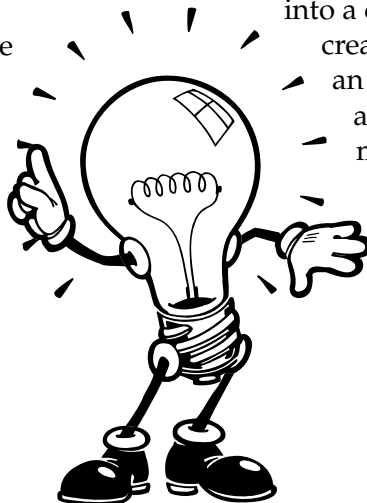
Power Conservation Initiative

FirstEnergy has plugged its resources into Green Circuits, an 18-month Electric Power Research Institute (EPRI) initiative to discover ways to reduce the loss of electric power in distribution and transmission. EPRI, an independent non-profit research organization, aims initially to identify and develop new technologies that can increase the efficiency of electrical distribution. A later phase of the project will focus on improving the efficiency of transmission lines. "FirstEnergy will play a key role in the Green Circuits initiative," said

Arshad Mansoor, EPRI's vice president of power delivery and utilization, "and we applaud their willingness to be among the leaders of this program."

www.firstenergycorp.com,

April 8, 2008



Power Dressing


Scientists at the Georgia Institute of Technology have developed a fabric that uses the piezoelectric effect – where electricity is generated when pressure is applied to certain materials – to produce electricity. The researchers covered individual fibers of fabric with zinc oxide nanowires just 50 nanometers in diameter – 1,800 times thinner than a human hair. Alternating fibers were coated with gold, and as the nanowires rubbed against one another they generated a piezoelectric charge that was captured by the gold and fed


into a circuit. The scientists envision creating shirts that could power an iPod as the wearer moves around, but one problem remains: Zinc oxide is not water-proof, so the shirt would not be washable.


Akron Beacon Journal,
February 14, 2008


Visit our website at
www.firstenergycorp.com/education


Educational Resources Available


 Take a Cloud Walk is a free downloadable book for ages 8 and up from No Student Left Indoors. Find it at www.nostudentleftindoors.com/Cloudbook.html.

 For dozens of middle school science activities ranging from studying smog formation to a cantilever building competition, visit the Vanderbilt Center for Science Outreach website, www.scienceoutreach.org. Click on "Classroom Resources" and then on "Middle School Science Mania."


 At <http://forensics.rice.edu>, students can play an online CSI game created by Rice University, CBS and other organizations, and funded by the National Science Foundation.

 High school students can watch a video on careers in optics and photonics from SPIE, the International Society for Optical Engineering, at <http://spie.org/x2650.xml>.


 The U.S. Geological Survey offers lesson plans for teaching geology right in the schoolyard. Visit <http://education.usgs.gov/schoolyard/> to find the lesson plans and information on how they correlate to state standards.


 To order math- and science-related books for pre-K through second grade, visit www.wilbooks.com/catalog and click on "Receive Free Math & Science Books." The books themselves are free, but not the postage.




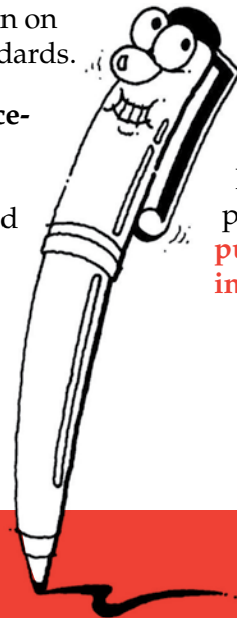
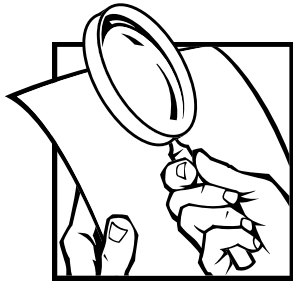
 *Discovering the Food System* from Cornell University is an experiential program for ages 12-18 to learn where our food comes from. Suitable for Scouts and other youth groups as well as for classrooms, the program is accessible at <http://foodsys.cce.cornell.edu>.

 The Department of Engineering at the University of Cambridge in the U.K. presents games and resources about engineering for kids age 9-11 and their teachers, www.engineeringinteract.org.

 "Science Snacks" are miniature versions of popular exhibits at San Francisco's Exploratorium. To find out more, visit www.exploratorium.edu and type "snacks" into the search box.

 For simple physics experiments for kids, visit Britain's Institute of Physics website at www.physics.org and click on "Marvin & Milo."

 *Inside the Cell* is a free educational booklet from the National Institute of General Medical Sciences. To download the pdf or order a copy, go to <http://publications.nigms.nih.gov/insidethecell>



*The cure for boredom is curiosity.
There is no cure for curiosity.*

- Dorothy Parker