



Great Ideas From Dynamic Teachers
38 Exciting Projects Win 2007 FirstEnergy Mathematics, Science and Technology Education Grants

We are delighted to announce the 38 winners of this year’s FirstEnergy Mathematics, Science and Technology Education Grants. The complete list of recipients is on page two of this newsletter. Congratulations to all those teachers on the dynamic projects that are brightening classrooms in our communities!

Each school year FirstEnergy makes grants of up to \$500 to teachers and youth leaders who create innovative classroom projects or professional development initiatives for educators.

The grants support excellence in teaching math, science and technology – subjects that are crucial to our students, our company and a skilled workforce.

This year’s projects cover a wide range of grade levels and a variety of topics, including recycling, energy conservation and alternative energy sources. They offer creative opportunities for hands-on learning and address educational standards across the curriculum. Most importantly, these projects are realistic and practical. We believe educators everywhere will be inspired by examples like these grant recipients:

Community Recycling Project

Linda Haywood-Dill, a fourth-grade science and social studies teacher at Rankin Elementary in Akron, Ohio, has designed a recycling project that connects her students to their community – and to students in Jamaica. The Rankin fourth-graders collect aluminum cans for recycling. They promote their effort in the school and local community by designing t-shirts and posters. A visit to a landfill and a recycling center helps them learn about the value of recycling. Using the proceeds of their recycling, the students purchase educational equipment for a partner elementary school in Jamaica.

Powering a City

“Electricity City” puts third-grade students’ knowledge of math, science, social studies and reading to work to power a city made of milk cartons. Teacher Anne S. Koch of Connequenessing Valley Elementary in Zelienople, Pennsylvania, will have her students brainstorm what

a successful community needs. They will then design, map out and build their milk-carton city – including the electrical circuits needed to bring light and power to the homes, businesses, factories and government offices. Finally, the students will invite in parents and other students and give tours of the city, demonstrating and explaining the electrical circuits that power it.

Becoming Smart Consumers of Electric Power

Andrew B. Walsh, a physics teacher at Raritan High School in Hazlet, New Jersey, will bring together teams of students from physics, socials studies, math and earth science classrooms. Each team will focus on a specific aspect of electricity use, from safety to rates of consumption and environmental impact. Drawing on one another’s skills, the teams generate and analyze data. The project culminates in a presentation of each team’s key findings.

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- 4 Educational Resources

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

Ohio

Akron

Sharon L. Kaffen
East High School
"Taking Energy Conservation Home"

Akron

John Bennett
Portage Path Elementary School
"Dressed for Scientific Success"

Akron

Karen Grindall
Portage Path Elementary School
"Let Me Build – And I Will Learn"

Akron

Linda Haywood-Dill
Rankin Elementary School
"School/Community Recycling Project"

Akron

Kathy Devus
Ritzman School
"Be My Biome"

Akron

Tina Marie Hartong
Spring Hill Junior High School
"Water Sampling"

Ashtabula

Kimberly S. Burgard
State Road Elementary School
"Mr. I.M. Power"

Brooklyn

Kathy Linger
Brooklyn High School
"The Effect on Electricity Consumption
Due to Changes in Energy Costs"

Cleveland

Sara Leins
Cleveland Central Catholic High School
"Rollercoasters"

Cleveland

Michael Robinson
South High School
"Voltaic Cell Building"

Columbiana

Tom Watson
Crestview Local School District
"The Heat Is On! Being Energy Smart
in Today's World"

Green

Pamela S. Fetchu
Green Intermediate School
"Alternative Energy Sources"

Mantua

Amanda K. Curfman
Crestwood Primary School

Mayfield

Steven Kaminsky
Mayfield High School
"Video Gaming Using
Wireless Communication"

Mogadore

Judy Smeiles
Central Elementary School
"It's All About Plants"

Oak Harbor

Alyssia Moroschan
Carroll Elementary School
"Mr. Henshaw's Lunch Box Alarm"

Peninsula

Andrea Calo
Cuyahoga Valley National
Park Association
"Classroom Demonstrations of
Sustainable and Alternative Energy"

Rootstown

Stephanie Anne Lammlein
Rootstown High School
"Looking at Genomics with an
Agricultural Eye"

Salem

Ian Finn
South Range Middle School
"Power, Energy and Simple Machines:
The Mousetrap Racer"

Sebring

Terry Iddings
B.L. Miller Elementary School
"Connecting the Curriculum"

Toledo

Traci Rathman & Amy Schweyer
East Broadway Middle School
"Investigating Alternative Energy"

Warren

Michelle Williams & Laura Janus
Jefferson Elementary School
"E.N.E.R.G.Y. – Entertaining New
Electrical Resources that Guide
Youngsters"

Willoughby

Rachel L. Legerski
Edison Elementary School
"Making Connections"

Pennsylvania

Altoona

Heidi Soldner
Juniata Elementary School
"Fifth Grade e-Mission: Operation
Montserrat Island"

Beaver Falls

Jack D'Addio
Central Elementary School
"Let It Grow"

Ebensburg

Elizabeth Nileski & Lisa Kubat
Cambria Elementary School

Hollidaysburg

Kathleen A. Moran
Hollidaysburg Catholic School

Lebanon

Beryl Stoddard
Union Canal Elementary School

New Castle

Angela L. Traggiati
Laurel Elementary School

New Castle

Ralph Martone
Shenango High School
"Modeling Energy Consumption
& Efficiency"

Oil City

Timothy Lyons
Venango Technology Center

Zelienople

Anne S. Koch
Connoquenessing Valley
Elementary School
"The Electricity City Project"

New Jersey

Denville

Josh Kaplan
Valleyview Middle School

Hazlet

Andrew B. Walsh
Raritan High School
"Smart Use of Electric Power"

Hazlet

Donna Heagen
Cove Road School
"3...2...1...Blastoff!"

Leonardo

Cheryl Cuddihy
Leonardo Grade School

Ocean

Tara Sain
Ocean Township Intermediate School
"Silver City: Why Are They Getting Sick?"

Toms River

Jason Eagan
Toms River High School South

Detecting Flames, Not Smoke

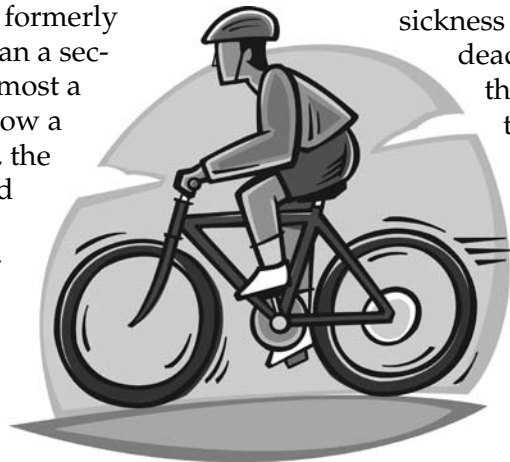
The best way to prevent widespread damage by wildfires is to detect them early and contain them before they spread uncontrollably. Satellite imagery, however, cannot normally spot fires until they have burned about 30 acres of forest. Smoke scanners can detect smaller fires but are not effective in windy conditions. Two European physicists have developed a detector that looks for flames directly. The device consists of a tube filled with the photosensitive vapor trimethylaminoethyl, with a cathode at one end and an anode wire running through the center. A UV photon from the flame strikes the cathode, triggering an avalanche of electrons within the tube that is electronically recorded as a fire signal.

physicsworld.com, October 15, 2007

Energetic Light

Supernovae produce gamma rays – the most energetic form of light – but only in the 1990s were these rays first detected in thunderstorms. A new study sheds some light on the formation of lightning, which is still not fully understood. A team of Japanese scientists focused gamma ray detectors on two low-pressure air masses as they collided over the Sea of Japan in January 2007 and showed that gamma rays were produced 70 seconds before a lightning strike. In addition, the scientists found that gamma bursts, formerly thought to last no more than a second, could continue for almost a minute. The study may show a link between gamma rays, the formation of lightning, and cosmic rays.

nationalgeographic.com, October 11, 2007



The Kinetic Energy of Traffic

Danny McCadci, an Iraq-born inventor living in California, has filed a patent application for a device that turns the kinetic energy of traffic into clean electricity. The invention consists of ditches spanning the road and covered with a shallow ridge of sheet metal. A rod connects the ridges to gears that capture the mechanical energy and transfer it to an electrical generator.

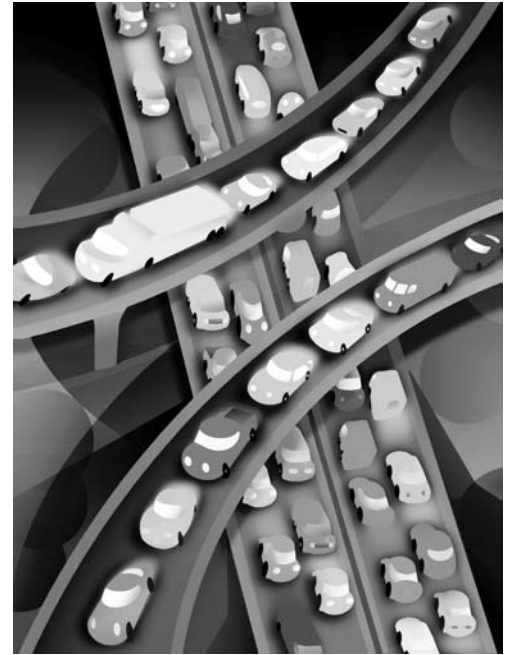
A prototype McCadci built in his living room produced enough electricity to power a light bulb.

San Jose Mercury News, August 29, 2007

Around the World by Human Power


It took him 13 years, but Jason Lewis has completed his quest to travel around Earth using only human power. The 40-year-old Englishman pedaled a boat across the Atlantic and Pacific, Roller-bladed across the U.S. and cycled across Australia. In the course of his 46,000-mile trip, Lewis was robbed and beaten a number of times and run over by a drunk driver. He suffered malaria, altitude sickness and a potentially deadly blood poisoning that he contracted in the Pacific 1,300 miles from land.


The Sunday Times, October 7, 2007




Visit our website at
www.firstenergycorp.com/education


Educational Resources Available

 **Student inventors** will find inspiration and information at <http://web.mit.edu/invent>, the website of the Lemelson-MIT Program. The site includes an inventor of the week spotlight, an inventor's handbook, and games and trivia for young inventors.


 NASA recently launched My NASA Data, a website that makes **NASA research** available to the public. Visit <http://mynasadata.larc.nasa.gov> to explore the site and search for data to draw into a lesson plan.





 For a window into **the beauty of the microscopic world**, go to www.nikonsmallworld.com and see the winners of Nikon's annual photomicrography competition.


 The National Association of Home Builders offers a **free simulation house-**


building game for middle and high schools. The game takes students through the entire home-building process from site selection to final sale, including budgeting, permitting and design. Order the CD-ROM at www.homesofourown.org.


 Cogno, home of Cogno's Challenge science puzzlers, now offers Codebreaker, another **free weekly puzzle** for grades 3 to 8. Sign up at www.cogno.com/puzzlers.

 For **free interactive math games**, visit the BBC's Mathsfile site at www.bbc.co.uk/education/mathsfile/index.shtml

 For a list of books and activity kits offered **free to teachers**, go to www.harcourtbooks.com/freetoteachers.

 To subscribe to Edutopia, the George Lucas Educational Foundation's **free magazine on innovation in education**, or to the foundation's three free e-newsletters, visit www.edutopia.org and click on "magazine."

 For free classroom activities and educational games about **hydrology**, visit the website of The Groundwater Foundation at www.groundwater.org/kc/kc.html.

 Weather Wiz Kids is a **website that provides answers** to questions like, "What is freezing rain?" and "What is the wind chill index?" as well as weather safety tips and weather games. Find it at www.weatherwizkids.com.



The dictionary is the only place where success comes before work.

Author unknown