



Putting Energy to Work Lessons

Websites

[Arthur Ganson's Chain Reaction](#)

This site provide students examples of chain reaction-like images by Arthur Ganson.
(<http://www.exploratorium.edu/webcasts/ganson/>)

[Energy Star](#)

This site explains energy star products and how people can make their homes and businesses more energy efficient using energy star products.
(<http://www.energystar.gov/>)

[Fuel Economy](#)

This site provides detailed information on fuel efficient cars and let's students find and compare different cars for their fuel efficiency.
(<http://www.fueleconomy.gov/>)

[The Secret Lives of Energy](#)

This site provides teachers and students with ideas for using energy more efficiently.
(http://www.fi.edu/guide/hughes/energy_us.html)

[Building Technologies Program: U.S. Department of Energy](#)

This site provides information on energy efficiency by building type as well as the codes and standards needed for energy efficient buildings.
(<http://www1.eere.energy.gov/buildings/>)

[Ten Things You Can Do to Curb Global Warming](#)

A downloadable file from the Sierra Club listing ten things students can do to be more energy efficient to curb global warming.
(<http://www.sierraclub.org/energy/tenthings/default.aspx>)

[United States Patent and Trademark Office: Kids Pages](#)

This site provides some great interactive opportunities for students. In "My Inventive Room," they go back in time and watch as the inventions in a room disappear. In the "Time Machine Game," they transform visionary ideas into their corresponding inventions with a time machine.
(<http://www.uspto.gov/go/kids/>)



Games Machines Play

Check this site for information about viewing episodes of Scientific American Frontiers' special "Games Machines Play" showing present-day student inventors putting their inventions to a test.

(<http://www.pbs.org/saf/1208/teaching/menu.htm>)

Inventors Hall of Fame

The inventors of industry are highlighted on this site.

(http://www.invent.org/hall_of_fame/1_4_8_ind.asp)

Invention Convention

The Invention Convention is a type of science fair for students. Students will be working on their projects independently at home unless otherwise instructed by the teacher. To become familiar with the invention process and the expectations held for students.

(<http://www.eduplace.com/science/invention/guidelines/index.html>)

Super Scientists: A Gallery of Energy Pioneers

Students can click on pictures of scientists to learn about their contributions in the field of Energy.

(<http://www.energyquest.ca.gov/scientists/index.html>)



Putting Energy to Work Lessons

Books

100 Scientists Who Shaped World History

By John Hudson Tiner. (2000, Bluewood Books)

This book for young adult readers showcases great men and women of science who significantly contributed to our understanding of the physical world around us.

All About the Industrial Revolution

By Peter Hepplewhite. (2003, Hodder & Stoughton)

This age-appropriate book covers many aspects of the Industrial Revolution including the factory system, education in factories and schools, the growth of industrial towns, and the effects of the industrial revolution on the world.

Amish Children

By Phyllis Pellman Good and Jerry Irwin. (2002, Good Books)

This book shows students how different their lives are from that of Amish children, who grow up without television, telephones, or computers.

Amish Home

By Raymond Bail. (1995, Houghton Mifflin Co.)

Through colorful photographs, students gain insights into Amish life, a way of life reminiscent of the way people lived in the 19th century.

The Gift to Be Simple: Life in the Amish Country

By Bill Coleman. (2001, Chronicle Books)

This book takes students on a visual journey through the Pennsylvania Amish valley, a region largely untouched by tourists and the amenities of modern existence.

Inventors and Inventions (Grades 4–8)

By Lorraine Hopping Egan. (1999, Scholastic Professional Books)

This book provides students with activities to help them explore the history of inventors and inventions and develop scientific problem-solving skills.



Isaac Newton: The Greatest Scientist of All Time (Great Minds of Science)

By Margaret J. Anderson. (2001, Enslow Publishers, Inc.)

Offering details about Newton's childhood and life, this age appropriate book highlights his dedication to science and mathematics.

Janice VanCleave's Scientists Through the Ages

By Janice VanCleave. (2003, John Wiley & Sons)

This book profiles the lives and work of more than 25 important thinkers in astronomy, biology, chemistry, earth science, and physics. Includes short biographies of the scientists, descriptions of their contributions to science, and simple experiments that reveal some of their most important discoveries.

Light Bulb

By Marc Tyler Nobleman and Hal Wallace. (2003, Capstone Press)

This book explains the history of the light bulb, how it works, and the various types of light bulbs used today.

Michael Faraday (Scientists Who Made History)

By Stewart Ross. (2003, Raintree/SteckVaughn)

This age-appropriate book provides students with a glimpse into the life of Michael Faraday, the 19th century scientist whose discoveries led to the invention of the electric generator.

The New York Public Library Amazing Scientists: A Book of Answers for Kids

By The New York Public Library and Jim Callan. (2001, John Wiley & Sons)

Fact-filled and fun, this book's question-and-answer format lets children explore the discoveries of some of the world's greatest scientists.

Thomas Alva Edison: Inventor and Entrepreneur (Great Life Stories: Inventors and Scientists)

By Claire Price-Groff. (2003, Franklin Watts, Inc.)

This age-appropriate book provides a biography of Thomas Edison.

Thomas Alva Edison: The King of Inventors (Scientists & Inventors Series)

By David C. King. (1997, Discovery Enterprises Ltd.)

In this book, students can read parts of Thomas Edison's own journal and lab notes, and peruse photos and critiques from his day.



The Way Things Go

Icarus Films, 2009

Available in DVD format, this 30-minute feature shows a variety of energy transfers in a chain reaction-like format, including fireworks and things dropping and rolling. A great enrichment film to support the inventions lesson.

Who's Who in Science and Technology: A Guide to Famous Scientists

By Bob Fowke. (2000, Hodder & Stoughton Children's Division)

This guide describes 300 of the most famous and fascinating scientists and inventors from Ancient Greece to the 20th century.

Chain Reaction: Rube Goldberg and Contemporary Art

By Ian Berry. (2001, Distributed Art Publishers)

This book depicts how contemporary artists have used the ideas of Rube Goldberg in their depictions of mechanical devices and functions.

The Kid's Invention Book

By Arlene Erlbach. (1999, Lerner Publications Company)

Profiles 11 inventors between the ages of 8 and 14, describes the steps involved in inventing a new product, and discusses contests, patents, lawyers, and clubs.

Mistakes That Worked

By Charlotte Foltz Jones & John O'Brien. (1994, Doubleday Books for Young Readers)

This book highlights inventions made by mistake, including Silly Putty, trouser cuffs, popsicles, and insulin. An excellent book to have in the Science Center.

Put a Fan in Your Hat! Inventions, Contraptions, and Gadgets Kids Can Build

By Robert Carrow. (1997, Learning Triangle Press)

This out-of-print book encourages and fosters the spirit of invention by describing how to build a homemade motor, a hat with a fan in it, and a motorized shoe buffer.

Rube Goldberg: Inventions!

By Maynard Frank Wolfe. (2000, Simon & Schuster)

A collection of Goldberg's inventions, comic strips, editorial cartoons, and sketches, as well as a biography of Goldberg, are presented in this book.



Samuel Todd's Book of Great Inventions

By E.L. Konigsburg. (1991, Atheneum)

This book for early elementary readers shows inventions that make Samuel Todd's day easier, such as Velcro®, a thermos bottle, training wheels, and mittens.

Totally Absurd Inventions

By Ted VanCleave. (2001, Andrews McMeel Publishing)

Offers more than 100 of the funniest patents ever made. Students will be amused as they read about the Diaper Alarm and the dog lover's Ear Tubes.

Turn on the Lights—From Bed! Inventions, Contraptions, and Gadgets Kids Can Build

By Robert Carrow. (1997, Learning Triangle Press)

This out-of-print book encourages the spirit of invention by describing how to build a wireless intercom, remote-controlled room lighting, and a "dinner's ready" light.

World's Wackiest Inventions

By A.E. Brown & H.A. Jeffcott. (1970, Dover Publications)

Features 60 of the wackiest inventions ever undertaken. Students will get a laugh out of the lip shaper, automatic saluting hat, and water-splashing wake-up clocks.