



Educator Resource Center in the Lyman Library

Science Projects, Experiments, and Activities Bibliography

Animals

Barrow, Lloyd H. ***Science Fair Projects Investigating Earthworms***. Berkeley Heights, NJ: Enslow Publishers, 2000.

Presents experiments, suitable for science fairs that explore the structure, function, movement, preferences, and reactions of earthworms.

Dykstra, Mary. ***The Amateur Zoologist: Explorations and Investigations***. New York: Franklin Watts, 1994.

This useful, well-organized resource for science projects features basic guidelines for field and lab studies, safety precautions, lists and sources of equipment, and easy-to-understand instructions.

Gardner, Robert. ***Science Project Ideas About Animal Behavior***. Springfield, NJ: Enslow Publishers, 1997.

Presents facts about animal behavior and includes related experiments, projects, and activities.

VanCleave, Janice Pratt. ***Janice VanCleave's Insects and Spiders: Mind-boggling Experiments You Can Turn into Science Fair Projects***. New York: Wiley, 1998.

Janice VanCleave's *Insects and Spiders* includes 20 fun and simple experiments that help you discover the answers to these and other fascinating questions that may be "bugging" you about critters that crawl, burrow, or fly. You'll also find dozens of suggestions for developing your own science fair projects.

Astronomy

Bonnet, Robert. ***Space and Astronomy: 49 Science Fair Projects***. Blue Ridge Summit, PA: TAB Books, 1992.

Suggests a variety of astronomy projects suitable for science fairs, involving the stars, moon, planets, and Milky Way.

Gardner, Robert. ***Science Project Ideas About the Moon***. Springfield, NJ: Enslow Publishers, 1997.

Introduces the phases and other characteristics of the moon through a series of experiments, most of which can be used to start a science fair project.

Rhatigan, Joe. ***Out-of-this-world Astronomy: 50 Amazing Activities & Projects***. New York: Lark Books, 2003.

Introduces "the study of stuff in space," providing statistics, quizzes, activities, and experiments about the stars and planets.

VanCleave, Janice Pratt. ***Janice VanCleave's Constellations for Every Kid: Easy Activities that Make Learning Science Fun.*** New York: Wiley, 1997.

Describes twenty of the most prominent constellations, including the Big Dipper, Orion, and Cancer, explains how to locate them, and provides instructions for related activities.

Botany

Gardner, Robert. ***Science Projects About Plants.*** Springfield, NJ: Enslow Publishers, 1999.

Provides instructions for over thirty experiments appropriate for science fairs, involving plant physiology, reproduction, and growth.

Hershey, David R. ***Plant Biology Science Projects.*** New York: Wiley, 1995.

This book presents directions for projects and experiments on plants dealing with such biological processes as seed germination, photosynthesis, plant growth, hydroponics, and transpiration. A 20-page introduction provides helpful information on planning and carrying out the projects and gives students information about the basic types of experimentation.

Perry, Phyllis Jean. ***Science Fair Success With Plants*** Springfield, NJ: Enslow, 1999.

Details twenty-five experiments demonstrating the structure, environmental needs, and life processes of plants. Includes bibliographical references (p. 97-99) and index.

Wood, Robert W. ***Science for Kids: 39 Easy Plant Biology Experiments.*** Blue Ridge Summit, PA: TAB Books, 1991.

Presents thirty-nine experiments with plants, including 'Why Plants Have Roots,' 'How a Bean Grows,' and 'How to Graft a Plant.'

VanCleave, Janice Pratt. ***Janice VanCleave's Plants: Mind-boggling Experiments You Can Turn into Science Fair Projects.*** New York: Wiley, 1997.

Presents facts about plants and includes experiments, projects, and activities related to each topic.

Chemistry

Brandolini, Anita J. ***Fizz, Bubble & Flash! Element Explorations and Atom Adventures for Hands-on Science Fun!*** Charlotte, VT: Williamson Pub., 2003.

Gives instructions for a variety of experiments that examine the characteristics of some of the common elements around us.

Fiarotta, Noel. **Great Experiments With H₂O**. New York: Sterling, 1997.

Presents basic facts about water and includes simple experiments to illustrate such aspects as surface tension, dispersion, saturation, and buoyancy.

Hauser, Jill Frankel. **Super Science Concoctions: 50 Mysterious Mixtures for Fabulous Fun**. Charlotte, VT: Williamson Publ., 1996.

Over 75 safe, inexpensive science experiments with mixtures that illustrate changes in form and chemical composition.

VanCleave, Janice Pratt. **Janice VanCleave's Molecules**. New York: John Wiley & Sons, 1993.

A collection of science experiments and projects exploring molecules.

Wood, Robert W. **Science for Kids: 39 Easy Chemistry Experiments**. Blue Ridge Summit, PA: Tab Books, 1991.

A collection of thirty-nine simple chemistry experiments, including 'How to Remove Iodine from Water' and 'Soap That Eats an Egg.'

Climate and Weather

Ardley, Neil. **The Science Book of Weather**. San Diego, CA: Harcourt Brace Jovanovich, 1992.

Simple experiments demonstrate the different forces that cause different kinds of weather.

Breen, Mark. **The Kids' Book of Weather**. Charlotte, VT: Williamson Pub., 2000

A hands-on introduction to the science of meteorology, explaining how to make equipment to measure rainfall, wind direction, and humidity, record measurements and observations in a weather log, make weather predictions, and perform other related activities.

Gardner, Robert. **Science Project Ideas About Rain**. Springfield, NJ: Enslow Publishers, 1997

Uses experiments to illustrate the properties of rain as well as the reasons that water is such an important part of life.

Jones, Lorraine. **Super Science Projects About Weather and Natural Forces**. New York: Rosen Central, 2000.

Introduces the basic concepts of meteorology through hands-on activities and research projects.

Wyatt, Valerie. **Weather Watch**. Reading, MA: Addison-Wesley, 1990.

Explains what makes weather, why it changes so often, and how it affects humans and animals. Includes activities and experiments.

Earth and Environment

Bonnet, Robert L. ***Earth Science: 49 Science Fair Projects***. Blue Ridge Summit, PA: TAB Books, 1990.

More than just a source of good project ideas, this book also teaches students how to conduct a scientific experiment from beginning to end.

Dashefsky, H. Steve. ***Kids Can Make a Difference! Environmental Science Activities***. New York: TAB Books, 1995.

After explaining how scientists study the environment, author H. Steven Dashefsky tells students how to create a successful science fair project and get off to a solid start. Then, he presents a variety of activities and experiments that teach environmental science by examining real-world problems and offering solutions.

Gardner, Robert. ***Experimenting With Energy Conservation*** New York: Franklin Watts, 1992.

Discusses energy and its conservation and provides experiments with which to investigate the topic.

Harlow, Rosie. ***Garbage and Recycling***. New York: Kingfisher, 1995.

Explaining the difference between biodegradable and non-biodegradable garbage, this book shows how glass, metal, and wool can be easily recycled. How Can I Help? boxes give suggestions for the young environmentalist who wants to recycle at home.

Levine, Shar. ***Projects For a Healthy Planet: Simple Environmental Experiments for Kids***. New York: Wiley, 1992.

Projects designed to help us understand causes of pollution, to protect our resources, and to create environmentally friendly products.

Williams, Zella. ***Experiments About Planet Earth***. New York: PowerKids Press, 2007.

Provides step-by-step instructions for experiments that demonstrate the parts of the Earth, its moving plates, its orbit, how waves work, and composting.

VanCleave, Janice Pratt. ***Earth Science For Every Kid: 101 Easy Experiments that Really Work***. New York: Wiley, 1991.

Instructions for experiments, each introducing a different earth science concept.

General Works

Amato, Carol. ***50 Nifty Science Fair Projects***. Chicago: Contemporary Books, 1993.

Instructions for preparing and presenting fifty science experiments suitable as science fair projects.

Gardner, Robert. ***Robert Gardner's Challenging Science Experiments***. New York: Franklin Watts, 1993.

Presents easy-to-prepare scientific experiments that demonstrate principles of physics, chemistry, astronomy, and biology.

Harris, Elizabeth Snoke. ***Yikes! Wow! Yuck! Fun Experiments For your First Science Fair***. New York: Lark Books, 2008.

In addition to a super "Official All You Need to Know to Do a Great Science Fair Project" section, this fully-illustrated collection features 25 curriculum-appropriate activities to choose from, plus guidance on how to perform experiments, analyze the data, and draw conclusions. And kids will love the projects, which include preserving jack-o-lanterns, studying the domino effect, making fruit and vegetable dyes, spinning eggs, and doing some rubber-band bungee.

Mandell, Muriel. ***Simple Science Experiments with Everyday Materials***. New York: Sterling Pub. Co., 1989.

Includes instructions for ninety-nine simple experiments that demonstrate basic scientific principles.

VanCleave, Janice Pratt. ***Janice VanCleave's Help! My Science Project is Due Tomorrow!: Easy Experiments You Can Do Overnight***. New York: Wiley, 2002.

With Janice VanCleave's Help! My Science Project Is Due Tomorrow! you can choose from a wide variety of ideas drawing from all the scientific disciplines. Just pick any topic you're interested in—stars, telescopes, cells, spiders, chemical change, solutions, the water cycle, energy, and many more—read the background information, gather a few simple materials, and start experimenting!

VanCleave, Janice Pratt. ***Janice VanCleave's Super Science Models***. Hoboken, NJ: Wiley, 2004.

Inside, you'll find easy-to-follow instructions for 25 great models that reveal the worlds of astronomy, biology, chemistry, earth science, and physics. You'll also get helpful hints on displaying your models, including advice on backboards, scale models, stands, and other clever techniques.

Vecchione, Glen. ***100 Amazing Make-it-yourself Science Fair Projects***. New York: Sterling Pub., 1995.

This extensive collection of do-it-yourself projects ranges from simple ideas using household materials to sophisticated plans requiring a significant investment of time and money, a few of which, such as a parabolic sound antenna, are unique.

Human Body

Anderson, Karen C. ***The Bones and Skeleton Game Book***. New York: Workman Pub., 1993

A collection of activities, quizzes, games, puzzles, and experiments exploring the human body and how it works.

Ardley, Neil. ***The Science Book of the Senses***. San Diego, CA: Harcourt Brace Jovanovich, 1992.

Gives instructions for a variety of simple experiments that explain how the body's five senses operate.

Branzei, Sylvia. ***Hands-on Grossology***. New York: Price Stern Sloan, 2003.

Instructions for a variety of simple experiments that illustrate some of the more "disgusting" aspects of human physiology. Also includes related activities and experiments.

Byles, Monica. ***Experiment with Senses***. Minneapolis, MN: Lerner Publications Co., 1994.

Simple experiments demonstrate the five human senses.

O'Brien-Palmer, Michelle. ***Watch Me Grow: Fun Ways to Learn About My Cells, Bones, Muscles, and Joints - Activities for Children 5-9***. Chicago, IL: Chicago Review Press, 1999.

Explores our bones, joints, muscles, and other connective tissues and how they grow, with sixty hands-on games, experiments, and activities.

O'Neil, Karen E. ***Health and Medicine Projects for Young Scientists***. New York: Franklin Watts, 1993.

Provides instructions for experiments demonstrating medical principles and explains how similar investigations have helped find cures or treatments for serious illnesses.

Parker, Steve. ***How the Body Works***. Pleasantville, NY: Reader's Digest Association, 1994.

100 ways parents and kids can share the miracle of the human body.

Physics

Ardley, Neil. ***The Science Book of Energy***. San Diego, CA: Harcourt Brace Jovanovich, 1992.

Gives instructions for a variety of simple experiments that explore and explain different forms of energy.

Ardley, Neil. ***The Science Book of Hot & Cold***. San Diego, CA: Harcourt Brace Jovanovich, 1992.

Explores and explains different properties of temperature through simple experiments.

Bonnet, Robert L. ***Science Fair Projects: Physics***. New York: Sterling Pub., 1999.
Presents projects and experiments that use easy-to-find materials to explore the world of physics, covering such topics as temperature, energy flow, acceleration, sound, pendulums, momentum, magnetism, and solar heat.

Cobb, Vicki. ***Light Action!: Amazing Experiments with Optics***. New York: HarperCollins, 1993.
Explains what light is and explores the basic principles of optics through experiments.

Gardner, Robert. ***Science Projects About Solids, Liquids, and Gases***. Berkeley Heights, NJ: Enslow Publishers, 2000.
Presents science projects and experiments exploring the states of matter, their properties, and their measurement.

Levine, Shar. ***Shocking Science: Fun & Fascinating Electrical Experiments***. New York: Sterling Publishing, 1999.
Suggested experiments studying static electricity and electrical circuits, with easily obtained supplies. Includes historical information and glossary.

VanCleave, Janice Pratt. ***Janice VanCleave's A+ Projects in Physics: Winning Experiments for Science Fairs and Extra Credit***. New York: Wiley, 2003.
Presents thirty sample projects that examine various principles of physics and are suitable for science fairs.

Sports

Gardner, Robert. ***Experimenting with Science in Sports***. New York: Franklin Watts, 1993.
Discusses how such principles of physics as force, gravity, and momentum apply to a variety of athletic actions, with experiments for the reader to try.

Gardner, Robert, ***Science projects about the physics of sports***.
Springfield, NJ: Enslow Publishers, 2000.
Presents science projects and experiments related to sports, covering such topics as speed, Newton's Laws, force and motion, gravity, friction, and collisions.

Goodstein, Madeline P. ***Sports Science Projects: The Physics of Balls in Motion***.
Berkeley Heights, NJ: Enslow Publishers ; 1999.
Presents experiments and science fair projects that demonstrate the differences between kinds of sports balls and the relationship between their design and performance.

Levine, Shar. ***Sports Science***. New York: Sterling Pub., 2006.

Examines scientific experiments to help improve your game.

Ontario Science Center. ***Sportworks: More Than Fifty Fun Games and Activities that Explore the Science of Sports***. Reading, MA: Addison-Wesley, 1989.

Describes a variety of games and activities with which to explore the science of sports, in such areas as body types, muscles, and water sports.

Technology and Invention

Adams, Richard C. ***Engineering Projects for Young Scientists***. New York: Franklin Watts, 2001.

Presents practical problems and science fair projects related to engineering and physics, covering such subjects as force, friction, motion, sound waves, light waves, and mechanics.

Nankivell-Aston, Sally. ***Science Experiments with Simple Machines***. New York: Franklin Watts, 2000.

Explores the properties of simple machines through experiments, using material readily available in most homes and schools.

Smithsonian Institution. ***Fun Machines: Step-by-step Science Activity Projects from the Smithsonian Institution***. Milwaukee: G. Stevens, 1993.

Provides instructions for making such devices as a tin-can telegraph, crystal radio, and kaleidoscope, and suggests a variety of related experiments and other activities.

Sobey, Edwin J. C. ***How to Build Your Own Prize-winning Robot***. Berkeley Heights, NJ: Enslow Publishers, 2002.

Teaches the fundamentals of robotics, from motors to wheel alignment, and including the construction of a personal robot.

Zubrowski, Bernie. ***Messing Around with Water Pumps and Siphons***. Boston: Little, Brown, 1981.

Explains the principles of suction and compression and includes directions for constructing simple and complex water devices and for using them in experiments and demonstrations.

Zubrowski, Bernie. ***Wheels at Work: Building and Experimenting With Models of Machines***. New York: Morrow, 1986.

Instructions for using readily available materials to make models of machines such as pulleys, windlasses, and water wheels, with suggested experiments to demonstrate their capabilities.