

# PHYSICS LIBRARY

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As of 4/20/06**

**The following materials are available in the left side of fourth cabinet from left in ED 200**

Acceleration (activity 3). Coleman, Tim

Active physics sample request form

Activity sheets 1 to 6 answer key

Activity sheet 2: label the following objects as good or poor conductors of sound

Activity sheet 3: put an x in the box(es) where sound waves will be heard when the tuning fork is struck

Activity sheet 4: rank the tubes, 1 to 8, according to their pitch, using 1 for the highest

Activity sheet 5: mechanical energy

Activity sheet 5: rank each hole, 1 to 4, according to the pitch it produces starting with 1 for the highest

Activity sheet 6: complete the crossword puzzle using clues below

Advanced physics experiments (advertisement). Klinger Educational Products Corp.

Adolescence and young adulthood/science physics exercise 3 rubric. National Board for Professional Teaching Standards, 1999.

Aircraft carrier printable activity

Appendix: An annotated bibliography on force concept misconceptions. Grim, Nancy. Fall, 1998.

Are mittens warm? (lesson plan)

Baffle test for a glider

Ball toss: which goes farther, a light ball or a heavy ball?

Basic science inquiry kit (teacher's manual)

[Basic internal combustion engine parts] (transparency)

The big banana peel (worksheet)

Boyle's law

Breaking the sound barrier (worksheet)

Brewing tea (worksheet). 1998

Bucky ball bearings (newspaper clipping)

Bubble shapes (worksheet) SEE Magnetic or not? [AND] Bubble...

Building circuits (copy)

By golly by gum (lesson plan). Countee, Dana.

By golly by gum (activity sheets). AIMS Education Foundation, 1994

By golly by gum (paragraph format). 1995

By golly by gum part 2 (chart format). 1995

By golly by gum part 3 (graph format). 1995

Can light energy change?

Catalog of programs (catalog). Physics Academics Software.

Chapter 13 test: physical science

Charles's law (lesson plan). Berry, Tabitha L.

The cheerleader and the football player: a case study on physics and physical exertion

Chemical vs. physical properties p175-180 IN An introduction to scientific inquiry: Natural sciences 097 student activities.  
Kendall/Hunt, 1996

The chemistry of metals (draft). Partners for terrific science: Teacher resource module for middle and high school teachers. Armco, 1993.

Chicago academy of sciences & northeastern Illinois university science teachers network

Circuits: activity 6

[Classifications of engines] (Transparency)

Conceptual physical science (2<sup>nd</sup> ed). Hewitt, Paul G and Suchocki, John and Hewitt, Leslie A. Addison Wesley Longman, 1999.

Conceptual physical science explorations (3<sup>rd</sup> ed.). Hewitt, Paul G., Suchocki, John & Hewitt, Leslie A. Pearson Addison Wesley, 2004

- About science pxvi-xv
- Fluid mechanics p133-160
- Heat transfer and change of phase p1799-202
- Momentum and energy p65-92
- Newton's law of universal gravitation p93-110
- Newton's laws of motion p37-64
- Patterns of motion and equilibrium p13-36
- Physics p11-338
- Projectile and satellite motion p111-132
- Thermal energy and thermodynamics p161-178

Copenhagen. Frayn, Michael. *Classic*, II (III)

Conducting polymer nanowires created: dip-pen technique writes polymer nanolines directly onto surfaces

Contemporary college physics (3<sup>rd</sup> ed). Jones Edwin Dr. & Childers, Richard Dr. McGraw-Hill, 1999.

Contemporary college physics: Student study guide with solutions (3<sup>rd</sup> ed). Safko, John L & Jones, Edwin R & Childers, Richard L. McGraw Hill, 1999.

Controlling current.

Criss-cross puzzle: Atoms (activity sheet). From <http://puzzlemaker.school.discovery.com/code/BuildCrissCross.asp>

A demo a day: A year of physical science demonstrations. Bilash, Borislav II. Flinn Scientific, 1997

- Disposal procedures pxii
- Methods of physical science p2-21
- Safety procedures pxi

Discovering density (lab experiment plan). Ramirez, Arcelia

Earth science vocabulary chapter 20 test

Eddy-current motor

Educational magnets (advertisement) The Magnet Source.

Electric charge and static electricity.

Electric circuits (kit)

Electrical energy (science projects/hard copy). Simpson, Stacy.

Electrical generation (poster)

[Electrical power transmission through air] (transparency)

[Electrical power transmission through solids] (transparency)

Electricity: The abc's of. Channing L Bete Co, 1995.

Electricity: chapter 9

Electricity and magnetism (handout)

Electricity and magnetism. McDougal Littell Science series. McDougal Littell, 2005

- Build a speaker p100-101
- Can magnets heal people? P87
- Charge needs a continuous path to flow p43-50
- Charges can move from one place to another p18-17
- Circuits and electronics p40-71
- Circuits make electric current useful p51-56
- Current can produce magnetism p88-94
- Design an electronic communication device p66-71
- Electric current is a flow of charge p28-39
- Electric eels p17
- Electricity p6-39
- Electronic technology is based on circuits p57-71
- Electronics in music p2-5
- Generators supply electrical energy p102-112
- Glossary pr52-r57
- Introducing physical science pxii
- Lab handbook pr10-r35
- Lightening p26-27
- Magnetism p76-112
- Magnetism can produce current p95-101
- Magnetism is a force that acts at a distance p79-88
- Materials can become electrically charged p9-17
- Math handbook pr36-r44
- The nature of science pxxii-xxv
- The nature of technology pxxvi-xxvii
- Note-taking handbook pr45-r51
- The science of electrical work p50
- Scientific thinking handbook pr2-r9
- Solving percent problems p56
- Standards and benchmarks px-xi
- The story of electronics p72-75
- Unifying principles of physical science pxiii-xxi
- Using McDougl Littell Science pxxviii-xxxii
- Using significant figures p107-112
- Using variables p35-39

Electricity and magnetism (teacher's ed). Prentice Hall Science explorer series. Prentice-Hall 2002.

Electricity from coal: What everyone should know about. Channing L Bete Co, 1999

Electricity jitterbug jenny

Electricity serves our community (poster)

Electromagnets: facts to know

Electromagnets lesson plan

[Elements of propulsion] (transparency)

Energy (assessment)

Energy Exploration (Word Search).

Energy: How can energy be stored in a rubber band and then released. (student activity handout)

Energy: How high will a ball bounce (student activity handout)

Energy – power (activity card).

[Energy sources] (transparency)

[Energy use in the U.S.] (transparency)

Estimate Fahrenheit temperatures (activity sheet)

Experiment 38: spinning can

[External combustion engines] (transparency)

Extension activities: static can, electric animals, how does the copy machine work. Creative Teaching.

Far out physics (problem scenario excerpt)

Fermilab beauty & charm sampler packet

Films for the humanities & sciences

Flinking: Neither floating nor sinking. Wilson, Roger B. *Science Scope*, May, 1993, p20-21

Floating a lemon SEE Magnetic or not? [AND] Bubble shapes [AND] Hot rods [AND] Floating...

Force and motion lesson plan

Force concept inventory. *The physics teacher*, 30 (141-53), March., 1992.

Force concept inventory. Hestenes, David & Swackhamer, Gregg & Wells, Malcolm. *The physics teacher*, 30 (141-53), March., 1992.

Force concept inventory critique (worksheet). Grim, Nancy

Force concept misconceptions (annotated bibliography). Grim, Nancy

[Forms of energy] (transparency)

The four forces of flight (lesson plan).  
Drag (lab sheet) [2]  
Forces of flight: Evaluation  
Gravity (lab sheet)  
Lift (lab sheet) [2]  
Parts of a plane: Evaluation  
Thrust (lab sheet)

From the coal mines to the power lines: Teacher's curriculum guide

Fundamentals of physics (3<sup>rd</sup> ed). Halliday, David & Resnick, Robert. John Wiley & Sons, 1988.

The genius of James Clark Maxwell, part 1: The man and his career. *Chem 13 News* 13, Oct. 1995 p12-16

Getting to grips with light. Brown, Tom. Sibbett, Wilson, & Wright, Ewan M. *Science Magazine* vol 293, Aug. 17, 2001 p1265-1267

Going bananas (worksheet).

Gott's 'time travel' a trip worth taking (review). Dorsey, Gary.

A guide to introductory physics teaching (paper copy). Arons, Arnold B. John Wiley & Sons.

Hands-on physical science 1994 content map

Heat activity (kit)

Heat causes changes (worksheet), 1998

Heat/light stack (diskette)

High school physics

Homework: This is what I learned about heat energy today (worksheet). 1998

Hot rods (worksheet) SEE Magnetic or not? [AND] Bubble shapes [AND] Hot...

Houghton Mifflin Science discoveryworks teacher resource book, grade 2: Unit B: Energy and motion. Houghton Mifflin, 2000

- Activity support pB35-48
- Alternate activities pB29-34
- Assessment guide pB49-66
- Cause/effect pB42
- Chart/survey pB40
- Cloth temperatures pB113
- Concept checklists pB77-86
- Experimenting with high and low sounds pB23
- Exploring lenses pB19
- Exploring motion and heat pB24
- Exploring pushes pB21
- Exploring ways to save heat pB25
- Films for the humanities and sciences
- Four-column chart pB47
- Group self-assessment checklist pB93-94
- Group skills checklist pB75
- Home-school connection pB1-14
- Inside my science portfolio pB89
- Instructions and experiments for the speed of the bubble tube set. 1999 transparent devices
- Knock-knock, who's there? PB9
- K-W-L chart pB44
- Lab oratory manual for general physics parat2, Bernard D. Kern, 1989
- Lesson assessment pB53
- Light goes through pB109
- Main idea and details pB43
- Measuring motion pB20
- Measuring movement pB7
- Milliken, publishing co., solids, liquids and gases,; reproducible pages plus teacher's guide, 1984
- Name that sound pB10
- Nova fall2003, Teacher's guide
- Observation and interview pB71-86
- Observing light as it strikes objects pB18
- Observing motion and sound pB22
- Observing the path of light pB17
- Performance assessment pB67-70
- Performance assessment checklist pB70
- Performance assessment recording page pB69
- Performance assessment teacher support pB68
- Physics , fall 2003, video, dvd and cd-rom programs
- Physics and data collection, Pasco,2002
- Portfolio assessment pB87-90
- Prediction/result pB39
- Pressed for time unit test pB101-106
- Quantum, march/april 2000
- Reflect on this pB4
- Save it now? PB12
- Science notebook pB15-28
- Science portfolio evaluation sheet pB90
- Science process skills checklist pB74
- Scientific reasoning skills checklist pB76
- Self-assessment pB91-94
- Self-assessment checklist pB92
- Sounds from a straw pB112
- Special lenses help us pB6
- Steel ball in motion pB111
- Take a new direction pB8
- Three-column chart pB46
- Through a window darkly pB5
- Traveling water drop pB110
- 2-cm grid p37
- two-column chart pB45
- Unit opening letter pB3
- Unit closing letter pB13-14
- Unit project pages pB107

Unit project scoring checklist pB114  
Unit test pB95-100  
Venn diagram pB41  
Where's the heat? PB11  
Word web pB38

Houghton Mifflin Science discoveryworks teaching guide 2: [unit D] Solids, liquids, and gases. Houghton Mifflin, 2003  
Activity pD18-19, D26-27, D34-35, D42-43, D50-51, D60-61, D68-69, D76-77, D84-85, D92-93  
Checkpoint pD56-57  
Concept maps pT14-15  
Curriculum integration pD5  
Discoveryworks correlations pD4  
How are solids, liquids, and gases alike? PD48-55  
How are the shapes of solids and liquids different? PD32-39How can you describe and group liquids? PD24-31  
How can you compare solids, liquids, and gases? PD90-97  
How can you describe a gas? PD40-47  
How can you describe and group solids? PD16-23  
How does a gas change to a liquid? PD74-81  
How does a liquid change to a gas? PD66-73  
How does a liquid change to a solid? PD82-89  
How does a solid change to a liquid? PD58-65  
In the science center pD38, D46, D54, D72, D88, D96  
Integrating science & math pT17  
Materials list pD15  
Meeting individual needs pT13  
Ongoing assessment pD11  
Rap rhymes pD12  
Reading in the content area pT16  
Resources pD20-22, D28-30, D36-37, D44-45, D52-53, D62-64, D70-71, D78-80, D86-87, D94-95  
Science and literature pD10  
Science and math toolbox pD102  
Science background pD6  
Science in the computer center pD39  
Science in the math center pD23, D97  
Science in the reading center pD47, D55  
Setting the stage pD17, D25, D33, D41, D49, D59, D67, D75, D83, D91  
Skills for scientific literacy pD8-9  
The scope of the program pT8-9  
Teacher-tested activities pD14  
Teaching model pT10-11  
Technology resources pT12  
Think like a scientist pT18-23  
The unit at a glance pD2-3  
Unit overview pD2-15  
Unit project link pD31, D65, D73, D81, D89  
Unit review pD98  
Unit wrap-up pD99  
Using math skills pD101  
Using reading skills pD100  
Using technology pD13

Hovercraft experiment and jet propulsion experiment

How are parallel and series circuits different?

How are watts, ohms, amps, and volts related? Beaty, William, 4/2/2000. Retrieved 7/9/03 from  
<http://www.amasci.com/elect/vwatt1.html>

How we hear sound

Induction coil & galvanometer

[Internal combustion engines] (transparency)

[Internal combustion engines continued] (transparency)

Introduction to magnets (lesson plan). McKinnon, Sheila.

An introduction to rheology with an emphasis on application to dispersions. Motyka, Andrea L. *Journal of Chemical*

*Education* 73(4) April, 1996 p374-380

Investigate another way to make electric current

Investigate how to light two bulbs with one cell

Investigate what makes sound (worksheet). From *The energy of sound and light* . McGraw-Hill.

Investigating solids, liquids, and gases with toys: States of matter and changes of state. Sarquis, Jerry, Hogue, Lynn, Sarquis, Mickey, and Woodward, Linda. Terrific Science Press, 1997.

Activity list p5-6

Changes of state p17-23

Content review p11-24

Density p15

Effects of temperature and pressures p16

Gas-to-liquid transitions p20

Gas-to-solid transitions p22

Gases p14

Hard-to-classify matter p14

Inside this teacher resource module p2-4

Liquid-to-gas transitions p17-19

Liquid-to-solid transitions p21

Liquids p14

Safety procedures p7-10

Solid-to-gas transitions p21

Solid-to-liquid transitions p21

Solids p12-13

States of matter p11-16

What are TOYS teacher resource modules? P1

What is teaching science with TOYS? P1

It's a gas (worksheet).

Keep your balance (lesson plan)

Keeping his cool (photograph).

Kinetic and potential energy (worksheet). .

Kinematic motion (thematic unit). Davis, Jeanine A. 2000.

Light. Completing sentences/questions.

Light activity. Grim, Nancy. *Physics for pre-service teachers:physical science* 110. May, 1999.

Light activity sheet 1. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light activity sheet 4. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light activity sheet 5. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light activity sheet 6. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light activities answer sheet for activities 1-6 Costello, Weber, 1975. Basic Science Inquiry Kit.

Light and electromagnetic waves

Light and shadows

Light crossword puzzle. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light: reflection and refraction activities 1-6answer sheets. Costello, Weber, 1975. Basic Science Inquiry Kit.

Light and shadows ( activity card).

Machines: chapter 19 outline

Magic baby bottle. Grim, Nancy C. 1994.

Magnet muscles (lesson plan). Barnes, Deborah.

Magnetic or not [AND]Bubble shapes[AND] Hot rods [AND] Floating lemon (worksheets). Scholastic, 2002.

Magnetism (lesson plan). Gilmore, Marie

Magnets, electromagnets, and fields of force (lesson plan). Czerwiec, John J.

Magnets, electromagnets, and motors (lesson plan). Nolan, Lynne.

Making measurements p.p.A1-D4

Making observations and inferences with an electric circuit.

Marble collision: what happens when one marble collides with a line of marbles?

[Matter] ( worksheet). Science Horizons

Matter and energy. McDougal Littell Science series. McDougal Littell, 2005  
About temperature and heat p96  
Fuels of the future p2  
Introducing physical science pxii  
The nature of science pxxii-xxv  
The nature of technology pxxvi  
Standards and benchmarps px-xi  
Unifying principles of physical science pxiii-xxi  
Using middle school science pxxviii-xxxii

[Measuring] (worsksheet). Science Horizons.

[Measurement] (Nancy Grim worksheet)

[Measurement of electricity] (transparency)

[Mechanical power transmission] (transparency)

More about magnetism and electric models.

Motion (transparency)

Motion and forces. McDougal Little Science series. McDougal Littell, 2004

Motion and forces. McDougal Little Science series. McDougal Littell, 2005

Mouse House surprise. Discovering Electricity. 1993, Enterprise for Education.

My science observation journal

Newton's law (physics activity 4). Coleman, Tim

Newton's laws and force: lesson plan. Grim, Nancy. Chicago State University, May 2000.

[Ohm's law] (Transparency)

[Ohm's law in triangle expression] (Transparency)

[Operation of gasoline engines] (transparency)

Out of the woodwork, into the mainstream: Study of wormholes, time travel, gaining scientific credibility. Begley, Sharon. *Chicago Sun-times*, 11/25/03.

Partners for terrific science [Teacher resource module] (draft). U.S. Dept. of Energy, Fernald Environmental Management Project, and Miami University.

Physical chemistry (chap.12 test). Dupuis, Mike.

Physical science (2<sup>nd</sup> semester exam revision on 5/00)

Physical science (5<sup>th</sup> ed). Tillery, Bill W. McGraw- Hill, 2002.

Physical science (6<sup>th</sup> ed). Tillery, Bill W. McGraw-Hill, 2005.

Physical science (chap. 17 test). Dupuis, Mike.

Physical science (final exam revision on 1/99)

Physical science (midterm exam). Coleman, Timothy.

Physical science (packet of transparencies)

Physical science: concepts in action. M. Wyession, D. Frank, & S. Yancopoulos . Pearson Education, Inc. , 2006.

Physical science test: fill in the blank

Physics academic software (catalog of programs) 2001-2002

Physics (An annotated list of internet resources). Kristick, Laurel. *C&RI News*, March 2000, p.199-202.

Physics p16-18. IN How to maximize your children's IQ's and potential in school by turning your home into a high-powered learning environment. From <http://www.intuitor.com/HPLenvironment.html>

Physics for poets (5<sup>th</sup> ed). March, Robert H. McGraw-Hill, 2003.

Physics InfoMall (kit) (advertisement)

The physics of everyday phenomena: A conceptual introduction to physics (4<sup>th</sup> ed). Griffith, W. Thomas. McGraw-Hill, 2004.

Portfolio topics

Potato chips and oil wells (article)

Power challenge, part 1

Problems set 1

Problem set 2

Problem set 3

Problem set 4

Problem set 5

Problem set 6

Problem set 7

Problem set 8

Problem set 9

Problem set 10

Pulleys and inclined planes. Syrocki, Dr.B. J., Weber Costello Company, 1975.

Putting error in its place (essay) by Andrea A. Lunsford

Selected solutions for Fundamentals of physics by David Halliday & Robert Resnick (3<sup>rd</sup> ed & 3<sup>rd</sup> ed. extended) Derromgi. Edward/. John Wiley & Sons 1988.

Shape shifters (lesson plan). Includes shape shifters lab sheet, foam shifters lab sheet, and shape shifters evaluation

Shrinky plastic (lesson plan)

Simple machines; teacher's manual. Syrocki, Dr.B. J., Weber Costello Company, 1975.

[Simple Machines] (worksheets)

Small on top: how can the energy of one ball be transferred to another?

Sound: activity sheet 1

Sound: activity sheet 8

Sound (basic science inquiry kit)

Sound (concept map)

Sound discrimination (activity card).

Speed (activity 2). Coleman, Tim

[Stages of power] (transparency)

Study guide to accompany Fundamentals of physics by Halliday and Resnick (3<sup>rd</sup> ed. & 3<sup>rd</sup> extended ed. Brownstein, Kenneth, Marcella, Thomas & Williams, Stanley. John Wiley & Sons, 1998.

[Suspension systems] (transparency)

Teaching physics with toys: activities for grades K-9. Taylor, Beverley A..P.;Poth, James; Portman, Dwight J. McGraw Hill, 1995.

Activities for grades k-3 p9-92  
Activities for grades 4-6 P93-200  
Activities for grades 7-9 P201-288  
Activities indexed by key process skills p289-291  
Activities indexed by topics p292-295  
Alphabetical listing of activities p296  
Balance toys and center of gravity p219-226  
Balancing stick p45-52  
Balloon on a string p33-38  
Becoming involved with the TOYS project p1  
Bounceability p161-168  
Bouncing balls p67-72  
Bull roarer p271-174  
Comparing mass using a pan balance p15-18  
Crash test p101-106  
Delta dart p251-256  
Doc shock p195-200  
Downhill racer p207-212  
Energy toys learning center p169-176  
Exploring energy with an explorer gun p153-169  
Falling filters p239-244  
Floating cans p233-238  
Forces and motion p95-100  
Gear up with a lego heli-tractor p181-186  
Gravity makes things fall p11-14  
Levitation using static electricity p187-194  
Magic balloon p79-84  
Magnet cars p85-88  
Measuring mass using a pan balance p19-24  
Mini motor p257-262  
Organization of the book p2-3  
The particle nature of matter p4-5  
Pedagogical strategies p4-6  
Physics with a darda coaster p141-152  
Ping pong puffer p39-44  
The projectile car p213-218  
Push-n go p123-132  
Ramps and cars p25-32  
Safety p7  
School box guitar p89-92  
Simple machines with lego p177-180  
Singing chimes p275-282  
The six-cent top p59-66  
The skyhook p53-58  
Snap, crackle, pop p73-78  
Sound tube p263-270  
Stick around p245-151  
Teaching science with TOYS p1  
Teaching science with TOYS Program staff pii-vi

The toy that returns p133-140  
[Toys] (photograph). Front cover  
Tube spectroscope p283-288  
Two-dimensional motion p107-114  
Understanding speed p115-122  
Using this book p2  
Walking feet p203-206  
Whirling stopper p227-232

3-D Magnetic field

Turbine engines

Ultraviolet detecting beads

Unscramble the letters below to identify six simple machines

Useful science projects...from Edison. R. Schultz, Thomas Alva Edison Foundations, 1979.

Waves, sound, and light. McDougal Littell Science series. McDougal Littell, 2005.

The Wright way: The process of invention (Poster). Centennial of flight series. NASA.

About the poster  
Activities for grades k-12  
Attention high school students!  
The bicycle business  
The bicycle business (advertisement)  
Building the glider  
Celebrating a century of powered flight: The Wright brothers turned their dreams into reality and revolutionized the world.  
Challenge for older students  
Construction and experimentation  
Controlling the aircraft  
Controlling the aircraft (photograph)  
Developing student understanding, grades 5-8  
Developing student understanding, grades k-4  
Developing student understanding, grades 9-12  
Discussion  
Educational research sites  
Elevator (diagram)  
Extension activity  
A few questions to get your students started  
The flying toy  
The flying toy (diagram)  
Fundamental concepts and principles for historical perspectives, grades 9-12  
Fundamental concepts and principles for science as a human endeavor, grades 5-8  
Fundamental concepts and principles for science as a human endeavor, grades k-4  
Fundamental concepts and principles for science as a human endeavor, grades 9-12  
Fundamental concepts and principles for the history of science, grades 5-8  
Fundamental concepts and principles for the nature of science, grades 5-8  
Fundamental concepts and principles for the nature of scientific knowledge, grades 9-12  
Fuselage (diagram)  
History and nature of science  
Huffman Prairie, Dayton, Ohio (photograph)  
The kite/gliders experiments  
NASA resources for educators  
NASA student competition opportunities  
NASA x-lanes  
The 1901 glider (photograph)  
Ohio, birthplace of aviation (silhouette)  
The process of invention  
References  
The search for control  
The search for control (photograph)  
The solution  
The solution (photograph)  
Susan and Milton Wright (holograph)  
Teacher background  
To the educator  
Use these NASA educator resources to teach and reinforce flight concepts  
Wilbur and Orville Wright, inventors

The wind tunnel  
The wind tunnel (photograph)  
Wing (diagram)  
The Wright brothers' story  
The Wright 1905 flyer  
The Wright 1905 flyer (photograph)  
The Wright 1904 flyer  
The Wright 1904 flyer (photograph)  
Waves, sound, and light. McDougl Little Science series. McDougal Littlell, 2005

Wright, Orville (photograph)  
Wright, Wilbur (photograph)

**The following materials are available, in EARTH SCIENCE LIBRARY, in the first and second cabinets from the left in ED 200**

Angular momentum p224-25 IN Math & the cosmos. Bangs, Lawrence B. Wildridge Software, 2001

Conventional energy. P. 463. IN Environmental Science: A Global Concern, William P. Cunningham and Saigo, Barbara, 1999

The energist: Getting to know coal. National energy foundation, 1995

Answers p8  
Clean coal and the environment p5-6  
Coal gas (lab activity) p5  
Coal to electricity (activity)  
Combustion p6  
Continuous p3  
Conventional p3  
Conversion p6  
Coal products (connected word puzzle) p4  
The distribution and marketing of coal p4  
The formation of coal p1-2  
The future is now for coal p8  
Getting methane from coal (lab activity) p6  
Glossary p7  
Growing a coal garden (lab activity) p8  
How coal is mined p2-3  
Longwall p3  
Longwall mining (drawing)  
Marketing p4  
The National Energy Foundation p8  
Post-combustion p6  
Pre-combustion p6  
[Products made from coal] (drawing)  
Room and pillar continuous mining (drawing)  
Shortwall p3  
Surface mining (drawing)  
There are three main kinds of underground mines... (drawing)  
Transportation p4  
Underground mining p2-3  
The uses of coal p4-5  
Where coal is located in the United States (including map chart) p2  
Word search [about coal] p2

Energy p. T111. IN Environmental science: annotated teacher's edition. Karen Arms. 1994

Energy: A teacher's guide by Museum-to-go (Science Kit). The Franklin Institute, 1988.

Factory (Computer simulation program for 2<sup>nd</sup> grade) Sunburst Communications and The National Council of Teachers of Mathematics, 1989.

Heat transfer p48-51 IN Weather & climate (Teacher's ed). Prentice Hall Science explorer series. Prentice Hall, 2002.

How do fluids of different densities behave? P76 IN Weather & climate (Teacher's ed). Prentice Hall Science explorer series. Prentice Hall, 2002.

Magnetism/ Electric Models: A teacher's guide by Museum-to-go (Science Kit). The Franklin Institute, 1986.

Matter and energy pp. 13-17. IN Earth Science: Study and Review Guide. Scott, Foresman, 1990

Matter, energy, and life. P.45. IN Environmental Science: A Global Concern, William P. Cunningham and Saigo, Barbara, 1999

More about magnetism and electric models which includes a glossary and reference list.

Observing the motion of the planets p22 IN Math & the cosmos. Bangs, Lawrence B. Wildridge Software, 2001

Other motions p23-24 IN Math & the cosmos. Bangs, Lawrence B. Wildridge Software, 2001

Paper planes for flying fun (instructs to make a speed demon, b-52 bomber, and the seaplane).

Retrograde motion p23 IN Math & the cosmos. Bangs, Lawrence B. Wildridge Software, 2001

Sound lesson plan by Steven Newman

Student lab notebook with spiral binding for physical science. Hayden-McNeil Specialty Product.

Understanding the motions of stars and planets p18-26 IN Math & the cosmos. Bangs, Lawrence B. Wildridge Software, 2001

Understanding the motions of stars and planets p14 IN Math & the cosmos [Student book]. A bigger world series. Wildridge Software, 2001

What happens when air is heated? P48 IN Weather & climate (Teacher's ed). Prentice Hall Science explorer series. Prentice Hall, 2002.

### **The following materials are available in the LIFE AND HEALTH SCIENCES LIBRARY, in the third cabinet from the left in ED 200**

Terrarium habitats teacher's guide, grades K-6: Skills: observing, comparing, describing, measuring, communicating, organizing, experimenting, recording, drawing conclusions, building models; Concepts: soil and ground habitats, ecology, life cycle, food webs, nutrient cycle, decomposition, recycling, adaptations, animal structures and behavior; Science themes: systems and interactions, patterns of change, structure, energy, matter, evolution; Mathematics strands: pattern, number, measurement; Nature of science and mathematics: cooperative efforts, creativity and constraints, interdisciplinary, real-life applications. Hosoume, Kimi and Barber, Jacqueline. Great explorations in math and science series. Univ. of California at Berkeley, 1994.

- Adding earthworms to the terrarium p23-32
- Adding isopods to the terrarium p33-42
- Adding more to the terrarium p43-48
- Assessment suggestions p77-78
- Behind the scenes p59-66
- Building a terrarium habitat p15-22
- Exploring soil p5-14
- Literature connections p79-84
- Resources p51-58
- Summary outlines p67-76
- Time frame p3-5
- Two banana slug string band songs p49-50

### **The following materials are available in the GENERAL SCIENCE LIBRARY, in the sixth cabinet from the left in ED 200**

All change: In the absence of supersymmetry, a proton might decay into a positron and a pion, which would then split into two photons (chart) p51 IN *New Science*, 162 (2187), May 22, 1999. Reed Business Information

Atomic structure P76-80. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G. 1995.

Balloon in a bottle (lesson plan) p71-78 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Balloon in a bottle: Instruction and observation sheet (worksheet). From Investigating solids, liquids, and gasses with toys. P79 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Burping bottle (lesson plan) p81-86 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Burping bottle: Observing the bottle instruction and observation sheet (worksheet). From Investigating solids, liquids, and gases with toys, p87-88 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Combining Atoms p. 174. IN Science Interactions, Course III

Conductors and nonconductors p3 IN Hayes Solving science mysteries thru puzzles, games and individual activities, book 4 (Spirit duplicator masters). Broekel, Ray. Hayes School Publishing, 1979

Construction toys & models p22-34 IN Science fun with toys: A guide for parents and teachers, with resource descriptions for unique & educational toys. Sills, Thomas W. Dearborn Resources, 1999

Content: Physical science, middle school (CD-ROM) IN PowerZone: Great learning, great review, great fun: Science series, middle school (CD-ROMs). Learning Multi-systems, 2003

Cycling of Matter and Energy p. 142. IN Science Interactions, Teacher's Wraparound Edition, Course 4

Degrees of temperature p7 IN Hayes Solving science mysteries thru puzzles, games and individual activities, book 3 (spirit duplicator masters). Broekel, Ray. Hayes School Publishing, 1978

Drag (lab sheet) [2] IN Science Journal, grade 4. Hillel Academy.

Electrical Energy p. 566. IN Science Interactions, Teacher's Wraparound Edition, Course 4

Electricity p. 20. Science Interactions, Course III

Electricity and Magnetism p. 313. IN Integrated Science Laboratory Manual, Teacher's Edition

Electricity/Magnetism P66-70. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G.1995.

## Electromagnetic Waves p. 80. IN Science Interactions, Course III

Energy P51-55. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G.1995.

Energy and motion pR4-5 IN Houghton Mifflin Science discoveryworks extra practice, grade 2: Blackline masters [and] answer key . Houghton Mifflin

Fission and Fusion p. 566. IN Science Interactions, Course III

Force and motion P91-95. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G.1995.

Force and motion p23-33, 77-78 IN Science: parent connection, 6<sup>th</sup> grade. Chicago Public Schools, 2001

Forces and Machines p. 508. IN Science Interactions, Teacher's Wraparound Edition, Course 4

Forces and Pressure p. 20. IN Science Interactions, Course II

Friction p20 IN Hayes Solving science mysteries thru puzzles, games and individual activities, book 4 (Spirit duplicator masters). Broekel, Ray. Hayes School Publishing, 1979

Fundamental forces: Molecular interactions up close. Myakishev, G. P8-13 IN *Quantum [the magazine of math and science]*, 10 (5)

Gases, Atoms, and Molecules p. 424. IN Science Interactions, Course II

Geology, force and motion, ecosystem, conservation and machine 7<sup>th</sup> grade final.

Geology, force and motion, ecosystem, conservation and machine 7<sup>th</sup> grade final answer key and rubric IN 7<sup>th</sup> grade science final. Davis, Kim, 2001.

Heat P86-90. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G.1995

Light P61-65. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G.1995

Light and Vision p. 52. IN Science Interactions, Course I.

Machines p. 148. IN Science Interactions, Course II

Magnetic paths p4 IN Hayes Solving science mysteries thru puzzles, games and individual activities, book 3 (spirit duplicator masters). Broekel, Ray. Hayes School Publishing, 1978

Magnetism p. 48. IN Science Interactions, Course III

Matter P71-75. IN Science puzzlers! 150 ready-to-use activities to make learning fun, grades 4-8. Hoehn, Robert G. 1995

Matter p70-76 IN Science: parent connection, 6<sup>th</sup> grade. Chicago Public Schools, 2001

Matter in Solution p. 152. IN Science Interactions, Course I.

Molecules in Motion p. 208. IN Science Interactions, Course III

Motion p. 380. IN Science Interactions, Course I.

Motion, Forces and Energy p. 289. IN Integrated Science Laboratory Manual, Teacher's Edition

Physical science content review P101-128. IN Review & reteach: Skills and content review, grades 6,7, & 8 Science. Prentice Hall Sciences Explorer. 2002

Physical sciences and technology p199-308. IN Teaching children science: Discovery activities and demonstrations for the elementary and middle grades. Abruscato, Joseph. Allyn & Bacon, 2001.

Physics of Flight p. 700. IN Science Interactions, Teacher's Wraparound Edition, Course 4

Physics of Space Flight p. 764. IN Science Interactions, Teacher's Wraparound Edition, Course 4

Shape shifters lesson plan

Showing that air has mass (lesson plan) p99-102 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Showing that air has mass: Instruction and observation sheet (worksheet). From Investigating solids, liquids, and gases with toys. P103 IN Teaching science with toys. Sarquis, Jerry. Center for Chemistry Education, Miami University Middletown.

Solids, liquids, and gases pR8 IN Houghton Mifflin Science discoveryworks extra practice, grade 2: Blackline masters [and] answer key . Houghton Mifflin

Sound and Hearing p. 84. IN Science Interactions, Course I.

Sound and Light p. 333. IN Integrated Science Laboratory Manual, Teacher's Edition

Structure of the Atom p. 110. IN Science Interactions, Course III

Unit, lesson, and enrichment starter ideas: the physical sciences and technology p199-288. IN Teaching children science: Discovery activities and demonstrations for the elementary and middle grades. Abruscato, Joseph. Allyn & Bacon, 2001

Waves p. 538. IN Science Interactions, Course I

Work and Energy p. 116. IN Science Interactions, Course II

**The following materials are available in the MATHEMATICS LIBRARY, in the seventh and eighth cabinets from the left in ED 200**

How hot is it in metric? IN Suggested agenda for metric usage seminar.

Toy sports car endurance race IN Leprechaun murder mystery: A math problem solving activity. Huegel, Ye Song, Laino, Gina & Villarreal, Lissette. 2003.

**The following materials are available in the Other subjects section of the Teacher Quality Enhancement library, 3<sup>rd</sup> bookcase from the left in ED 205**

Conceptests.

How to use Conceptests p2

[Students using electronic Conceptests on Smartboard] (photographs) p3

**The following materials are available in the TEACHER PREPARATION LIBRARY, bottom shelf, left side, main room, Teachers' Writing & Resource Center, ED 111.**

*ENC focus: A magazine for classroom innovators*, 9(4), 2002

Mystery liquids (videotape) (Review). Wizda, Elaine, Peters, Jill, Bolster, L. Carey, Messenger, Mary Jo, Burns, Ruth Ann and Sheppard, Sandra. P69

Fundamental forces and fields: Activities and reader (text and teachers guide), by William J. Leonard, Robert J. Dufresne, William J. Gerace, & Jose P. Mestre (review). P79 IN *ENC focus: A magazine for classroom innovators* (2), 2001.

Investigating electrical systems (teacher's guide & student book), by Nancy M. Landes (review). P75-7 IN *ENC focus: A magazine for classroom innovators* (2), 2001.

PH laboratory and classroom activities: Physiology, pharmacology, and other pHantastic phenomena, by Carla R. Krieger (review). P80 IN *ENC focus: A magazine for classroom innovators* (2), 2001.

**The following materials are available in the MIDDLE SCHOOL LIBRARY, bottom shelf, right side, computer lab, Teachers' Writing & Resource Center, ED 111**

Barrington district 220 matter unit, sixth grade, first draft p18-27 IN Curriculum mapping. Reichel, Anne Grall. Regional Office of Education, Lake County Educational Service Division, 2000.

Chemistry/physics p6 IN Curriculum mapping. Reichel, Anne Grall. Regional Office of Education, Lake County Educational Service Division, 2000.

Determining acceleration p46-48 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Determining average speed p44 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Determining constant speed p44-45 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Effect of color on albedo p63-64 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Effect of sediment suspended in water on light intensity p107 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Effect of water on light intensity p105-106 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Electricity p83-87, 91-94 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Electricity, magnetism, and electromagnetism p82-100 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Electromagnetism p90, 96 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Gas laws p72-81, 73 IN Integrating mathematics, science, and technology: A skill-building approach. Mason, Diana, Mittag, Kathleen Cage & Taylor, Sharon E. Allyn & Bacon 2003

Math & music (CD-ROM). A bigger world series. Wildridge Software, 2000

Physics p169-172. IN Content area standards for educators (2<sup>nd</sup> ed). Illinois State Board of Education, Division of Professional Preparation and Recruitment, 2002.

Space, time, and relativity. P155-165. IN The aims of education and other essays. Whitehead, Alfred North Free Press, 1929.

## **The following materials are available in the VIDEO CABINET, in the Teachers' Writing Center, ED 111**

Exploring aeronautics (CD-ROM). National Aeronautics and Space Administration. Ames Research Center External Affairs Office, Multimedia R&D Group.

Get smart about energy? CD-ROM  
How an airplane flies  
The tools of aeronautics

Heliocentris presents The hydrogen age has begun (CD-ROM).  
Fuel cell talk (Power point presentation, PDF file, MPG file, Word file)  
Fuel cells in the classroom (Power point presentation, PDF file)  
Setting up the solar hydrogen science kit (Powerpoint presentation, PDF file, MPG file)

The physics of everyday phenomena: A conceptual introduction to physics (3<sup>rd</sup> ed). (CD-ROM)

Understanding magnetism (videotape) see Understanding sex (videotape) [and] Understanding magnetism

Understanding sex (videotape) [and] Understanding magnetism

Vectors & projectiles (Videotape). Conceptual physics alive series. Arbor Scientific, 1991. 47 mins

## **Sources noted on THE INTERNET**

*Subject:* Airbus: <http://travel.howstuffworks.com/a3805.htm>

*Subject:* Atoms: <http://education.jlab.org/atomtour/index.html>

*Subject:* Batteries: [www.acs.org/portal/a/c/s/1/feature\\_tea.html?id-c373e9fb623877bf8f6a4d8fe800100](http://www.acs.org/portal/a/c/s/1/feature_tea.html?id-c373e9fb623877bf8f6a4d8fe800100)

*Subject:* Camshafts: <http://auto.howstuffworks.com/camshaft.htm>

*Subject:* Electricity rubrics. <http://pals.sri.com/pals/tasks/5-8/ME122/rubric.html> Electrical circuits and switches rubric. Council of Chief State School Officers.

*Subject:* Literature search rubrics. <http://www.glenbrook.k12.il.us/gbssci/phys/projects/yep/endoyrub/litscrub.html>

*Subject:* Magnetometers: <http://image.gsfc.nasa.gov/poetry/workbook/page9.html> Soda bottle magnetometer activity

*Subject:* Magnets: [http://www.teachervision.fen.com/page/32655.html?wtlAC=GS\\_2005-05-31\\_email-h](http://www.teachervision.fen.com/page/32655.html?wtlAC=GS_2005-05-31_email-h)

*Subject:* Rockets: <http://collections.ic.gc.ca/science/english/phys/projects/rocket.html>

## **Online Tutorials available in the TWRC [ask for password] in Room ED 111**

[Chemical reactions—Online Tutorials](#)

[Electricity—Online Tutorials](#)

[Energy—Online Tutorials](#)

[Force—Online Tutorials](#)

[Force and motion—Online Tutorials](#)

[Light and illumination—Online Tutorials](#)

[Matter—Online Tutorials](#)

[Measurements—Online Tutorials](#)

[Momentum—Online Tutorials](#)

[Motion—Online Tutorials](#)

[Optics—Online Tutorials](#)

[The periodic table—Online Tutorials](#)

[Sound—Online Tutorials](#)

[States of matter—Online Tutorials](#)

[Thermal energy—Online Tutorials](#)

[Waves—Online Tutorials](#)

[Work and mechanical energy—Online Tutorials](#)