

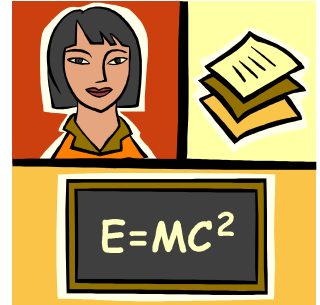
Cars in Your Classroom Resources

Teacher Resources:

Ancient Machines: From Wedges to Waterwheels, Woods, Michael & Mary B. Woods; Lerner, 1999

ISBN: 0-822-52994-7

Description: Discusses the invention of six simple machines in various ancient civilizations from the Stone Age to the fall of the Roman Empire.



Awesome Experiments in Force and Motion, DiSpezio, Michael; Sterling Publishing Co., Inc., 2006

ISBN: 0-8069-9821-0.

Description: Easy to duplicate, experiments that demonstrate the intended principles and encourage critical thinking.

Car Smarts: Hot Tips for the Car Crazy, Edmonston, Phil and Sawa, Maureen; Tundra Books, 2003.

ISBN: 0-88776-646-3

Grade Level: 3-6

Description: Provides solid information about topics such as the history of the automobile, the major systems of a car and how they work, elements of design, how to choose a good car, aspects of ownership, and the automobile's future.

Forces, Mole, Karen Bryant, Rigby Interactive Library, 1997.

ISBN: 1-57572-108-2.

Description: Explains the basic principles of forces and movement through direct observation and through looking at everyday experiences.

Force and Motion, FlashKids Editors; Spark (Flashcharts Series), 2004

ISBN: 1-411-40158-1

Description: This four-page chart covers Newton's laws of motion, Aristotle and Galileo, gravity, g-force, and center of gravity.

Forces and Motion, De Pinna, Simon; Raintree, 1998

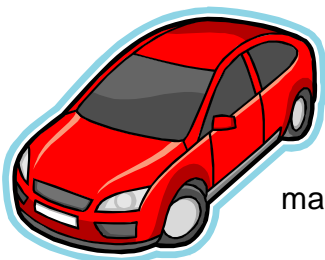
ISBN: 0-817-24962-1

Description: Explains the concepts of force and motion through experiments that can be performed at home.

How Cars Work, Newton, Tom; Black Apple Press, 1999

ISBN: 0-966-86230-9

Description: Understand the basics of how cars work. This book was designed for high school students but is a great resource for anyone. It is often used by automotive service managers and mechanics to help customers understand repairs.

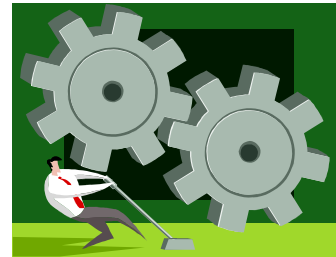


AMERICA'S CAR MUSEUM®

Janice VanCleave's Machines: Mind-Boggling Experiments You Can Turn into Science Fair Projects, Pratt VanCleave, Janice; Wiley and Sons, 1993

ISBN: 0-471-57108-3

Description: A collection of science projects and experiments exploring simple machines such as levers and screws.



Science Experiments with Forces, Nankivell-Aston, Sally; Franklin Watts, 2000

ISBN: 0-531-14582-4

Description: Students will find out about different types of forces and what happens when forces act on objects. Experiments include sorting, measuring, and feeling forces. Discusses the forces involved with air and water motion.

Spinning Blackboard and Other Dynamic Experiments on Force and Motion, Doherty, Paul & Don Rathjen; Wiley and Sons, 1996

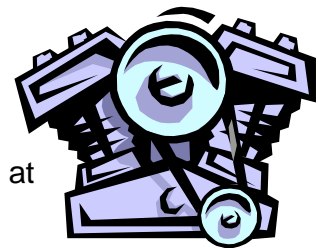
ISBN: 0-471-11514-2

Description: Presents over 20 experiments exploring the principles of mechanics. The experiments are miniature versions of some of the exhibits at the Exploratorium, San Francisco's famed museum of science, art, and human perception.

The Way Things Work, Macaulay, David; Dorling Kindersley Publishers Ltd;

ISBN: 1-405-30238-0

Description: The inner workings of hundreds of machines and devices are explained in this fun, colorful and unique look at technology through time.



The World of Science, Parragon Publishing; 2007

ISBN: 1-405-49924-8

Description: Includes seven chapters covering Matter/Chemicals, Energy/Motion/Machines, Electricity/Magnetism, Light/Sound, Earth/Life, Space/Time, plus over 60 Science Experiments with precise instruction for safely carrying them out. Illustrations and photographs nicely support each concept.

Wedges, Welsbacher, Anne; Capstone Press, 2001

ISBN: 0-736-80614-8

Description: Uses everyday examples to show that wedges are simple machines that make pushing, pulling apart, and lifting easier



AMERICA'S CAR MUSEUM®

Non Fiction Books for Young Readers:

A History of Cars, Corbett, David; Gareth Stevens Publishing, 2005

ISBN: 0-8368-6286-4

Grade Level: 3-5

Description: Supports both the science and social studies curriculum. Provides a clear, chronological history of each topic, explaining how both technology and our ways of measuring time have changed over the years and how these innovations have changed the way we live.



Around and Around, Murphy, Patricia J.; Scholastic Library, 2002

ISBN: 0-516-22550-2

Grade Level: 1-2

Description: Introduces circular movement and the forces that affect it.

Back and Forth, Murphy Patricia J.; Scholastic Library, 2002

ISBN: 0-516-22552-9

Grade Level: 1-2

Description: A simple introduction to back-and-forth movement

CAR, Sutton, Richard and Baquedano Elizabeth; DK (Eyewitness Series), 2005

ISBN: 0-7566-1393-0

Grade Level: K-5

Description: Historically and technologically based with many fascinating tidbits accompanying real photographs.

Car Smarts: Hot Tips for the Car Crazy, Edmonston, Phil and Sawa, Maureen; Tundra Books, 2003.

ISBN: 0-88776-646-3

Grade Level: 3-6

Description: Provides solid information about topics such as the history of the automobile, the major systems of a car and how they work, elements of design, how to choose a good car, aspects of ownership, and the automobile's future.

Experiments with Motion, Tocci, Salvatore; Children's Press (True Book Series), 2003

ISBN: 0-516-27467-8

Grade Level: 2-4

Description: Projects and experiments explore motion and the forces that cause motion, covering such topics as inertia and resistance.



Force and Motion; Delta Education

ISBN: 1-592-42252-7

Grade Level: 2-3

Description: Students read about the relationship between force, motion, and work. They discover how the six simple machines help people do work by moving objects easier, faster, or farther. Finally, students find out how the waterwheel works and how friction affects motion.

Full of Energy, Hewitt, Sally; Children's Press, 1998



AMERICA'S CAR MUSEUM®

ISBN: 0-516-20792-X

Grade Level: K-5

Description: Offers an interactive approach introducing the concept of energy as it is found in food, sun, wind, water, and other sources and as it is used for nutrition, warmth, and motion.

How Do You Lift A Lion?, Wells, Robert E.; Albert Whitman, 1996

ISBN: 0-807-53421-8

Grade Level: K-2

Description: A simple introduction to the use of levers, pulleys, and wheels to move heavy objects. Technical terms are introduced in the text as well as in a glossary.



I Fall Down, Cobb, Vicki; HarperCollins, 2004

ISBN: 0-688-17842-1

Grade Level: K-3

Description: Why do things fall down? In this book, illustrations and playful type lead you to explore how gravity works. With materials like molasses, sponges, soap, and rubber bands, the book suggests casual activities to play with both gravity and weight.

Inclined Planes, Dahl, Michael S.; Capstone Press, 1996

ISBN: 1-560-65447-3

Grade Level: K-2

Description: Describes many different kinds, uses, and benefits of inclined planes, and provides basic information about levers, inclined planes, pulleys, and wheels and axles.

Learn about the Way Things Move, Gold-Dworkin, Heidi; McGraw-Hill, 2000

ISBN: 0-071-34824-7

Grade Level: K-2

Description: Describes the basic forces that speed us up, slow us down, and cause things to rise and fall.

Machines We Use, Hewitt, Sally; Children's Press, 1998

ISBN: 0-516-26392-7

Grade Level: K-3

Description: Examines various simple machines and how they are used to make work easier. Provides activities using wheels, levers, pulleys, screws, and more.

Make It Move!, VanVoorst, Jennifer; Capstone Press, 2004

ISBN: 0-736-82939-3

Grade Level: K-2

Description: Simple text and photographs introduce simple machines and give examples of their everyday use.

Motion, Farndon, John; Benchmark Books, 2002

ISBN: 0-761-41471-1

Grade Level: 2-5

Description: Motion is a concept all young readers can relate to. It is part of their everyday lives. The text reveals concepts and laws of motion.



AMERICA'S CAR MUSEUM®

Motion and Movement, Frisch, Joy; Smart Apple Media, 2003

ISBN: 1-583-40160-1

Grade Level: 2-4

Description: Examines the topics of motion, force, gravity, and friction.

Pulleys, Dahl, Michael S.; Capstone Press, 1996

ISBN: 1-560-65445-7

Grade Level: 1-2

Description: Describes many different kinds, uses, and benefits of pulleys. Provides basic information about levers, inclined planes, pulleys, and wheels and axles.

Push and Pull, Schaefer, Lola M. & Gail Saunders-Smith; Capstone Press, 1999

ISBN: 0-736-80396-3

Grade Level: 1-2

Description: Simple text and photographs describe and illustrate push-and-pull movement.

Simple Machines, Fowler, Allan; Scholastic Library, 2001

ISBN: 0-516-27310-8

Grade Level: 1-2

Description: Describes and compares four kinds of simple machines, levers, pulleys, wheels, and ramps.

Up and Down, Murphy, Patricia J.; Lerner (Rookie Read-About Science Series), 2004

ISBN: 0-516-22553-7

Grade Level: 1-2

Description: A simple introduction to up-and-down movement.



The Automobile (Great Inventions), Lincoln Collier, James; Benchmark Books (NY), 2005

ISBN: 0-7614-1877-6

Grade Level: 3-5

Description: History of the invention of the automobile.

The Ways Things Move, Nelson, Robin; Lerner, 2004

ISBN: 0-822-55136-5

Grade Level: K-2

Description: Simple text introduces how different objects move, in different patterns and in different speeds, when pushed or pulled.

The Way Things Work, Macaulay, David; Dorling Kindersley Publishers Ltd;

ISBN: 1-405-30238-0

Grade Level: 3-5

Description: The inner workings of hundreds of machines and devices are explained in this fun, colourful and unique look at technology through time.

The World of Science, Parragon Publishing; 2007

ISBN: 1-405-49924-8

Grade Level: 3 and up

Description: Includes seven chapters covering Matter/Chemicals, Energy/Motion/Machines, Electricity/Magnetism, Light/Sound, Earth/Life, Space/Time, plus over 60 Science Experiments with precise instruction on safely carrying them out. Illustrations nicely support each concept.



AMERICA'S CAR MUSEUM®

What Makes A Magnet?, Branley, Franklyn M.; HarperCollins, 1996

ISBN: 0-064-45148-8

Grade Level: K-4

Illustrated by: True Kelley

Description: Addresses the properties and behaviors of magnetism and the history and uses of magnets. Activities include making a magnet and a compass.

What's Faster than a Speeding Cheetah?, Wells, Robert E.; Albert Whitman, 1997

ISBN: 0-807-52281-3

Grade Level: K-5

Description: Compares the speed of various animals, from humans to cheetahs to peregrine falcons, with even faster things like rockets, meteoroids, and light.

Whirlers and Twirlers: Science Fun with Spinning, Cobb, Vicki; Lerner, 2001

ISBN: 0-761-31573-X

Grade Level: 2-4

Illustrated by: Steve Haefele

Description: Features simple experiments that introduce readers to balance, spin, centripetal and centrifugal forces, friction, and other concepts.

Stories for Young Readers:

Cars and Trucks and Things that Go; Scarry, Richard; Giant Golden Books, 2000

Grade Level: PreK-1

ISBN: 0307157857

Description: On their way to the beach for a picnic the Pig family encounters almost every kind of transportation vehicle imaginable--and imaginary.



If I Built a Car, Van Dusen, Chris; Puffin Books, 2007

ISBN: 0142408255

Grade Level: PreK-3

Description: A young boy relates all of the wonderful things about the car he plans to design, including safety features, a pool, a robot driver, and the ability to go underwater and fly through the air. (Winner of the 2006 E.B. White Read Aloud Award)

This Car, Collicutt, Paul; Farrar, Straus and Giroux, 2002

ISBN: 0-374-39965-4

Grade Level: PreK-K

Description: A young student reader about cars.

Mirette And Bellini Cross Niagara Falls, McCully, Emily Arnold; Putnam, 2000

ISBN: 0-399-23348-2

Grade Level: 2-4

Description: With the help of a young immigrant boy they meet on their crossing to America, two famous tightrope walkers manage to survive the treachery of a rival showman.

Mirette On The High Wire, McCully, Emily Arnold; Putnam, 1997

ISBN: 0-399-22130-1

Grade Level: 1-2



AMERICA'S CAR MUSEUM®

Description: Mirette learns tightrope walking from Monsieur Bellini, a guest in her mother's boardinghouse, not knowing that he is a celebrated tightrope artist who has withdrawn from performing because of fear.

Ten Apples Up On Top!, LeSieg, Theo; Random House, 1961

ISBN: 0-679-89247-8

Grade Level: K-3

Illustrated by: Roy McKie

Description: This book has been helping young students learn to count and read simultaneously for over 40 years. Simple illustrations and rhymes tell the story of an apple-balancing competition.

Tug-of-War: All About Balance, Hall, Kiarsten; Children's Press (Beastieville Series), 2004

ISBN: 0-516-22899-4

Grade Level: K-2

Illustrated by: Bev Luedecke

Description: When the bigger Beasties take on the smaller Beasties in a game of tug-of-war, they soon learn that size matters.

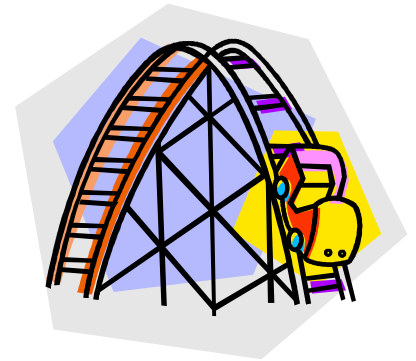
Up And Down On The Merry Go Round, Archambault, John; Henry Holt, 1991

ISBN: 0-805-01638-4

Grade Level: 1-2

Illustrated by: Bill Martin Jr.

Description: In this rhyming story, children describe the sights and sounds of riding on the merry-go-round.



Websites:

About.com - The History of Cars and Engines

http://inventors.about.com/od/cstartinventions/a/Car_History.htm

This site includes many links to articles regarding the evolution of cars, car engines and accessories plus the various inventors involved.

American Life and Society

http://www.autolife.umd.umich.edu/Gender/Resources_G_Casestudy.htm

Femininity and the Electric Car. Explores how stereotypes of men and women differ in the late nineteenth and twentieth century and how these stereotypes influenced who should drive electric verses gasoline-powered cars.

Amusement Park Physics (student and teacher resource)

www.learner.org/interactives/parkphysics

What variables and laws of physics affect amusement park ride design? At this website, you'll find out by designing your own roller coaster and experimenting with bumper car collisions.

Electric Car Engine (student and teacher resource)

<http://auto.howstuffworks.com/electric-car2.htm>

An introduction to electric cars, plus photos and graphics of how they work.



AMERICA'S CAR MUSEUM®

Exploratorium Snacks: Center of Gravity (teacher resource)

www.exploratorium.edu/snacks/center_of_gravity.html

Here is a simple way to find the balance point of any long, thin object. All that is needed is a long stick (like a meter- or yardstick) and a lump of clay.

Exploratorium Snacks: Downhill Race (teacher resource)

www.exploratorium.edu/snacks/downhill_race.html

Directions are given for making two rolling "wheels" from cookie tins. Inside, magnets are placed in the center or around the rim to compare how the added weight affects the wheels speeds.

Fear of Physics (student and teacher resource)

www.fearofphysics.com/index1.html

This site has a variety of force and motion simulations and videos. Some of the current activities are "Speed and Acceleration," "Collisions," "Cart Throws Ball," "What is Friction?" "Why Things Fall," "Why Satellites Don't Fall," "Make Your Jump Shot," and "First One Down."

How Roller Coasters Work (student and teacher resource)

www.howstuffworks.com/roller-coaster.html

Examine the principles that keep coaster cars flying around their tracks and look at the hardware that keeps everything running, as well as the forces that make the ride so much fun.



How Stuff Works

Car Engine

<http://auto.howstuffworks.com/engine2.htm>

Internal Combustion Engine

<http://auto.howstuffworks.com/engine1.htm>

How Water Slides Work (teacher resource) www.howstuffworks.com/water-slide2.html

Illustrations and photographs show the construction of an intricate water slide, which looks like a fantastic classroom runway construction.

LeMay: America's Car Museum

<http://www.lemaymuseum.org/>

Learn about our Museum and our plans for the future. Visit our education page to find out how you can schedule a visit to the Museum with your class.

Rader's Physics 4 Kids

http://www.physics4kids.com/files/motion_laws.html

Newton's Laws of Motion explained for kids.



AMERICA'S CAR MUSEUM®

Science: Physical Processes – Forces in Action

http://www.bbc.co.uk/schools/ks2bitesize/science/activities/forces_action.shtml

An interactive site to help students understand force.

Science: Physical Processes – Friction

http://www.bbc.co.uk/schools/ks2bitesize/science/revision_bites/friction3.shtml

An interactive site to help students understand friction.

That's Racin'

<http://www.thatsracin.com>

This site covers NASCAR racing, and includes articles of interest to students. A section called "Ask Ernie" allows kids to send questions about racing via e-mail.



The Discovery Channel

<http://www.discoverychannel.co.uk/cars/timeline/timeline.shtml>

A History of Cars Timeline

The Ford Motor Company

<http://www2.ford.com/display.asp?story=358>

Ford's Web site features information on car racing, the history of the company, and environmental concerns, including the use of recycled materials. Several concept cars that incorporate racing technologies are described in detail.

Think Quest

<http://library.thinkquest.org/26471/thepast.html>

A historical timeline of the past, present and future of cars.

Tryscience.org Fieldtrips (student and teacher resource)

www.tryscience.org/fieldtrips/fieldtrip_home.html

Use an interactive map of the world to find and explore a science and technology center or museum near you. You can also find online adventures and field trips, ideas for experiments at home, plus live webcams. TryScience.org is your gateway to experience the excitement of contemporary science and technology through on and offline interactivity with science and technology centers worldwide.

Vocabulary and Image Websites:

The Complete Auto Repair Glossary (About.com)

http://autorepair.about.com/od/glossary/a/glossary_new.htm

Your Dictionary.com

<http://www.yourdictionary.com>

Answers.com

<http://www.answers.com>



AMERICA'S CAR MUSEUM®

Dictionary.com

<http://dictionary.reference.com/>

Dictionary of Automotive Terms

<http://www.motorera.com/dictionary>

An Illustrated glossary for automobiles, motorcycles, bicycles and motors.

Merriam-Webster Visual Dictionary Online

<http://visual.merriam-webster.com/science.php>

Products:

Motorworks Engine Kit. Smithsonian (price online ~ \$29.95)



AMERICA'S CAR MUSEUM®