

Physics Resource List for Grades K through 4

The Resources in this document can be used with the Physics Curriculum Packet for grades K through 4.

Books

Nonfiction and Biography

- All About Stephen Hawking, 2018 by Chris Edwards (Author), Amber Calderon (Illustrator).
This is about the life of Stephen Hawking, who made cosmology, or the study of the universe, accessible to everyone.
- Gravity, 2014 by Jason Chin (Author, Illustrator).
The author has taken a complex subject and made it accessible to young readers in this unusual, innovative, and beautiful book.
- How Machines Work: Zoo Break! 2015 by David Macaulay (Author)
Complete with a unique jacket with an interactive compound machine incorporating several of the simple mechanisms featured in the book, this book uses models and illustrations (and sloths!) to demonstrate the technology of six simple machines: levers, pulleys, screws, inclined planes, wedges, and wheels.
- Isaac Newton and Physics for Kids: His Life and Ideas with 21 Activities, 2009 by Kerrie Logan Hollihan (Author).
This book gives us a good look at this brilliant and complex man, including 21 hands-on projects that explore the scientific concepts Newton developed.
- The Kids' Book of Simple Machines: Cool Projects & Activities that Make Science Fun! 2015 by Kelly Doudna (Author).
Learning about the six simple machines can be fun. Through exciting science projects and activities kids can easily do at home or school, tomorrow's scientists and engineers will have a blast learning about simple machines and how they make daily life easier.
- Magnets Push, Magnets Pull, 2017 by David A. Adler (Author), Anna Raff (Illustrator).
This title covers the basics of magnetism. Terms such as attraction, pole, electromagnetism and force are plainly explained.

- Marie Curie (Little People, Big Dreams), 2017 by Isabel Sanchez Vegara (Author), Frau Isa (Illustrator).
The book features Marie Curie, whose love of learning helped her to revolutionize the fight against cancer with her discovery of radium and polonium. This biography comes with extra facts about Marie's life at the back.
- Odd Boy Out: Young Albert Einstein, 2008 by Don Brown (Author).
Albert Einstein's ideas were destined to change the way we know and understand the world and our place in the universe.
- STEM Starters for Kids Physics Activity Book: Packed with activities and physics facts, 2018 by Jacoby (Author), Barker (Illustrator).
The acronym "STEM" stands for (S)cience, (T)echnology, (E)ngineering, and (M)ath. This book aims to interest children in these areas of study.
- What Does A Wheel Do? (How? What? Why), 2002 by Jim Pipe (Author).
Explains the way a few simple things work using puzzles and demonstrations.
- Women in Physics | A Science Book for Kids! 2017 by Mary Wissinger (Author) and Danielle Pioli (Illustrator).
Concepts covered in this book include: Matter, Mass, Force, Gravity, Atoms, Elements, X-rays, Radioactivity, Observation, Research, Hypotheses, Experiments, ...and more! Scientists profiled include Emilie du Chatelet, Laura Bassi, Marie Curie, Irene Joliot-Curie, and Chien-Shiung Wu.

Fiction

- George's Secret Key to the Universe, 2009 by Stephen Hawking (Author), Lucy Hawking (Author), Garry Parsons (Illustrator).
Famous physicist Stephen Hawking and his daughter, Lucy, provide a great adventure that explains fascinating information about our universe, including Dr. Hawking's latest ideas about black holes. (Series)
- Mahalia Mouse Goes to College, 2007 by John Lithgow (Author), Igor Oleynikov (Illustrator).
Sent by her parents to find food, Mahalia Mouse finds herself trapped in a backpack and transported to a physics classroom at Harvard University, where she discovers an aptitude for science.
- Newton and Me, 2013 by Lynne Mayer (Author), Sherry Rogers (Illustrator).
While at play with his dog, Newton, a young boy discovers the laws of force and motion in everyday activities such as throwing a ball, pulling a wagon, and riding a bike.

- On a Beam of Light: A Story of Albert Einstein, 2016 by Jennifer Berne (Author), Vladimir Radunsky (Illustrator).
Parents and children alike will appreciate this moving story of the powerful difference imagination can make in any life.
- Professor Astro Cat's Atomic Adventure, 2016 by Dr. Dominic Walliman (Author), Ben Newman (Illustrator).
This adventurous feline will take you on a journey through the incredible world of physics. Learn about energy, power and the building blocks of you, me and the universe.
- Roller Coaster, 2006 by Marla Frazee (Author).
Get ready to experience the thrill of riding a coaster for the very first time in this vibrant new adventure.
- Splat! Wile E. Coyote Experiments with States of Matter (Wile E. Coyote, Physical Science Genius), 2014 by Suzanne Slade (Author), Christian Cornia (Illustrator).
Wile E. Coyote wants nothing more than to get hold of Road Runner. Watch as he uses liquids, solids, and gases in clever ways to catch that bird.

Magazines, Journals, Miscellaneous

- Crayon Physics Deluxe (purchased game). Highly rated and award-winning Innovative game that combines physics puzzles and drawing.
<http://www.crayonphysics.com/>
- Discover Magazine Online: Science and Physics
(Requires online registration) <http://discovermagazine.com/topics/space-physics>
- Finger Physics (Download the app for Apple and Androids). Blocks move and react to stimuli as they would in the real world, and as kids play with them, they can see the laws of physics in action. *Finger Physics* is essentially a game and science experiment rolled into one.
- Science News for Students: Online magazine.
<https://www.sciencenewsforstudents.org/>
- Simple Machines by Tinybop: Excellent elementary NGSS engineering practices embedded in fun games. (Download the app for Apple and Androids).

Online Links

These sites have a rich array of resources, including background information, simulated experiences, and much more.

- Activities from the San Francisco Museum Exploratorium
<https://www.exploratorium.edu/explore/activities>
- Nasa Kids Club: a place to play games and learn about space.
<https://www.nasa.gov/kidsclub/index.html>
- Rader's Physics for Kids: Physics for everyone! <http://www.physics4kids.com/>
- Science Games: from PBS Kids <http://pbskids.org/games/science/>

For the Educator

- Lessons in Physics
http://teachengineering.org/search_results.php?simple=physics
Part of the Teach Engineering Web site, this section provides educators with fun and exciting lesson plans and activities to teach physics to elementary through high school students. Activities engage students of all ages in the science of physics.
- Physics Research Overview
<http://www.nsf.gov/news/overviews/physics/index.jsp>
Physics begins with the everyday physical world around us and goes on to give us many answers--along with a rich and detailed account of things like force, motion, gravity, heat, light, electricity and magnetism--that actually give rise to the everyday world. This overview page on the National Science Foundation's Web site provides insight through funded research that everyone can benefit from.
- STEAM Kids: 50+ Science/Technology/Engineering/Art/Math Hands-On Projects for Kids, 2016 by Anne Carey (Author), Ana Dziengel (Contributor), Amber Scardino (Contributor), & 8 more.
A year's worth of captivating STEAM (Science, Technology, Engineering, Art & Math) activities. Created by an MIT engineer, award winning educators, designers, and homeschooling experts, STEAM Kids will inspire your children to: question like a scientist, design like a technologist, build like an engineer, create like an artist, and deduce like a mathematician. Bonus materials will make things easy for parents and educators, and include: a handy weekly planning guide, project shopping lists, STEAM journal and more. So, gather up your curious kids and get your STEAM on!
- We Are Teachers Lesson Plans
<https://www.weareteachers.com/simple-physics-experiments-for-kids-pushing-and-pulling/>
Simple Experiments to Introduce Kids to Physics. It is never too early to start having fun with Physics!