

Good Presents for Aspiring Mad Scientists



General resources: www.societyforscience.org (*Science News* and science fairs); www.homesciencetools.com (usually lowest prices/widest selection, free project ideas; Danger, Will Robinson—some unscientific creationist books); teachersource.com (good selection); www.sciplus.com (ever-changing stock of interesting stuff); scientificsonline.com (fairly wide selection, often overpriced); www.thehomescientist.com/index.html; a2zscience.com (science store in Northampton, MA). Science book series by Janice VanCleave (good experiments); Golden Guide (most by Frank Rhodes or Herbert Zim, good overviews); DK Eyewitness (great photos); Joanna Cole (Magic School Bus, educational and entertaining); Brinley, *Mad Scientists' Club*; and Appleton II, *Tom Swift Jr.* (very inspirational, need a modern equivalent). Raymond E. Barrett & Windell H. Oskay, *The Annotated Build-It-Yourself Science Laboratory*. Judy Sierra & Stephen Gammell, *The Secret Science Project That Almost Ate the School* (just plain fun!). *Schoolhouse Rock!* on DVD & YouTube (great science songs and multiplication tables).

Aerospace engineering: <https://www.homesciencetools.com/aquapod-bottle-rocket-launcher>; water rockets (amazon.com and Toys R Us); Estes rockets (www.estesrockets.com, Walmart, Michaels, Toys R Us); *Klutz Book of Paper Airplanes* (2004); Guillow balsa gliders and rubber-band-powered planes (amazon.com and hobby stores); DVDs: *From the Earth to the Moon*, *In the Shadow of the Moon*, *Voyage to the Planets*

Archaeology: www.ebwpromotions.com/devens; www.vcoins.com/ancient; www.ancientlives.org; Collier & Manley, *How to Read Egyptian Hieroglyphs* (revised ed., 2003); DK Eyewitness *Ancient Egypt* (2008) & *Archeology* (2000); John White, *Hands-On Archaeology* (2005); Richard Panchyk, *Archaeology for Kids* (2001); ancient civilizations books in Barnes & Noble bargain aisles

Astronomy: www.meteoritemarket.com; telescopes at www.telescope.com & www.opticsplanet.com (avoid cheap telescopes in stores and catalogs—they are useless); www.homesciencetools.com/earth-science/astronomy-telescopes; Robert Bruce Thompson, *Illustrated Guide to Astronomical Wonders*; latest editions of Terence Dickinson, *NightWatch* and *Backyard Astronomer's Guide*; Consolmagno & Davis, *Turn Left at Orion*; H.A. Rey, *The Stars* and *Find the Constellations*; DVDs: *The Universe*

Biology: Amazing home biotech kits: www.ncbe.reading.ac.uk; microscopes: www.homesciencetools.com/microscopes (buy any of these, but avoid microscopes in catalogs & stores—they stink); www.homesciencetools.com/microscopes/accessories-slides-kits; www.homesciencetools.com/biology/dissection; Sea Monkeys (Walmart); Janice VanCleave, *Biology for Every Kid*, *Human Body for Every Kid*, *A+ Projects in Biology*; Luann Columbo, *Uncover the Human Body*; Human Body Inside Out Smart Lab; Joanna Cole, *The Magic School Bus Inside the Human Body*; Robert Bruce Thompson, *Illustrated Guide to Home Biology Experiments* (2012)

Chemistry: Thames & Kosmos chemistry sets, especially C3000 (most other modern chemistry sets are useless; search for best price online); www.homesciencetools.com/chemistry; Magic Rocks (Toys R Us and other toy stores); Janice VanCleave, *Chemistry for Every Kid* (1989) and *A+ Projects in Chemistry* (1993); Robert Bruce Thompson, *Illustrated Guide to Home Chemistry Experiments* (2008); Theodore Gray, *The Elements* (2012) and *Molecules* (2014)

Electrical engineering: www.elenco.com or search amazon.com for “Elenco” (manufacturer of Snap Circuits including Snap Rover, 130 in 1 Electronic Lab and other kits, Edge robot arm and other robot kits); www.homesciencetools.com/physics-engineering; Hexbug & AquaBot robots (amazon.com and Target); Lego Mindstorms (Toys R Us and online); Rudolf Graf, *Safe and Simple Electrical Experiments* (1973); www.raspberrypi.org



Forensic science: Robert Bruce Thompson, *Illustrated Guide to Home Forensic Science Experiments*; Walker & Wood, *Crime Scene Investigations*; supplies.homesciencetools.com/search?w=forensic; Toys R Us/www.amazon.com forensic kits

Geology: www.geod1.com; www.djminerals.com; www.homesciencetools.com/earth-science; Shaffer & Zim, *Rocks, Gems and Minerals* & Frank Rhodes, *Geology* (Golden Guides); Chris Pellant, *Smithsonian Handbooks: Rocks and Minerals*; Prinz, Harlow, & Peters, *Simon & Schuster's Guide to Rocks and Minerals*; Janice VanCleave, *Earth Science* books; Cole, *Magic School Bus Inside the Earth*

Math: Overholt & Kincheloe, *Math Wise!*; Muschla, *Hands-On Math Projects with Real-Life Applications*; Brunetto, *MathART Projects and Activities*; Janice VanCleave, *Math for Every Kid, Play and Find Out About Math*, and *Teaching the Fun of Math*; Hans Magnus Enzensberger, *The Number Devil: A Mathematical Adventure*

Mechanical engineering (search for best prices online, see www.homesciencetools.com, or check Costco, Walmart, or Target before Christmas): Erector Set Special Edition (and similar sets in a suitcase), K'NEX (especially Deluxe Simple Machines set), Thames & Kosmos Physics Workshop and Physics Pro; Lego Technic (Toys R Us); *Lego Crazy Action Contraptions* (Klutz book, amazon.com and Barnes & Noble)

Meteorology: www.homesciencetools.com/earth-science/weather-climate; Mary Kay Carson, *Weather Projects for Young Scientists* (2007); Janice VanCleave, *Janice VanCleave's Weather* (1995); Brian Cosgrove, *DK Eyewitness Weather* (2007); Joanna Cole, *The Magic School Bus Inside a Hurricane* (1996); Storm Dunlop, *Guide to Weather Forecasting* (2008)

Nuclear engineering: Hazel Richardson, *How to Split the Atom* (2001); Ira Freeman, *All About the Atom* (1955); plasma globe (Spencer's in many malls—avoid all the kinky aisles and head straight for the science nerd aisle; turn on the globe and bring a fluorescent light bulb near it); www.symmetrymagazine.org/article/january-2015/how-to-build-your-own-particle-detector; spinthariscope (www.unitednuclear.com/index.php?main_page=index&cPath=2_12)

Optics: Thames & Kosmos Scope Constructor; www.homesciencetools.com/physics-engineering/light-optics; www.sciplus.com/s/c_17; www.scientificsonline.com/shop/optics; Levine & Johnstone, *The Optics Book* (1999); Cobb, *Light Action!* (2005)

Paleontology: 50 fossils for \$67: www.twoguysfossils2.com/product/fossil-set-67/; www.rocksandminerals.com; Nash dinosaur tracks (www.nashdinosaurtracks.com); Cyril Walker & David Ward, *Fossils* (DK, 2002); Rhodes, Zim, & Shaffer, *Fossils* (St. Martin's Press Golden Guide, 2001); Chris McGowan, *Make Your Own Dinosaur Out of Chicken Bones* (1997) and *T-Rex to Go* (1999); *Walking with Dinosaurs*, *Chased by Dinosaurs*, and other DVDs in those series

Physics: www.homesciencetools.com/physics-engineering; drinking bird (www.scientificsonline.com and www.sciplus.com; put a cup of cold water at the head AND a cup of hot water under the tail); gyroscope and radiometer (www.homesciencetools.com, www.scientificsonline.com, and www.sciplus.com); Janice VanCleave, *Physics for Every Kid, Energy for Every Kid, A+ Projects in Physics*, and *Magnets*; Prutchi, *Exploring Quantum Physics through Hands-on Projects; ...for the Evil Genius* book series

Waves and acoustics: www.homesciencetools.com/physics-engineering/sound-wave-motion; Melissa and Doug Deluxe Band Set and Band in a Box (amazon.com and toy stores); Levine & Johnstone, *Science Experiments with Sound & Music* (2002)