



## The Joy of Toys: Book Resources for K-12

National Chemistry Week 2005 - October 16-22, 2005

Some of the titles below are books recommended by the National Science Teachers Association (<http://www.nsta.org>). Descriptions for NSTA recommended titles are based on NSTA reviews.

Levels: *(E) Elementary (K-4), (I) Intermediate (6-8), HS High School (9-12), (C) College, and (G) General Public*

**CHEMISTRY JEOPARDY.** Brian Pressley. Portland, ME: Walch Publishing, 2004. 105 pp. ISBN 08254342X. *(HS)* Thirty-two game boards each include 30 answers, for which students are challenged to provide questions about such topics as atoms, ions, compounds, reactions, gas laws, periodic nature of chemistry, solutions, kinetics, acids, bases, electrochemistry, organic chemistry, biochemistry, and nuclear chemistry. Students will enjoy this variation on traditional review, and teachers will find that topics within the sections can be mixed and matched to address their needs. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=15268>

**CHEMISTRY PUZZLES AND GAMES.** Susan M. Adams. Games for Science Education, 2002. 84 pp. ISBN 0972056009. *(HS, C)* This book contains 25 puzzles and games that review the major concepts covered in an introductory chemistry course. It is suitable for use by high school and college chemistry students and teachers. The book includes complete solutions to all puzzles, introductory notes for students and for teachers, and a glossary.

**EINSTEIN'S SCIENCE PARTIES: EASY PARTIES FOR CURIOUS KIDS.** Shar Levine, Allison Grafton. Wiley, 1994. 112 pp. ISBN 0471596469. *(I)* "Why hire a clown? Throw a science party instead!" This book shows you how to easily put together a clever and inexpensive science theme party. You'll need just a few hours of preparation and regular household items to create unforgettable parties like, "Fossils and Dinos," "I Spy," "Color Your World," and "Slime Time." All activities are child-tested and include clear-cut instructions, and easy-to-follow scripts. The book also includes fun illustrated invitations that can be photocopied and personalized.

**EXPLORING MATTER WITH TOYS: USING AND UNDERSTANDING THE SENSES.** Mickey Sarquis. NY: McGraw-Hill, 1997. 206 pp. ISBN 0070647240. *(E)* This book makes the study of matter fun, exciting, and meaningful. The more students explore with their senses, the more they become in touch with the world around them and how their senses enable them to interpret it. Nineteen activities are presented in a convenient and informative format. A must for any teacher's resource library, this book provides all of the ingredients needed for designing and delivering successful learning experiences for young learners. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=11885>

**FLASH! BANG! POP! FIZZ!:** EXCITING SCIENCE FOR CURIOUS MINDS. Janet Parks Chahrouh, Ann Humphrey Williams (Illustrator). Barron's Educational Series, 1<sup>st</sup> Edition, May 2000. 166 pp. ISBN 0764111426. *(I, HS)* This book overflows with ideas and instructions for science activities children can perform at school or at home, as they make things go flash! bang! pop! and fizz! The book contains 25 fun activities and experiments, all of which can be performed within 30-60 minutes. Clear diagrams illustrate each step. Recommended for students in grades 5 through 9, with adult supervision.

**THE INCREDIBLE SECRET FORMULA BOOK: MAKE YOUR OWN ROCK CANDY, JELLY SNAKES, FACE PAINT, SLIMY PUTTY, AND 55 MORE AWESOME THINGS.** Shar Levine, Leslie Johnston, John Manders. Troll communications, 1999. 65 pp. ISBN 0816770115. *(E)* This book contains things to make with common, easy-to-find ingredients. Categories include: Dough & Chalk; Mache; Paints; Invisible & Disappearing Inks; Paper Making; Printing; Slimes; Color Changes; Crystals; Yolks On You; It'll Grow On You; Weird Stuff; and Gross Out. All recipes include step-by-step instructions, and the activities are coded to indicate "Adult Help," "Long Time," and "Don't Eat."

**INVESTIGATING SOLIDS, LIQUIDS, AND GASES WITH TOYS: STATES OF MATTER AND CHANGES OF STATE.** Jerry Sarquis, Lynn Hogue, Mickey Sarquis, Linda Woodward. NY: McGraw-Hill, 1997. 283 pp. ISBN 0070482357. *(I)* This book provides 24 activities that enable teachers to use simple objects to convey complex ideas. For example, in "Crystals from Solutions" students make colorful crystal 'trees' by making water solutions and allowing water to evaporate. Each activity in the book clearly outlines the time required, key science topics, materials needed, and how to set up, introduce, and proceed with the activity. Variations, extensions, assessment ideas, cross-curricular connections, and handout masters make this book a complete teacher resource. The activities provide students in the middle grades with the great motivation to learn and provide teachers with the lessons and activities to help them do so. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=11886>

For more resources, see <http://library.stanford.edu/depts/swain/hosted/hcw/2005/index.html>



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**IT'S NOT MAGIC, IT'S SCIENCE! : 50 SCIENCE TRICKS THAT MYSTIFY, DAZZLE & ASTOUND.** Hope Buttita. Lark, 2005. 80 pp. ISBN 1579906222. **(I)** Every child who performs these 50 fabulous feats will feel like a magician—but the magic here is really science at play. Every trick in the book has a sound, easy-to-understand scientific explanation that will stimulate understanding of basic concepts.

**SCIENCE IN SECONDS WITH TOYS: OVER 100 EXPERIMENTS YOU CAN DO IN TEN MINUTES OR LESS.** Jean Potter. Wiley, 1998. 128 pp. ISBN 0471179000. **(I)** Make glow-in-the-dark stars! Learn how an Etch-A-Sketch erases pictures! Experience the science of toys and games with these quick, easy experiments and activities. Clear step-by-step instructions and illustrations help you get it right every time. Most materials required for projects are already on hand. The 101 activities in this book cover every aspect of the science of toys and the games you play—all with the help of a leading educator

**SHAPE IT! MAGNIFICENT PROJECTS FOR MOLDING MATERIALS.** Keith Good. Minneapolis, MN: Lerner Publications, 2000. 32 pp. ISBN 0822535688. **(I)** Moldable materials such as toys, computer keyboards, and cookies, are a common part of the students' environment. Using inexpensive materials, this activity book encourages students to design and make their own projects using "moldable" materials. It includes "recipes" and directions. Different ways of molding and projects with step-by-step directions for each are explained. Although no sharp tools are needed for any of the projects, there is a section on safety. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=11736>

**SPY SCIENCE: 40 SECRET-SLEUTHING, CODE-CRACKING, SPY-CATCHING ACTIVITIES FOR KIDS.** Jim Wiese, Ed Shems. Wiley, 1996. ISBN 047114620X. 128 pp. **(I)** Sh-h-h-h-h-h!! Top Secret... Crack the code of superspy science fun! Write messages with invisible ink. Discover how spies use science to keep—or uncover—top secrets. These and dozens of other fun-filled activities give you an inside look at the science behind spy gadgets and tricks of the trade. All the activities are safe and can be done with everyday stuff from around the house.

**TEACHING CHEMISTRY WITH TOYS.** Jerry L. Sarquis, Mickey Sarquis, John P. Williams. NY: Learning Triangle Press, 1995. 296 pp. ISBN 0070647224. **(E, I, HS)** Students will be excited to use toy cars to investigate the effect of temperature and color change, or discover why the Drinking Bird toy bobs its head as if it is going for a drink. This book is part of a five-book series of instructor's manuals with reproducible pages. Activities include 14 different projects divided by grade level: K-3, 4-6, and 7-9. The directions for the teacher are excellent, providing the kind of tips that actually make the experiments work. Timetables of setup, student performance, and cleanup are clearly outlined. The clear discussion of concepts makes this book ideal for teachers with a limited science background. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=11888>

**TOY LAB.** Michael Elsohn Ross. Minneapolis, MN: Lerner Publications, 2002. 48 pp. ISBN 0876144563 **(E, I)** Part of the series *You are the Scientist*, this book explains how to do experiments related to scientific principles using toys. Children will also learn how to make various toys such as gloop, parachutes, squirters, racing car ramps, and tops. Six major concepts are addressed in this book: matter, flight, pressure, waves, gravity, and objects in motion. The book also provides an excellent history of familiar toys like Silly Putty, Frisbee, Slinky, building toys, and the yo-yo. Many of these toys actually started out as other inventions that didn't work, so the inventors turned them into great toys. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=13393>

**TOYS!: AMAZING STORIES BEHIND SOME GREAT INVENTIONS.** Don Wulffson, Laurie Keller. Henry Holt, 2000. 144 pp. ISBN 0805061967. **(I)** Have you ever wondered who invented Lego or Mr. Potato Head? Here are the fascinating stories behind these toy inventions and many others. From dolls and checkers to pinball and the modern video game, there's a wide selection here for boys and girls alike. With humor and wit, this intriguing book serves up slices of cultural history that will inspire young readers to start thinking up their own toy inventions.

**WATER SCIENCE FAIR PROJECTS USING ICE CUBES, SUPER SOAKERS, AND OTHER WET STUFF.** Madeline Goodstein. Berkeley Heights, NJ: Enslow Publishers, 2004. 128 pp. ISBN 0766021246. **(I)** Water, one of the wonders of the chemical world, has a number of unique properties—structure, polarity, and the ability to adhere, stick, and dissolve—that make investigating it interesting. This book allows students to examine these properties with well-organized activities and ideas for independent investigation. Source: *NSTA Recommends* <http://www2.nsta.org/recommends/product.asp?id=14946>