

principles, and lively commentaries emphasize the fun and fascination of learning about chemistry. This delightful and richly informative book amply proves that chemistry can appeal to our intuition, logic, and if we're willing to get down and dirty-our sense of enjoyment too. Cathy Cobb is the highly acclaimed author of *Magick, Mayhem, and Mavericks: The Spirited History of Physical Chemistry* and, with H. Goldwhite, *Creations of Fire: Chemistry's Lively History from Alchemy to the Atomic Age*. She is currently an instructor of calculus and physics at Aiken Preparatory School and an adjunct professor of chemistry at the University of South Carolina at Aiken. Monty L. Fetterolf is professor of chemistry at the University of South Carolina at Aiken.

BANNED: The Golden Book of Chemistry Experiments was a children's chemistry book written in the 1960s by Robert Brent and illustrated by Harry Lazarus, showing how to set up your own home laboratory and conduct over 200 experiments. The book is controversial, as many of the experiments contained in the book are now considered too dangerous for the general public. There are apparently only 126 copies of this book in libraries worldwide. Despite this, it's known as one of the best DIY chemistry books ever published. The book was a source of inspiration to David Hahn, nicknamed "the Radioactive Boy Scout" by the media, who tried to collect a sample of every chemical element and also built a model nuclear reactor (nuclear reactions however are not covered in this book), which led to the involvement of the authorities. On the other hand, it has also been the inspiration for many children who went on to get advanced degrees and productive chemical careers in industry or academia.

Learn about the history of Earth's elements.

A fascinating historical account of the emergence and development of the new interdisciplinary field of deep carbon science.

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From New York Times bestselling author Sam Kean comes incredible stories of science, history, finance, mythology, the arts, medicine, and more, as told by the Periodic Table. Why did Gandhi hate iodine (I, 53)? How did radium (Ra, 88) nearly ruin Marie Curie's reputation? And why is gallium (Ga, 31) the go-to element for laboratory pranksters? The Periodic Table is a crowning scientific achievement, but it's also a treasure trove of adventure, betrayal, and obsession. These fascinating tales follow every element on the table as they play out their parts in human history, and in the lives of the (frequently) mad scientists who discovered them. **THE DISAPPEARING SPOON** masterfully fuses science with the classic lore of invention, investigation, and discovery--from the Big Bang through the end of time. *Though solid at room temperature, gallium is a moldable metal that melts at 84 degrees Fahrenheit. A classic science prank is to mold gallium spoons, serve them with tea, and watch guests recoil as their utensils disappear.

Leads the reader on a delightful and absorbing journey through the ages, on the trail of the elements of the Periodic Table as we know them today. He introduces the young reader to people like Von Helmholtz, Boyle, Stahl, Priestly, Cavendish, Lavoisier, and many others, all incredibly diverse in personality and approach, who have laid the groundwork for a search that is still unfolding to this day. The first part of Wiker's witty and solidly instructive presentation is most suitable to middle school age, while the later chapters are designed for ages 12-13 and up, with a final chapter somewhat more advanced. Illustrated by Jeanne Bendick and Ted Schluenderfritz.

VERBAI ReAcTiONS are a new form of word scrambles with a chemical flavor. You don't need to know any science to be able to solve VErBAI ReAcTiONS puzzles, but the puzzles bear a resemblance to chemical reactions. EXAMPLE: Here is a sample: Es + 2 S + P + Si + 2 O + N --> _ _ _ _ _ . This VErBAI ReAcTiON is a word scramble consisting of one Es, two S's, one P, one Si, two O's, and one N. That is, the word scramble contains the elements Es, S, S, P, Si, O, O, and N. Unscramble these elements to form an 8-symbol word (that's why there are 8 blanks in the puzzle). ANSWER: For this puzzle, the answer is P O S S Es Si O N (possession). These VErBAI ReAcTiONS resemble chemical reactions in two ways. First, the scrambled elements appear added together on the left of the reaction with coefficients (like the number 2 in the puzzle above) telling you how many of each element the solution contains, and you fill in the result of the VErBAI ReAcTiON by rearranging the elements and writing them on the blanks on the right side of the reaction. Secondly, all of the solutions are chemical words. A chemical word is a word that can be made using symbols from the periodic table. For example, the chemical word POSSEsSiON is made using the symbols for phosphorus (P), oxygen (O), sulfur (S), Einsteinium (Es), silicon (Si), and nitrogen (N). You don't need to be familiar with the periodic table to solve these problems; nor do you need to know any chemistry. You just need to be able to count and unscramble elements to make words. This 'Easy' volume consists of words with 4 to 5 symbols, which involves familiarity with common 4 to 10 letter words. Other 'Medium' and 'Hard' volumes consist of longer words. A unique feature of this book is that there is a Hints section at the back separate from the Answers section, for puzzlers who may be stuck and want to check just the first letter of the solution. MORE EXAMPLES: (1) S + Ni + Ge + U --> _ _ _ _ . (2) 2 C + N + 2 I + P --> _ _ _ _ _ . (3) Ti + C + Cr + P + Y --> _ _ _ _ _ . (4) 2 C + U + 2 S + Es --> _ _ _ _ _ . You can find the answers below. Note that this easy volume consists of chemical words with 4 to 5 symbols. We recommend starting with our easy puzzles before tackling the medium or hard puzzles (available in separate volumes). ANSWERS: (1) GeNiUS (2) PICNIC (3) CrYPTiC (4) SUCCEsS.

What do you associate with chemistry? Explosions, innovative materials, plastics, pollution? The public's confused and contradictory conception of chemistry as basic science, industrial producer and polluter contributes to what we present in this book as chemistry's image as an impure science. Historically, chemistry has always been viewed as impure both in terms of its academic status and its role in transforming modern society. While exploring the history of this science we argue for a characteristic philosophical approach that distinguishes chemistry from physics. This reflection leads us to a philosophical stance that we characterize as operational realism. In this new expanded edition we delve deeper into the questions of properties and potentials that are so important for this philosophy that is based on the manipulation of matter rather than the construction of theories./a

Publisher description

Cultivate a love for science by providing standards-based practice that captures children's attention. Spectrum Science for grade 8 provides interesting informational text and fascinating facts about the nature of light, the detection of distant planets, and internal combustion engines. --When children develop a solid understanding of science, they're preparing for success. Spectrum Science for grades 3-8 improves scientific literacy and inquiry skills through an exciting exploration of natural, earth, life, and applied sciences. With the help of this best-selling series, your young scientist can discover and appreciate the extraordinary world that surrounds them!

This monograph deals with the interrelationship between chemistry and physics, and especially the role played by quantum chemistry as a theory in between these two disciplines. The author uses structuralist approach to explore the overlap between the two sciences, looking at their theoretical and ontological borrowings as well as their continuity. The starting point of this book is that there is at least a form of unity between chemistry and physics, where the reduction relation is conceived as a special case of this unity. However, matters are never concluded so simply within philosophy of chemistry, as significant problems exist around a number of core chemical ideas. Specifically, one cannot take the obvious success of quantum theories as outright support for a reductive relationship. Instead, in the context of a suitably adapted Nagelian framework for reduction, modern chemistry's relationship to physics is constitutive. The results provided by quantum chemistry, in particular, have significant consequences for chemical ontology. This book is ideal for students, scholars and academics from the field of Philosophy of Science, and particularly for those with an interest in Philosophy of Chemistry and Physics.

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An extensive collection of crossword puzzles useful for students taking general chemistry. Topics include life and matter, elements and symbols, measurements, atoms, periodic table, electrons, ions, molecules, chemical equations, energy and reaction rates, equilibrium, gases/liquids/solids, solutions, acids and bases, cations and anions, and nuclear chemistry. Each crossword puzzle includes an empty numbered grid, clues, word bank and grid with answers.

Chemical word jumbles are an exciting new form of word puzzles. You don't need to know any chemistry! These chemical word jumbles will appeal to all word puzzle lovers, whether or not they also enjoy science. Each word is composed of symbols from the periodic table, instead of letters; but you don't need to be familiar with the periodic table to solve the word jumbles. Here is an example: The words BRaIn PoWEr are composed of the following symbols for chemical elements: B for boron, Ra for radium, In for indium, Po for polonium, W for tungsten, and Er for erbium. In chemical word jumbles, the words have been scrambled by rearranging the symbols - not the letters. Symbols that have two letters - like He for helium and Nd for neodymium - can't be split or have their letters reordered. This creates a significant distinction between ordinary word jumbles and chemical word jumbles. For example, the symbols Er, V, S, and Es may be combined to form the word SErVEs, but not the word SEVErs because symbols would have to be split to form SEVErs. One neat difference between ordinary word jumbles and chemical word jumbles is that chemical word jumbles allow us to make use of a vocabulary of longer words without effectively increasing the difficulty of the puzzle. For example, the word VErBAI is a 6-letter word, but only a 4-symbol word. When trying to rearrange the symbols Al, Er, B, and V to form the word VErBAI, there are fewer permutations to consider compared to rearranging the 6 letters A, l, e, r, b, and v to form the word verbal. We saw this as an excellent opportunity to make word jumble puzzles that involve a vocabulary of longer words. The level of difficulty of this Chemical Word Jumbles puzzle book is MEDIUM. This book involves words that mostly have 5 to 6 symbols, and therefore 5 to 12 letters; all of the challenge words of this MEDIUM book have 6 symbols. (There is also an EASY book with 4 to 5 symbol words, and a HARD book with 7 to 9 symbols. Puzzlers who can solve harder word jumbles may want to begin with the EASY volume to get the hang of unscrambling words in terms of chemical symbols before moving onto MEDIUM or HARD.) Each puzzle features a challenge word made by rearranging the first symbol of each word. A unique feature of this book is that there is a Hints section at the back separate from the Answers section, for puzzlers who may be stuck and want to check just the first letter of the solution.

Next Generation Science Standards identifies the science all K-12 students should know. These new standards are based on the National Research Council's A Framework for K-12 Science Education. The National Research Council, the National Science Teachers Association, the American Association for the Advancement of Science, and Achieve have partnered to create standards through a collaborative state-led process. The standards are rich in content and practice and arranged in a coherent manner across disciplines and grades to provide all students an internationally benchmarked science education. The print version of Next Generation Science Standards complements the nextgenscience.org website and: Provides an authoritative offline reference to the standards when creating lesson plans Arranged

by grade level and by core discipline, making information quick and easy to find Printed in full color with a lay-flat spiral binding Allows for bookmarking, highlighting, and annotating

An extensive collection of crossword puzzles useful for students taking general chemistry. Topics include life and matter, elements and symbols, measurements, atoms, periodic table, electrons, ions, molecules, chemical equations, energy and reaction rates, equilibrium, gases/liquids/solids, solutions, acids and bases, cations and anions, nuclear chemistry, proteins, amino acids, protein structure levels, enzymes, enzyme function, enzyme regulation, carbohydrates, monosaccharides, disaccharides, polysaccharides, fatty acids, esters, phospholipids, cell membranes, eicosanoids, nucleic acids, DNA replication, RNA, protein synthesis, and chromosomes. Each crossword puzzle includes an empty numbered grid, clues, word bank and grid with answers.

EmSAT Chemistry Achieve is designed to support students preparing to take the EmSAT Chemistry Achieve examination, who require high quality, reliable and authentic mock exam questions. - The text contains six sets of complete mock examination papers. - The questions are written to the style and standard of the actual EmSAT exam. - The questions are accompanied by answers and explanations designed to facilitate learning of the core chemical facts and principles. - The questions cover the entire chemistry syllabus by focusing on matter and energy. Accordingly, physical chemistry, inorganic chemistry and organic chemistry questions are included. - This book represents the most comprehensive and authoritative EmSAT Chemistry Achieve guide currently available. - This book is a companion text to our EmSAT English Achieve book and is the second book in our EmSAT preparation series. These books promote our goal to facilitate the successful entry of students into UAE universities and colleges.

Physical Science for grades 5 to 12 is designed to aid in the review and practice of physical science topics. Physical Science covers topics such as scientific measurement, force and energy, matter, atoms and elements, magnetism, and electricity. The book includes realistic diagrams and engaging activities to support practice in all areas of physical science. --The 100+ Series science books span grades 5 to 12. The activities in each book reinforce essential science skill practice in the areas of life science, physical science, and earth science. The books include engaging, grade-appropriate activities and clear thumbnail answer keys. Each book has 128 pages and 100 pages (or more) of reproducible content to help students review and reinforce essential skills in individual science topics. The series is aligned to current science standards.

Chemistry for grades 9 to 12 is designed to aid in the review and practice of chemistry topics. Chemistry covers topics such as metrics and measurements, matter, atomic structure, bonds, compounds, chemical equations, molarity, and acids and bases. The book includes realistic diagrams and engaging activities to support practice in all areas of chemistry. The 100+ Series science books span grades 5 to 12. The activities in each book reinforce essential science skill practice in the areas of life science, physical science, and earth science. The books include engaging, grade-appropriate activities and clear thumbnail answer keys. Each book has 128 pages and 100 pages (or more) of reproducible content to help students review and reinforce essential skills in individual science topics. The series will be aligned to current science standards.

Explains the characteristics of alkaline earth metals, where they are found, how they are used by humans, and their relationship to other elements found in the periodic table.

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Images and text capture the astonishing beauty of the chemical processes that create snowflakes, bubbles, flames, and other wonders of nature. Chemistry is not just about microscopic atoms doing inscrutable things; it is the process that makes flowers and galaxies. We rely on it for bread-baking, vegetable-growing, and producing the materials of daily life. In stunning images and illuminating text, this book captures chemistry as it unfolds. Using such techniques as microphotography, time-lapse photography, and infrared thermal imaging, The Beauty of Chemistry shows us how chemistry underpins the formation of snowflakes, the science of champagne, the colors of flowers, and other wonders of nature and technology. We see the marvelous configurations of chemical gardens; the amazing transformations of evaporation, distillation, and precipitation; heat made visible; and more.

Discusses the scientific principles behind the laws of conservation of matter, the combination of elements, the periodic table, and the first and second law of thermodynamics, and describes the work of the scientists who discovered them.

Bring your science lessons to life with Scientifica. Providing just the right proportion of 'reading' versus 'doing', these engaging resources are differentiated to support and challenge pupils of varying abilities. Digital Storytelling shows you how to create immersive, interactive narratives across a multitude of platforms, devices, and media. From age-old storytelling techniques to cutting-edge development processes, this book covers creating stories for all forms of New Media, including transmedia storytelling, video games, mobile apps, and second screen experiences. The way a story is told, a message is delivered, or a narrative is navigated has changed dramatically over the last few years. Stories are told through video games, interactive books, and social media. Stories are told on all sorts of different platforms and through all sorts of different devices. They're immersive, letting the user interact with the story and letting the user enter the story and shape it themselves. This book features case studies that cover a great spectrum of platforms and different story genres. It also shows you how to plan processes for developing interactive narratives for all forms of entertainment and non-fiction purposes: education, training, information and promotion. Digital Storytelling features interviews with some of the industry's biggest names, showing you how they build and tell their stories.

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