

Book List for AP Chem

This is not required reading. You will all work hard enough next year. For those of you who would like to start the year with a small extra credit boost, read one (or more) of these and write a one page summary of the book. (I'll probably ask you questions about it so don't try to cheat by pretending to have read the book.)

These are meant to be entertaining, fun and yet informative.

This one is the one I recommend if you really don't want to do this assignment. This book is really short, really easy to read and really quite an interesting twist to the Periodic Table.

P. W. Atkins

The Periodic Kingdom: A Journey into the Land of the Chemical Elements (Basic Books, ISBN 046507266)

This book is a classic in the field. Atkins uses the metaphor of the periodic table as an unexplored physical territory to relate chemistry concepts to the reader. This book is the closest to a regular chemistry textbook than any on this list, and I have heard of it being used as a text for some introductory courses. Naming, periodicity, bonding, and electron configurations are some of the terrain, regions, laws, and administration of Atkins's kingdom.

Anything by Joe Schwarcz is a blast to read. They are the kind of book you can open to any page any time, start reading and be thoroughly intrigued. Are you familiar with the "Bathroom Reader" series...

Joe Schwarcz

Dr. Joe Schwarcz is the director of the Office for Chemistry and Society at McGill University in Montreal, Quebec, Canada. He is a master at explaining science to the public, and all three of these books show that. Schwarcz does a wonderful job of explaining the "fascinating chemistry of everyday life," as the three books note. I use these books regularly. Informative, fun, funny, interesting, and surprising, Schwarcz makes some of the most amazing connections between the science and things in the real world. For example, the title of the first book refers to polyethylene.

Radar, Hula Hoops, and Playful Pigs: 62 Digestible Commentaries on the Fascinating Chemistry of Everyday Life (Henry Holt and Co., ISBN 0805074074)

The Genie in the Bottle: 67 All-New Commentaries on the Fascinating Chemistry of Everyday Life (Owl Books, 0805071385)

That's the Way the Cookie Crumbles: 62 All-New Commentaries on the Fascinating Chemistry of Everyday Life (ECW Press, ISBN 1550225200)

Oliver Sacks

Uncle Tungsten; Memories of a Chemical Boyhood (ISBN 0-375-70404-3), Oliver Sacks is a practicing neurologist that grew up in a scientific family. His memoirs are a wonderful journey. An all around great and inspirational read.

Royston Roberts

Serendipity: Accidental Discoveries in Science (John Wiley and Sons, ISBN 0471602035)

I use this book as a supplemental text in my chemistry course for nonmajors. The central premise of this book is that often discoveries have some element of accident or serendipity to them. Ranging from Archimedes to Nobel to synthetic sweeteners, this book looks at the science and the sometimes unusual circumstances that surround the discovery. Very well written.

Ivan Amato

Stuff: The Materials the World Is Made Of (William Morrow, ISBN 0380731533)

Stuff is a great book that connects chemistry to the field of material science. The introduction and first chapter are especially good at connecting the chemistry we study to the stuff we use everyday.

Philip Ball

Philip Ball is an exceptional writer with a special gift for being able to explain complex concepts in clean, clear, understandable English. A former editor for *Nature*, Ball writes on many scientific topics and has a particular gift for drawing connections from the science to the everyday.

Stories of the Invisible: A Guided Tour of Molecules (Oxford University Press, ISBN 0192803174)

This book explores the connections between chemistry and living systems, especially the human body. Biochemistry, molecular biology, and even some mention of nanotechnology are included in this. This is one of Ball's more densely written works, and it assumes more science orientation than his others.

The Ingredients: A Guided Tour of the Elements (Oxford University Press, ISBN 0192841009)

This is Ball's introduction to the elements and the periodic table. One of his shortest books, *Ingredients* tells a fair amount of the earliest history of what we now know as atoms and molecules. This book connects the cultural context and the chemical information. A long chapter on gold is especially good.

Bright Earth (University of Chicago Press, ISBN 0226036286)

This book sits at the interface of chemistry and art. A special favorite of mine, *Bright Earth* tells about the discovery and creation of pigments and dyes and the influence that chemistry has on artistic endeavors.

Life's Matrix: A Biography of Water (University of California Press, ISBN 0520230086)

The subtitle here says it all. Ball takes the single, ubiquitous molecule of H₂O and looks at it from the viewpoints of chemistry, biology, physics, geology, history, and even politics.

John Emsley

Molecules at an Exhibition: Portraits of Intriguing Materials in Everyday Life (Oxford University Press, ISBN 0192862065)

Emsley has compiled a book of short vignettes connecting various chemical species and topics to everyday life. Very clearly written, each brief (two to five pages) section focuses on a single element or molecule. Some of the topics included range from chemicals in food, polymers, fuels, medicines, and drugs to metals and poisons.

Nature's Building Blocks: An A-Z Guide to the Elements (Oxford University Press, ISBN 0198503415)

This book is an encyclopedia of information about each of the chemical elements. While there are many such books out there, this one is my favorite in that it includes information about the discovery of the element, where it is found in nature (if it is), biological and environmental connections, industrial uses, historical background, and interesting anecdotes. More like a biography of each element instead of a list of data.

The 13th Element: The Sordid Tale of Murder, Fire, and Phosphorus (John Wiley and Sons, ISBN 047144149X)

No, there is not a typographical error in the title. While phosphorus is indeed the fifteenth element on the periodic table, it was the thirteenth element discovered. While it is hard to imagine over 300 pages dedicated to a single chemical element, this book is fascinating in the tales that it tells. Chemistry, history, industry, and war are only some of the elements (pun intended) in this pretty fascinating book.

Penny Le Couteur and Jay Burreson

Napoleon's Buttons: How 17 Molecules Changed History (Tarcher/Putnam, ISBN 1585422207)

Described by the authors as not so much "the history of chemistry" as "the chemistry in history," this book details how 17 molecules or classes of molecules had pretty profound influences on the history of humanity. From the connection of the spice trade to territorial exploration all the way to silk and the development of synthetic polymers, this book mixes a good dose of scientific information with historical and cultural context. In my opinion, this book is worth buying for the extensive bibliography alone.

Ken Silverstein

The Radioactive Boy Scout

Cathy Cobb, Monty L. Fetterolf

The Joy of Chemistry: The Amazing Science of Familiar Things