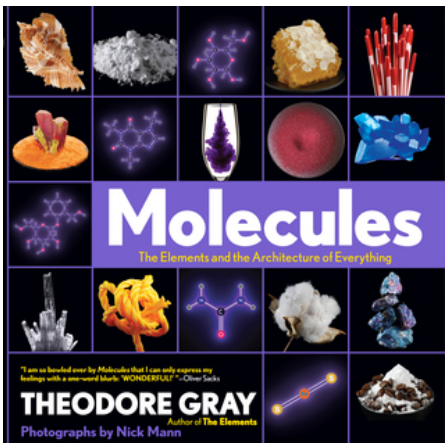

Molecules: The Elements and the Architecture of Everything

Theodore Gray , Nick Mann (Photographer)

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Molecules: The Elements and the Architecture of Everything Theodore Gray , Nick Mann (Photographer)
In his highly anticipated sequel to *The Elements*, Theodore Gray demonstrates how the elements of the periodic table combine to form the molecules that make up our world.

Everything physical is made up of the elements and the infinite variety of molecules they form when they combine with each other. In *Molecules*, Theodore Gray takes the next step in the grand story that began with the periodic table in his best-selling book, *The Elements: A Visual Exploration of Every Known Atom in the Universe*. Here, he explores through fascinating stories and trademark stunning photography the most interesting, essential, useful, and beautiful of the millions of chemical structures that make up every material in the world.

Gray begins with an explanation of how atoms bond to form molecules and compounds, as well as the difference between organic and inorganic chemistry. He then goes on to explore the vast array of materials molecules can create, including: soaps and solvents; goops and oils; rocks and ores; ropes and fibers; painkillers and dangerous drugs; sweeteners; perfumes and stink bombs; colors and pigments; and controversial compounds including asbestos, CFCs, and thimerosal.

Big, gorgeous photographs, as well as diagrams of the compounds and their chemical bonds, rendered with never before seen beauty, fill the pages and capture molecules in their various states.

As he did in *The Elements*, Gray shows us molecules as we've never seen them before. It's the perfect book for his loyal fans who've been eager for more and for anyone fascinated with the mysteries of the material world.

Molecules: The Elements and the Architecture of Everything Details

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ISBN	:	9781579129712
Author	:	Theodore Gray , Nick Mann (Photographer)
Format	:	Hardcover 240 pages
Genre	:	Science, Chemistry, Nonfiction, Reference

Theodore Gray , Nick Mann (Photographer)

From Reader Review Molecules: The Elements and the Architecture of Everything for online ebook

Heather says

This book is like being guided on a personal tour of a science museum by its owner. The photographs are engaging, and the commentary is concise and witty. The author must have had a blast collecting everything used in this book; I got a kick out of his animal urine collection.

Michelle says

Very, very, very fun. This plus Gray's Elements should be mandatory go-alongs for homeschool chemistry classes!

D. Ryan says

Just awesome. Great teaching on atoms and molecules, and great exploration.

Harald Groven says

The p-book is truly beautiful, but the iPad version of the book is remarkable!
You can play around with the jiggling molecules in 3D, while the app is presenting all the text from the book illustrated by interactive animations. One of the rare examples of a book vastly improved, not degraded by "appification".

Jimmy says

Science fanatics, rejoice!

The second of Theodore Gray's awesome books about science, Molecules: The Elements and the Architecture of Everything delivers. After reading the previous book, The Elements: A Visual Exploration of Every Known Atom in the Universe, I knew that I wouldn't be disappointed when I picked this one up.

The Elements had an order, from the first up until the most recently discovered according to the Periodic Table. It's limited. But not so with Molecules. They are boundless, limitless, and would be a very heavy tome of chemistry and wordiness that very few would want to pick up. Instead, Gray presents the book with a main focus on organic chemistry, as that's where most of the cool stuff we use everyday comes in. He splits the book up into chapters, from an introduction of why certain atoms bond together, to the world of oils and water and waxes, to the long chains of fiber, and even the building blocks of DNA. Of course, what makes this book so awesome are the beautifully photographed pictures of all of these concepts that he discusses. The book would be replete without them.

If you're into chemistry even just a little bit, check out this wonderful work of art. You'll be glad you did.

Awesome144 says

This is a great book. A good and thorough description would take hours.
Theodore gray brings ordinary stuff to life with his wit and humor (all while explaining thoroughly about the molecule.)
This is not a standard book about the stuff that makes up our world.
IN SHORT:
This is one of the best book about it's topic out there and I strongly suggest you read it
I give it five stars or?????(five stars)

Brendon Schrodinger says

Moving on from his wonderful books on DIY chemistry experiments (Theo Gray's Mad Science: Experiments You Can Do At Home - But Probably Shouldn't) and his glossy, beautiful and somewhat erotic (well us chemists get our kicks where we can) The Elements: A Visual Exploration of Every Known Atom in the Universe, Theo takes us a step up in complexity and deals with the realm of molecules in his latest glossy coffee table book to end all coffee table books.

Sure there is less structural narrative here than in 'The Elements' because we lack the periodic table, but the themes selected by Theo are great and do tie together somewhat. What you find are sections on soaps, sweeteners, dyes, aromatic compounds and a variety of others. Each section is contains the beautiful photography of Nick Mann as well as lots of structures and weird facts.

Another aspect that I love about Theo's books are that I am not bored reading them and despite my wide reading and years of education and educating in chemistry there are still a variety of weird facts that I come across in his books. Admittedly I was a little bored in the first couple of chapters of 'Molecules' because it did lay down the foundations of what molecules are and how the atoms bond. But it is always great to read how another greatly intelligent person explains these basics to a non-educated audience. It is part of my job to do this for fresh faced university undergraduates.

Yes I am possibly a bit biased being both a chemist and a big fan of Theodore's previous books but 'Molecules' kept me fascinated for hours and it is a book that I will revisit quite often. It may not be quite as catchy and as structured as 'The Elements', but close to perfection is still a commendable achievement.

You can read more of my gibberish at The Periodic Tabe of Elephants.

Geoff says

Molecules, the 'sequel' to Elements: A Visual Exploration of Every Known Atom in the Universe, isn't quite as good as the original but still a fascinating book. The main draw for the book are the outstanding photos on every single page. For instance, the chapter on colours is page after page of eye-popping photos of dyes, fruit, minerals and other assorted colourful objects. Its not all pretty pictures though, you can learn quite a bit. I didn't expect to see orbital cloud diagrams, but there they were.

It probably says a lot about me that the prospect of the next book being called 'Reactions' excites me quite a bit.

BryanS says

This book was okay. It was very informative on the structure of molecules to organic compounds to even water, oil, and soap. It was a little too informative, however. It got boring at some parts when all it talked about was very long compound names. Sine the author talked directly to the audience, it kept me from closing the book. Also, I liked this book because I've always wanted to be a chemist. I recommend this book only to people who like science or who are curios about what the world is made of.

Grace says

I picked up *Molecules* from the library's "just in" shelves to see if this would be a good book for teaching people about chemistry. As I flipped open the first few pages, I was intrigued by the fact that all the pages were black and had full, glossy coloured images on them. It really made the chemistry stand out in a way I've never seen it before.

The layout is amazing, easy to read, easy to follow, and more importantly, makes sense. While I was explaining polymers to students, major polymer examples were right there so I could easily flip to them and show the students the importance these have on their lives. And ore processing? The entire thing within a page of each other so you can easily put together a story about how we go from elements to molecules to using things in our lives.

The best thing about this book is not the ease of teaching yourself, but rather that it easily captured the attention of an apathetic teen with a penchant for rolling his eyes screaming "I don't care" and hold it for over an hour while he flipped through the pages quietly and reading the descriptions.

Put those two things together and this became an amazing tool to help tutor people in chemistry. As someone that is interested in chemistry (and soil chemist), I found it really delightful to look at and wished I had something like this growing up. It really brings the concepts to life in a way that the dull chemistry books of old never could.

KYLE CHRISTY says

Another excellent book by my new favorite author. Sharp images and witty text are a match made in heaven, especially for this book.

Eric Sullenberger says

I've known about Theodore Gray for a long while. I've been a fan of him, his periodic table, and his webpage since I stumbled across it my first year teaching. I read the entirety of his webpage before he made his now famous poster or acquired the modern incarnation of his webpage based off it. I subscribed to *Popular*

Science magazine solely because he wrote a monthly article for them at the time. I didn't mind cancelling the subscription either after I confirmed that he had stopped writing for them. Ten members of the Class of 2011 purchased the big version of his poster for me when they were freshmen as a Christmas gift. It hangs prominently in my classroom. I have been a fan for a while and so when his The Elements: A Visual Exploration of Every Known Atom in the Universe book came out I purchased it and read it cover to cover. I've looked at his Mad Science & Mad Science 2 books, but since they were just reprints of his *Popular Science* articles I decided not to purchase them. I'll admit that I haven't bought a lot of the ancillary merchandise nor did I buy the app , although I did snag it up when it became free.
So I was excited to learn that Theo was doing a sequel to The Elements. Again I have not purchased the app and I waited until I received the book as a Christmas gift to read it. I read it all the way through in about two days. I was not as visually appealing as The Elements, but there was still a lot that I learned from it. Theodore Gray even made fun of the book himself several times as he commented that it was difficult to find ways to make piles of white powder interesting. There were times where I wished the book spent more time on one [pigments] topic or less on others [fibers]. As much as I liked to molecular representation of molecules there were times where the differences only come out in 3-dimensions, and although I appreciate the consistency of format there were other times where it was broken to show complicated molecules and I wish the same had been done on these exceptions.
I was also excited to hear in a talk that he gave at Google that there will be a third in the future that will focus on Reactions. The first was certainly better, but I liked this book a lot and am glad to have it as a reference.

Alex says

Another hit from Theodore Gray. He is quickly becoming one of my favorite authors. I started with the Elements, then the supplement, then mad science and so on. Molecules is another great addition to that collection.

As a chemistry teacher, I'm always looking for a way to make science more meaningful for students, as well as more interesting and more applicable to their lives. This book does a fantastic job in making it perfectly plain how ubiquitous chemistry is in our lives and how critical it is to our lives. I found numerous instances of things I could incorporate in my class that would be interesting for most students as well as educational. I loved reading this book for that. In addition, I found the book personally fascinating. The pictures were fabulous as usual and the descriptions were complete, concise, and sometimes comical. 5 stars gray, excellent job.

Pelican G. says

I read it cover-to-cover the day it came in the mail! (And I read it again, two hours later...and again, the next day...) It's awesome! You learn a lot! Can't put it down! You get the picture!

Thomas Ray says

I wish I'd had this book before I took college chemistry. Whereas a chemistry text presents the subject as one the student must understand thoroughly before beginning study, Gray shows some of the simplicity. Where university chemistry presents Organic Chemistry as this vast, incomprehensible field, with millions of compounds, Gray shows us how carbon atoms combine with each other and with hydrogen, in simple,

predictable ways.

Pages 19-20, and page 228, are particularly illuminating. Pages 19-20 show all the 50 ways 1, 2, 3, or 4 carbon atoms can form molecules with just each other and hydrogen.
1 Carbon atom can form just one such molecule: CH4, methane.
2 Carbons can form three distinct molecules: C2H2 acetylene, C2H4 ethylene (ethene), C2H6 ethane.
3 carbons can form nine distinct molecules:
C3 (no hydrogen), cyclopropatriene.
C3H2 two ways
C3H4 three ways
C3H6 two ways
C3H8 one way, 2-methylpropene
4 carbons can form 37 distinct molecules:
C4 (no hydrogen), 3 ways
C4H2, 7 ways
C4H4, 11 ways
C4H6, 9 ways
C4H8, 5 ways
C4H10, 2 ways
Gray shows us pictures of all of these: in every case each carbon has 4 bonds to other carbon or hydrogen atoms; each hydrogen has one bond.

Page 228 shows DNA's code.

A DNA molecule is a library of books called chromosomes, composed of sentences called genes. Each gene codes for one protein. Genes are written in a language that has 22 words in its dictionary. The words are called codons: each codon specifies a particular amino acid (building blocks of proteins), or a "STOP: end of gene: end of sentence. end of protein." The codons are all three-letter words. The letters are the bases adenine, guanine, cytosine, thymine: A, G, C, T.
Gray shows us which amino acid (21 in all) is coded for by each of the possible 64 codons, each a three-letter word of AGCTs.
It's a picture book. Gray bemoans how many of the pictures are of white powders, which many organic compounds are.
Gray explains how the structure of the molecule gives rise to the physical and chemical properties of the compound.

Molecules is a kind of a sequel to Gray's book, The Elements. However, comparing the two books makes clear that it is in combining that chemical elements become interesting. The Elements seems to be largely just a set of photos of Gray's odd collection of items fashioned from pure or nearly pure chemical elements. TheMolecules book demystifies some of the basics of chemistry--and points out how very few chemical elements--indeed, just two, carbon and hydrogen--it takes to make a great many of the most useful and ubiquitous compounds.
Gray's other books, on Mad Science, feature him doing impressive and dangerous demonstrations, such as salting popcorn in the smoke formed by bubbling pure chlorine through molten sodium.
Gray is a true egghead: one of the authors of Mathematica software, which does seemingly impossible computation. He's a lifelong amateur chemist, and very good at explaining how things work.
Some of Gray's insights I've put into Goodreads trivia question form:
https://www.goodreads.com/trivia/auth...