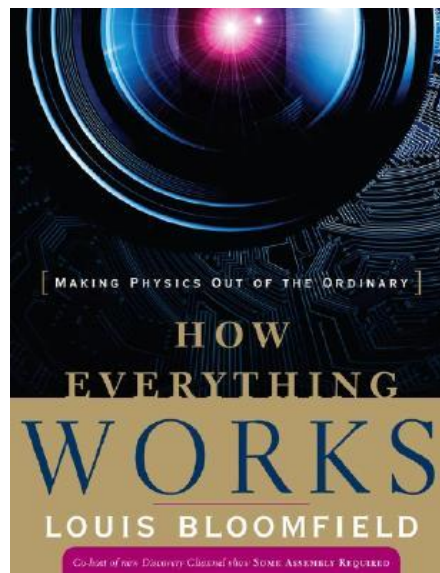




How Everything Works: Making Physics Out of the Ordinary

Louis A. Bloomfield

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How Everything Works: Making Physics Out of the Ordinary Louis A. Bloomfield

A user's manual for our everyday world!

"Whether a curious layperson, a trained physicist, or a beginning physics student, most everyone will find this book an interesting and enlightening read and will go away comforted in that the world is not so strange and inexplicable after all."

--**From the Foreword by Carl Wieman**, Nobel Laureate in Physics 2001, and CASE/Carnegie US
University Professor of the Year 2004

If you didn't know better, you might think the world was filled with magic--from the household appliances that make our lives easier to the CDs and DVDs that fill our world with sounds and images. Even a simple light bulb can seem mysterious when you stop to think about it.

Now in *How Everything Works*, Louis Bloomfield explains the physics behind the ordinary objects and natural phenomena all around us, and unravels the mysteries of how things work. Inside, you'll find easy-to-understand answers to scores of fascinating questions, including:

How do microwave ovens cook food, and why does metal sometimes cause sparks in a microwave? How does an iPod use numbers to represent music? How do CDs and DVDs use light to convey information, and why are they so colorful? How can a CT or MRI image show a cross-sectional view of a person without actually entering the body? Why do golf balls have dimples? How does a pitcher make a curveball curve and knuckleball jitter about in an erratic manner? Why is the sun red at sunrise and sunset? How does a fluorescent lamp produce visible light? You don't need a science or engineering background to understand *How Everything Works*, all you need is an active curiosity about the extraordinary world all around you.

How Everything Works: Making Physics Out of the Ordinary Details

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torque says

Want to know more about the world you live in every day? This book makes the physics in the ordinary very interesting. Most of the time the descriptions are easy to understand and your worldview will definitely change.

Mary Beth says

I haven't actually finished this book, but have used it as a reference and it's great for that. My son and I used this in conjunction with a traditional math based physics text and they complemented each other nicely.

Amiri says

This is the physics textbook I wish I had. I love this book. My only complaint is the lack of color illustrations.

This would be an awesome course supplement to all those standard math-calculus-heavy physics textbooks.

I am learning TONS of information that will impress my 5 year old, also.

Chris says

This book was some heavy going, but it was worth the effort. It's a physics textbook with much of the math stripped out (a relief for me). Physical principles are presented by illustrating their applications in everyday objects. The writing style is pretty casual, which is another welcome change.

It's rare for me to read a book that I want to re-read after finishing a couple of chapters. This book is so dense with useful knowledge that I know much of it has already leaked out of my ears. Over the course of the year or so that it's taken me to read this tome, I've incorporated my learning into a dozen or more lunch conversations. Time has dimmed much of what I learned, so I want to read it again. My book queue has accumulated a fair amount of (literal) dust, though, so it may be a while before I get back to it. In the meantime, I'm sure that I will be encouraging friends and family to borrow it and to read it cover-to-cover. It is a fantastic survey of the modern marvels that we take for granted in our everyday lives.

Marcy says

Admittedly, I haven't finished to book. But I have finished reading all the sections that correspond to Bloomfield's physics course of the same name on Coursera. I hope he'll do a follow up course so I can

continue reading along this book. Although the textbook is highly readable, I don't feel that I can move forward without the motivation and support of the class. However, Bloomfield is extremely adept at making physics concepts (for this reader who has never studied a day of physics in her life, thank you, LAUSD) comprehensible to the average person. I especially like the lightness and humour with which he brings to his prose and his examples. Anyone interested in beginning physics would find a delightful companion in this textbook.

Matthew says

this is the best book for teaching simplified Physics, i would let a 5 year old read this, it is very easy to understand and the content is great!

Barbara says

I have no intention of actually *reading* this. :-) Got it as a companion to taking Dr. Bloomfield's really delightful Coursera course: How Things Work I. And know now that I was entirely correct in taking advanced history and advanced English as a senior in high school, instead of physics and calculus. This stuff is hard! But it also reinforces my realization of my learning style which is NOT visual or aural. It is written. The combination is good...but I don't "get it" until I go to the book.

Read enough to pass with Coursera course with distinction (NOT that I think I deserve it). Physics is HARD.

Ryan says

It was a good book with many helpful diagrams. I learned a lot about things I didn't know and even more about things I already knew well.

My only issue with this book is that the author has a tendency to go overboard with explaining even simple concepts. Do we really need to know what happens at the microscopic level when you move a box? Or how many electrons there are in an atom that's in a material that is used in a shoe? There was a lot of over the top explanations for things that didn't really need it. I feel this book could have been divided into two separate but complimentary books: one book for actually explaining how things work and the other a combined chemistry/physics textbook.

Although for certain ideas this was essential to understand the background physics, the rest could have just gone with basic explanations and more diagrams.

It took me a couple of years to finish everything in this book because it's not light reading especially if you really want to picture in your head all the explanations.

Nonetheless I enjoyed this book and learned a great deal from it. If there was a second book to follow it, I would certainly buy it.
