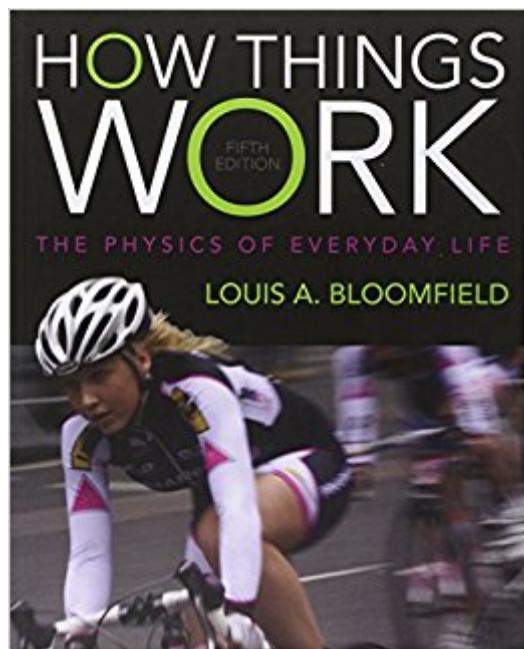


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# How Things Work: The Physics Of Everyday Life



## **Synopsis**

How Things Work Fifth Edition uses familiar objects to introduce basic physics concepts, demonstrating the excitement and relevance to professionals in a variety of technical fields. Because its structure is defined by real-life examples, this book explores concepts as they are needed and then revisits them later on when they reappear in other objects. It integrates case studies throughout the chapters to easily convey an understanding and appreciation for physics. For example, discussions of skating, falling balls, and bumper cars are included to explain the Laws of Motion. Air conditioners and automobiles are used to explore thermodynamics. Engineers, architects, and professionals in other technical fields will benefit from the material that connects science to our everyday world.

## **Book Information**

Paperback: 592 pages

Publisher: Wiley; 5 edition (January 22, 2013)

Language: English

ISBN-10: 1118237765

ISBN-13: 978-1118237762

Product Dimensions: 8 x 0.7 x 9.9 inches

Shipping Weight: 2.2 pounds

Average Customer Review: 4.2 out of 5 stars 49 customer reviews

Best Sellers Rank: #31,111 in Books (See Top 100 in Books) #14 in Books > Science & Math > Experiments, Instruments & Measurement > Experiments & Projects #125 in Books > Textbooks > Science & Mathematics > Physics #349 in Books > Science & Math > Physics

## **Customer Reviews**

The reason I bought this book was that I had enrolled for Coursera's online study course, entitled HOW THINGS WORK, led by Prof Bloomfield. Students were not required to buy the book and the chapters relating to the course were available online. I really dislike reading large format books on a small glowing screen, so I borrowed it from the local library. Six weeks later, when the course was over, I felt I HAD to own the book. It offers a lucid and well-rounded appreciation of the principles of Physics. I was very pleased to be able to afford the paperback version and am delighted to have the most recent edition (the library's edition was maybe 2008). Potential buyers need to understand that this is a text book, not a science popularizer. It is aimed at college-going students. As I did not study the sciences when I was in school and college, I have often wanted to make up the deficit in my

understanding. HOW THINGS WORK is really very good for that. It is not intended for casual reading and it does require the reader to concentrate, to think through the many examples and to take notes. I am reading it slowly and expect to work at it over the next two years. Buying it is an investment in my understanding of the mechanics of reality.

I have bought this book because I want to deepen and enlarge my grasp of physics of everyday life, right after attending the Coursera Mooc, entitled “How Things Work”, created and animated by Prof Bloomfield, the author of the book. With this excellent textbook with just enough mathematics and a lot of enlightening illustrations, Pr Bloomfield shares his passion for the physics of everyday life and his desire to make it accessible to everyone. The only default of this excellent book is its price, but the page count is near 600.

Traditional physics books/courses operate like this: The first substantive chapter/unit introduces a few basic concepts. They are related to some real world examples and students then do word problems using these concepts. In the next chapter/unit, a few more concepts are introduced and related to the real world. Students do problems using those concepts. In the next chapter/unit, a few more concepts are introduced ... and so on until a fairly inclusive system is developed. The progression is logical but the whole exercise is somewhat abstract. Bloomfield does it differently. He starts with a real world happening and asks, “How can this be explained using physics?” This requires a lot more physics a lot earlier. In fact, the first two chapters (90 pages of 600) expose the student/reader to most of what is normally covered in the first semester of an introductory physics course--more in some ways, since Bloomfield gives a great deal of attention to rotational motion. Many people will find this more interesting but it risks overwhelming the student/reader, like learning to swim by jumping into the deep end rather than slowly proceeding: breathing, floating, kicking, stroking, now put it all together. There is also less math. Bloomfield seems to think that students learn better by working through why something is happening rather than working through word problems. I found Bloomfield’s way of developing things fascinating. But I’m a high school physics teacher who already had a fairly good understanding of the underlying principles. Your mileage may vary.

I have been teaching college physics as my second career for more than a dozen years, and was sorry to see Gerry Wilson’s excellent textbook becoming more and more anemic with each edition and new co-authors. In the earlier versions, Gerry conveyed excitement and curiosity in each

chapter. It is this aspect that I find so refreshing in Lou's book - his use of "real world" examples to introduce topics that can be tried by the reader if they are unfamiliar to them, and his gentle introduction to the subject. His ability to lead the reader deeper and deeper into the physics concepts as the chapter progresses is done masterfully. I had the pleasure of meeting Lou a few years ago when he gave a local seminar, and he was as bright, interesting and gracious as he appears to be in the textbook. Bravo!

Took a long time to get here plus the paper is super thin. Turn the page a little crooked or open it fast and you'd tear the page.

LOVE IT!!!!

Goes beyond the usual(and good)How Things Work. Louis Bloomfield not only gives you why things work the way they do, he writes in a very understandable way. One doesn't have to wonder if you're ready for physic. A fun book.

I am using this text for Prof. Bloomfield's Intro Physics course How Everything Works on Coursera. The text is very helpful. The first two chapters of the text cover the material in the first course. There will be other physics courses on Coursera and they will probably follow the next chapters in the text.

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