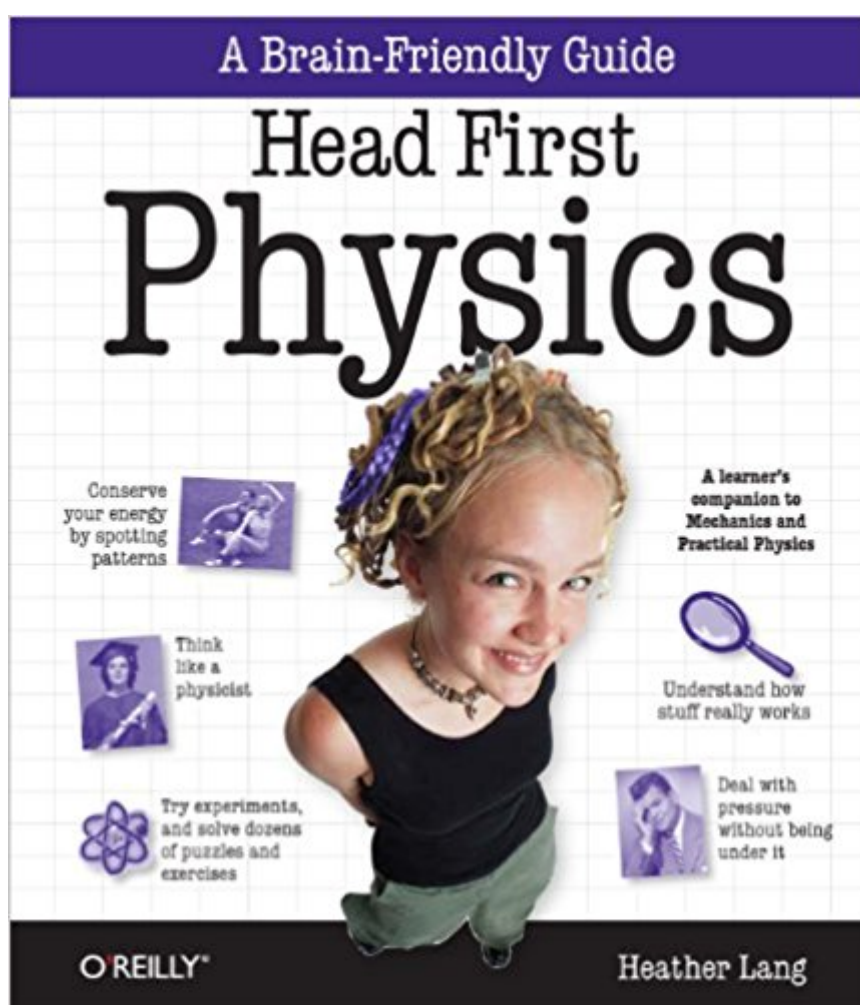


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# Head First Physics: A Learner's Companion To Mechanics And Practical Physics (AP Physics B - Advanced Placement)



## Synopsis

Wouldn't it be great if there were a physics book that showed you how things work instead of telling you how? Finally, with *Head First Physics*, there is. This comprehensive book takes the stress out of learning mechanics and practical physics by providing a fun and engaging experience, especially for students who "just don't get it." *Head First Physics* offers a format that's rich in visuals and full of activities, including pictures, illustrations, puzzles, stories, and quizzes -- a mixed-media style proven to stimulate learning and retention. One look will convince you: This isn't mere theory, this is physics brought to life through real-world scenarios, simple experiments, and hypothetical projects. *Head First Physics* is perfect for anyone who's intrigued by how things work in the natural world. You'll quickly discover that physics isn't a dry subject. It's all about the world we live in, encompassing everything from falling objects and speeding cars, to conservation of energy and gravity and weightlessness, and orbital behavior. This book: Helps you think like a physicist so you can understand why things really work the way they do Gives you relevant examples so you can fully grasp the principles before moving on to more complex concepts Designed to be used as a supplement study guide for the College Board's Advanced Placement Physics B Exam Introduces principles for the purpose of solving real-world problems, not memorization Teaches you how to measure, observe, calculate -- and yes -- how to do the math Covers scientific notation, SI units, vectors, motion, momentum conservation, Newton's Laws, energy conservation, weight and mass, gravitation and orbits, circular motion and simple harmonic motion, and much more! If "Myth Busters" and other TV programs make you curious about our physical world -- or if you're a student forced to take a physics course -- now you can pursue the subject without the dread of boredom or the fear that it will be over your head. *Head First Physics* comes to rescue with an innovative, engaging, and inspirational way to learn physics!

## Book Information

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## Customer Reviews

About 'Head First' Books We think of a Head First Reader as a Learner Learning isn't something that just happens to you. It's something you do. You can't learn without pumping some neurons. Learning means building more mental pathways, bridging connections between new and pre-existing knowledge, recognizing patterns, and turning facts and information into knowledge (and ultimately, wisdom). Based on the latest research in cognitive science, neurobiology, and educational psychology, Head First books get your brain into learning mode. Here's how we help you do that: We tell stories using casual language, instead of lecturing. We don't take ourselves too seriously. Which would you pay more attention to: a stimulating dinner party companion, or a lecture? We make it visual. Images are far more memorable than words alone, and make learning much more effective. They also make things more fun. We use attention-grabbing tactics. Learning a new, tough, technical topic doesn't have to be boring. The graphics are often surprising, oversized, humorous, sarcastic, or edgy. The page layout is dynamic: no two pages are the same, and each one has a mix of text and images.

Metacognition: thinking about thinking If you really want to learn, and you want to learn more quickly and more deeply, pay attention to how you pay attention. Think about how you think. The trick is to get your brain to see the new material you're learning as Really Important. Crucial to your well-being. Otherwise, you're in for a constant battle, with your brain doing its best to keep the new content from sticking.

Here's what we do: We use pictures, because your brain is tuned for visuals, not text. As far as your brain's concerned, a picture really is worth a thousand words. And when text and

pictures work together, we embedded the text in the pictures because your brain works more effectively when the text is within the thing the text refers to, as opposed to in a caption or buried in the text somewhere. We use redundancy, saying the same thing in different ways and with different media types, and multiple senses, to increase the chance that the content gets coded into more than one area of your brain. We use concepts and pictures in unexpected ways because your brain is tuned for novelty, and we use pictures and ideas with at least some emotional content, because your brain is more likely to remember when you feel something. We use a personalized, conversational style, because your brain is tuned to pay more attention when it believes you're in a conversation than if it thinks you're passively listening to a presentation. We include many activities, because your brain is tuned to learn and remember more when you do things than when you read about things. And we make the exercises challenging-yet-do-able, because that's what most people prefer. We use multiple learning styles, because you might prefer step-by-step procedures, while someone else wants to understand the big picture first, and someone else just wants to see an example. But regardless of your own learning preference, everyone benefits from seeing the same content represented in multiple ways. We include content for both sides of your brain, because the more of your brain you engage, the more likely you are to learn and remember, and the longer you can stay focused. Since working one side of the brain often means giving the other side a chance to rest, you can be more productive at learning for a longer period of time. We include challenges by asking questions that don't always have a straight answer, because your brain is tuned to learn and remember when it has to work at something. Finally, we use people in our stories, examples, and pictures, because, well, you're a person. Your brain pays more attention to people than to things.

This huge tome gives the best presentation of Physics I've seen: Clear explanations, real-life examples, and even labs! I found it useful as a teacher to draw upon in the classroom. The size of it precludes it from being convenient to carry around, but it is what it is.

Love it! Good job!

Using as a review prior to a certification exam, very applicable, written in a easy to follow format, like the practical applications of physics

Head First edition is the most enjoyable to read and remember almost everything you read. Not just

remember, you can connect things from the book with the world outside this book. As with some books from this edition I had a chance to get my hands on, this one is no exception. Real life examples, nice stories that raise your interest for participation, interesting questions that makes you think and so on. I haven't had much chance during my education to properly learn about physics but now that I have this book I feel like it's about time to know at least basics about the world around me. And this book is all I needed.

A superb book for practical physics. Written in a clear and easy to understand way. Definitely a help.

I am an engineer, and I teach an applied Physics class (among many others) at a community college. My students are the perfect audience for this book. Don't let the size of the book scare you, because it IS a huge book. Keep in mind that it is NOT a text, but is intended to be a learning companion/reference, which is exactly how I use it, and how I encourage my students to use it. In my applied Physics class, we are not so concerned with "the numbers", as we are with the "big picture" (concepts) and how to apply what we know about the numbers. Don't get me wrong, we do have to do calculations, but for anyone who is afraid of math, this book does a good job explaining the physics concepts, while using real-world (or even fun) applications. In other words, you use your observations (typically prior knowledge) to set up the problem, then you do the calculations, then you ask yourself, "Does this make sense?". The author does a nice job with the examples, to make what is typically thought of as a very dry subject, kind of fun (or at least silly enough to make a group of community college students laugh at 8:00 am). The book is not as detailed as a proper text, however, for my audience, it doesn't have to be. My only real issue with the book is how some of the examples are continuations of previous examples. While I would use continuous examples in a lecture, I would rather see more stand-alone examples in a reference, but as I said, the examples are still pretty good. If a 4.5 star rating was available (as opposed to 4 OR 5 stars), that's where I'd rate this. While this book does offer equations galore, if you are someone who is obsessed with finding an equation to solve a problem, and would prefer to plug-n-chug, then you may find this book touchy-feely. If you like to think about what is going on, THEN find the right equation, I recommend this as your reference.

This book is as good any of the Head First books I have purchased and used. In this case I used it to tutor some kids in the mechanics portion of physics. However, be sure to read the ENTIRE title - "Head First Physics: A Learner's Companion to Mechanics and Practical Physics". Thus the

emphasis is on the mechanics portion of physics and the tone is practical in nature. There is enough rigor there, but the tone is conversational as in all of the Head First books by O'Reilly. If you are looking for a tutorial on optics, acoustics, electricity and magnetism, and the rest of what composes a college freshman two-semester sequence on general engineering physics prepare to be disappointed - very disappointed. However, that is not what the author is selling you. I wouldn't recommend this as a stand-alone text - I don't think it is rigorous enough to be that. However, as a supplement to a standard college physics text on the mechanics portion of physics, I think it does a great job. It turns the incomprehensible into something that a good student willing to put forth some effort can understand and turns all of the talk of vectors and forces into an approach to mechanics problems that the student can use to attack most mechanics problems. For that purpose I highly recommend it. The student doesn't need to know calculus. The highest mathematics used is trigonometry. The following is the table of contents that is currently unavailable in the product description:

Chapter 1. think like a physicist  
Chapter 2. making it all MEAN something  
Chapter 3. scientific notation, area, and volume  
Chapter 4. equations and graphs  
Chapter 5. dealing with directions  
Chapter 6. Displacement, Velocity, and Acceleration  
Chapter 7. Equations of motion (part 1)  
Chapter 8. Equations of motion (part 2)  
Chapter 9. triangles, trig and trajectories  
Chapter 10. momentum conservation  
Chapter 11. weight and the normal force  
Chapter 12. using forces, momentum, friction and impulse  
Chapter 13. torque and work  
Chapter 14. energy conservation  
Chapter 15. tension, pulleys and problem solving  
Chapter 16. circular motion (part 1)  
Chapter 17. circular motion (part 2)  
Chapter 18. gravitation and orbits  
Chapter 19. Oscillations (part 1)  
Chapter 20. Oscillations (part 2)  
Chapter 21. think like a physicist  
Appendix A. leftovers  
Appendix B. equation table

'Head First Physics: A Learner's Companion to Mechanics and Practical Physics' is a wonderful book for anyone that wants to learn physics in a fun and practical way. This book is geared toward new learners or basic ones that want to learn without knowing they are doing so. Instead of a bland 1,500+ page book with just text regarding Newton and the other great minds, you get a USABLE book that is FUN FUN FUN. I love the Head First books because they present subject matter in a way that is DIFFERENT. Written by an experienced academic, Heather Lang writes in a format that is truly a delight. If you are looking for a masters Physics book you will be disappointed. If you are young, in high school or just an adult that wants to learn more in a BETTER way this book is a gem.\*\*\*\*\* HIGHLY RECOMMENDED

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