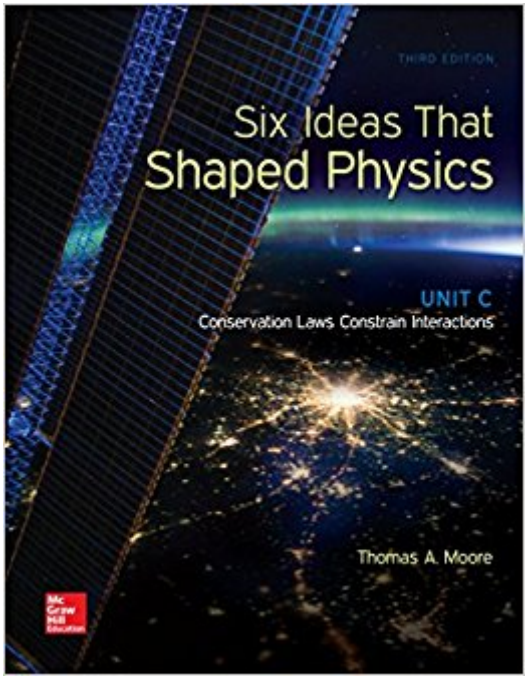
Six Ideas That Shaped Physics: Unit C - Conservation Laws Constrain Interactions (WCB Physics)



Synopsis

Six Ideas That Shaped Physics is the 21st Century’s alternative to traditional, encyclopedic textbooks. Thomas Moore designed this textbook to teach students the following: (1) To apply basic physical principles to realistic situations (2) To solve realistic problems (3) To resolve contradictions between their preconceptions and the laws of physics (4) To organize the ideas of physics into an integrated hierarchy.McGraw-Hill Education’s Connect, is also available as an optional, add on item. Connect is the only integrated learning system that empowers students by continuously adapting to deliver precisely what they need, when they need it, how they need it, so that class time is more effective. Connect allows the professor to assign homework, quizzes, and tests easily and automatically grades and records the scores of the student’s work. Problems are randomized to prevent sharing of answers an may also have a "multi-step solution" which helps move the students’ learning along if they experience difficulty.

Book Information

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Customer Reviews

Thomas A. Moore is a professor in the physics department of Pomona College. He graduated from Carleton College in 1976, and earned an M. Phil. in 1978 and a Ph. D. in 1981 from Yale University. He then taught at Carleton College and Luther College before taking his current position at Pomona College in 1987, where he won a Wig Award for Distinguished Teaching in 1991. He served as an active member of the national Introductory University Physics Project (IUPP), and has published a number of articles about astrophysical sources of gravitational waves, detection of gravitational

waves, and new approaches to teaching physics. His previous books include A Traveler's Guide to Spacetime (McGraw-Hill, 1995) on special relativity, and a six-volume introductory calculus-based physics text called Six Ideas That Shaped Physics (McGraw-Hill, 2003). --This text refers to an out of print or unavailable edition of this title.

The Six Ideas That Shaped Physics series is one of those physics textbooks that tries very hard to change how students think about physics. And maybe it represents the start of a new trend in physics education: introducing the great conservation laws of mechanics instead of Newton's laws in an attempt to introduce students to the heart of physics. But on the other hand, the old guard of physics texts, Kleppner'sÃ Â An Introduction to MechanicsÃ Â andÃ Â The Feynman Lectures on Physics, are too timeless to put aside. When I picked up Unit C the summer after taking calculus based physics as a high school senior, I was impressed by the approach to mechanics I had never seen before. But after a year of honors introductory physics using the Six Ideas Series in college, my appreciation for Moore's unique textbooks cooled. That is, his books were useful only once.Unit C: Conservation Laws Constrain Interactions covers the bare minimum for any student's physics education: vectors, energy, and linear and angular momentum. Notably, Moore refuses to cover forces in any great extent in his first text of the series, which for a person (like myself) with a strong introductory physics background, should be highly novel and interesting. However, I can only imagine the complexities this approach presents to a student trying to grasp physics for the first time, and my own experience taught me the book was useless for one who has already gone through it once!The major fault with this textbook (and with the whole series), is that the reader is not left with a "deep" understanding of physics. Some basic situations and principles are shown, such as a pair of billiard balls colliding on a table, but the sort of physical intuition needed to solve complicated problems is left out amid the conversational prose and nondescript end of chapter problems. From Unit C, you will certainly learn what the conservation of momentum looks like mathematically, you will understand what a one-dimensional potential energy well is, but the book will likely not give you the enlightenment necessary for solving challenging problems. You will need Kleppner and Kolenkow for that.The Six Ideas series textbooks, and Unit C in particular, are good reads for the individual who has a reasonable physics background and wants to solidify it through a summer of light reading. In particular, the two page pre-chapter overviews and two minute post-chapter problems make the book valuable to the self-studier; it would be wonderful if other textbooks used a similar arrangement. But beyond the novel perspective, the broad approach to mechanics ranging from the conservation of linear momentum to the brief overview of thermal

energy contained in this text, and the bells and whistles Moore's student-centered approach provides, the book is just one more of many introductory textbooks out there.So if you are studying physics over the summer, go ahead and purchase the series. Otherwise, the classics are just too good to replace.

Needed this book for a class but its not written in a very com of licated way to understand. The author tosses terms and symbols around expecting the reader to already know what they are or how they are to be read without explaining. There are very few examples to explain the concepts. The terminology isnt well defined so the reader is left to look at other books and online sources to begin to understand what the author is trying to say.This book is poorly organized in regards to layout and progression of the chapters.Overall this book isnt worth the money.

This book was rather easy to read through, but it didn't seem to offer incredibly helpful information on a lot of the topics. Practice problems were good. It's a fine book, but I wouldn't say it's great.

It was a text book I was required to get some years ago, so I'm sure it did its job. As to why the instructor wanted us to get so many books... dunno, but it's kind of stupid in my opinion.

I HATED all of Moore's books. They're too wordy and he just straight up tries too hard. Professors at my university like this book and try having us teach ourselves using this book as a guide. It sucks, and makes everything more complicated than it needs to be I feel like any other university physics text book would be better than this one. He also comes up with these stupid variable names for everything which further complicates things. I'm a math, Comp.Sci, Physics major and if there's an easier way to do something, I would be the one to find it. These books are NOT easy. If I could give 0/5 stars, I would.

In really good comditionThough the price is a little bit high

descent price for this book, but it is really hard to understand. The author uses a lot of sub and superscripts in the formulas and it is hard to follow.

The book was is great condition, used. It will work perfectly for my needs.

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