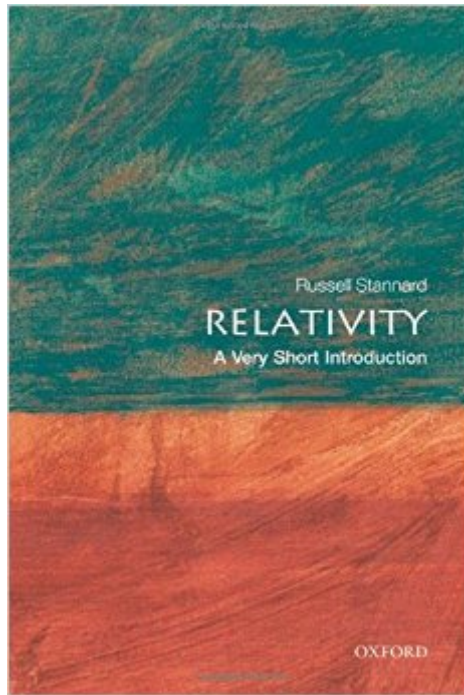


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# Relativity: A Very Short Introduction



## Synopsis

If you move at high speed, time slows down, space squashes up and you get heavier. Travel fast enough and you could weigh as much as a jumbo jet, be flattened thinner than a CD without feeling a thing-and live forever! As for the angles of a triangle, they do not always have to add up to 180 degrees. And then, of course, there are black holes. These are but a few of the extraordinary consequences of Einstein's theory of relativity. It is now over a hundred years since he made these discoveries, and yet the general public is still largely unaware of them. Filled with illuminating anecdotes and fascinating accounts of experiments, this book aims to introduce the interested lay person to the subject of relativity in a way which is accessible and engaging and at the same time scientifically rigorous. With relatively few mathematical equations--nothing more complicated than the Pythagoras's Theorem--this VSI packs a lot time into very little space, and for anyone who has felt intimidated by Einstein's groundbreaking theory, it offers the perfect place to start. About the Series: Combining authority with wit, accessibility, and style, Very Short Introductions offer an introduction to some of life's most interesting topics. Written by experts for the newcomer, they demonstrate the finest contemporary thinking about the central problems and issues in hundreds of key topics, from philosophy to Freud, quantum theory to Islam.

## Book Information

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## Customer Reviews

I recently read a handful of books on relativity, and I rank them as follows: Highly recommended introductory works: \* Relativity Simply Explained by Martin Gardner -- best introductory book. \* The Elegant Universe (chapters 2 & 3) by Brian Greene -- extremely lucid, but not as in-depth as

Gardner's book -- possibly the best if you want a shorter introduction. \* Einstein by Walter Isaacson, chapter 6 (special relativity) & chapter 9 (general relativity) -- not just a great biography, also a very lucid explanation of Einstein's ideas. \* The Fabric of the Cosmos (chapters 2 & 3) by Brian Greene -- a discussion of general relativity & the nature of spacetime. Further reading: \* Inside Relativity by Mook & Vargish -- great introduction to Newton, along with great sections on what high-speed objects look like and a great section on how Maxwell's equations of electromagnetism relate to relativity.

This is the first book in the "A Very Short Introduction" series I have read. Slightly larger than seven inches by four inches, and a bit over 100 pages long, they are diminutive books for sure. This one on relativity, I found very interesting. Relativity is a topic I have always had difficulty wrapping my head around but Stannard does a pretty good job of making the subject sink in. The book is divided into two sections. In the first he covers special relativity, and, in the second, he covers general relativity. In the preface, he mentions some ideas about space, time, and matter that we might take for granted in our Newtonian world. In the first section he redefines five common sense ideas: we are all in the same three-dimensional space, time passes the same for everyone, the idea of simultaneity, there is no speed limit, and matter is conserved - it can neither be created nor destroyed. In addressing these topics, Stannard delves into time dilation, length contraction, the twin paradox, loss of simultaneity, space-time diagrams, four dimensionality, and the ultimate speed of the universe - whew! All interesting stuff for sure. I particularly enjoyed the section on the twin paradox - and Stannard's clear explanation - where one twin travels to another far away planet and back at near the speed of light, only to find that the other twin has aged considerably. Note that Stannard does use some formulas to demonstrate the concepts, but don't worry, if you have a basic background in algebra, it should all make sense to you. The formulas, I think, are necessary to convey a proper understanding of the material, but even if you are not up to par on your math, he does a good job of explaining the theory so you shouldn't have a problem here.

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