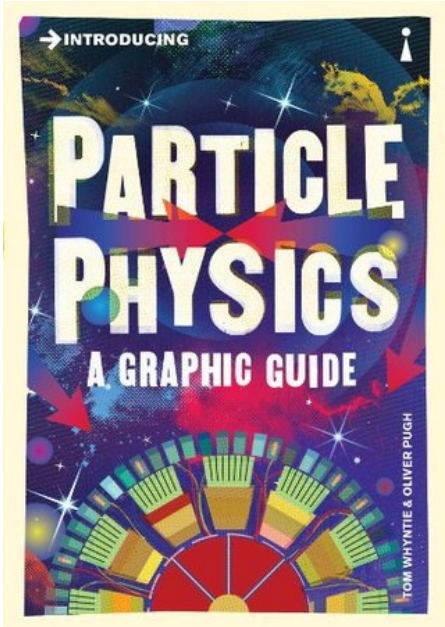

Introducing Particle Physics: A Graphic Guide

Tom Whyntie , Oliver Pugh

Introducing Particle Physics: A Graphic Guide

Tom Whyntie , Oliver Pugh

Introducing Particle Physics: A Graphic Guide Tom Whyntie , Oliver Pugh
What really happens at the most fundamental levels of nature?

Introducing Particle Physics explores the very frontiers of our knowledge, even showing how particle physicists are now using theory and experiment to probe our very concept of what is real.

From the earliest history of the atomic theory through to supersymmetry, micro-black holes, dark matter, the Higgs boson, and the possibly mythical graviton, practising physicist and CERN contributor Tom Whyntie gives us a mind-expanding tour of cutting-edge science.

Featuring brilliant illustrations from Oliver Pugh, Introducing Particle Physics is a unique tour through the most astonishing and challenging science being undertaken today.

Introducing Particle Physics: A Graphic Guide Details

Date	:	Published June 5th 2014 by Icon Books Ltd (first published February 11th 2014)
ISBN	:	
Author	:	Tom Whyntie , Oliver Pugh
Format	:	Kindle Edition 192 pages
Genre	:	Science, Physics, Nonfiction, Sequential Art, Graphic Novels, History, Comics

From Reader Review Introducing Particle Physics: A Graphic Guide for online ebook

Brian Clegg says

I've long been a fan of the massive 'Introducing' series of graphic guides and even contributed one (Introducing Infinity) with the excellent Oliver Pugh. They provide an easy-to-digest overview of a topic, using pages that are dominated by illustrations that often remind me of Terry Gilliam's work on Monty Python, combined with speech bubbles and small chunks of text to get the message across.

Some work better than others and for me, Introducing Particle Physics was a mixed experience. I don't doubt that Tom Whyntie had a huge challenge to face. Whole chunks of particle physics are, frankly rather dull, while other parts are amongst the most difficult to explain in all of physics. Really making symmetry breaking and the whole Higgs business comprehensible (rather than putting it across at the trite level the news correspondents managed) is very difficult, and I'm not sure that Whyntie manages it. I suspect as someone working in the field he is too close to it to really understand why everyone else finds it so daunting.

The other problem I had was that I found the text rather too dense and not hugely readable in places. But having said all that, given the problems of getting across this subject there is no doubt at all that this format makes for one of the most approachable attempts I've seen. Bearing in mind that to explain particle physics, Whyntie also has to pull in chunks of quantum physics and nuclear physics it's quite a tour-de-force that this book was ever written at all. So don't expect everything about particle physics to suddenly become crystal clear – but this will certainly help fill in a lot of the background before, perhaps, reading a more detailed book on the subject.

Ege Özmeral says

1) If light is a wave(transverse), then what is waving to transmit energy? Huygens imagined "the aether" by using Descartes' concept of the "plenum". Newton employed something like aether - "Aetheral Medium" to explain the refraction of light.

2) Michael Faraday had passed an electric current through a glass jar to study electricity in the absence of air. The jar produce what looks like a beam of light passing between negatively-charged(cathode) and positively-charged(anode).
The German school, which includes Heinrich Hertz, held that these rays must be a perturbation in the luminiferous aether. However, William Crookes showed that it actually acts like a beam of particles. Hertz dedicated that the rays had no electric charge, however, the vacuum tubes he used in his experiment wasn't good enough because there was too much gas, which would become charged itself, in it. Finally, J. J. Thomson proved that they had charge and mass. Thomson had discovered the electron and he found the ratio of its mass to its charge.
Note: To see mathematical formulas, check out the review of book named "Fizi?in F'si".
Ernest Rutherford determined that x-rays are a form of light under the supervision of Thomson. He also showed that Becquerel's rays were in fact made up of three type of radiation: alpha, beta, and gamma. Moreover, he also invented the concept of "half-life", the length of time it takes for radioactivity of a substance to halve. He concluded that mass of atom is concentrated in a tiny nucleus by shooting alpha particles at a thin foil of gold.

3) Max Born and Werner Heisenberg broke electromagnetism into quantas. Every point in space has a quanta associated with infinite set of tiny springs(harmonic oscillators). Paul Dirac brought matter(especially electrons) into the equation to produce the first complete Quantum Field Theory. The fact that electrons have spin plopped out of the algebra automatically.
Note: You know other things about Dirac's QFT(such as positron, renormalization and so on)

4) Isidor Isaac Rabi said "Who ordered that?" for the invention of the muon because it came out of nowhere. On the contrary the pion was predicted by the QFT.

Sally Sugarman says

This is another graphic guide that helps open new areas of knowledge. This is a complex topic and not one that can be fully comprehended through the reading of one book. However, the book does a good job of providing history and context for the subject and makes one want to read more. The use of graphics is most helpful in some of these more difficult subjects. There is a combination of drawings and photographs that are most useful as are the dialogue balloons. For tiny objects there are a lot of parts to a particle. The issue of matter and anti-matter is intriguing as is the way in which scientists build on each other’s work and try to test theories in this case using expensive technology. Unlike most of the books in this series, there is no bibliography which is disappointing since I want to read more. However, I am sure I can find additional material. This was a good beginning.

Laura S says

Great overview, wonderful for a recap when one hasn’t studied this material in years ...

Wendy says

I like it! Easy to read and a very handy glossary at the back.
Love the comic book style..

I received this book through the Goodreads First Reads, thank you for that.
The previews of two other books in this series that I received with it also look like they're worth reading. :)

S. Shelton says

The authors make a valiant attempt to familiarize Quantum Field Theory to an educated public in 192 illustrated lesions in a small paperback book. Unfortunately, they fail. Their goal was unattainable. Such a manifold complicated subject is a serious challenge for doctoral candidates majoring in Quantum Mechanics Physics. Each page is presented clearly, has a picture of the physicist(s) who discovered or developed the quantum point discussed, and shows relevant graphics. That’s fine. The most educated of the general public

would find this book an easy read but exceedingly difficult to understand. The problem is that the subject is just too complicated to be presented in such a miniature manner.

I have a Bachelor of Science degree in Physics—admittedly many years old. Nonetheless, I try to maintain minimum currency in Quantum Mechanics. I could understand, more or less, the concepts presented on most pages. The problem is the way the book is structured in headline tidbits. There’s no chance for an in-depth understanding or to tie concepts into a coherent understanding

To the author’s credit, they do cover the field—albeit superficially. They start with definitions of the atom, electron, proton, neutron; and proceed forthwith with the standard model, quarks, and the Higgs Boson; and conclude with supersymmetry, negative energy, dark matter, string theory, and a discussion of the solar neutrino.

Crescendo says

Very informative and clear, as clear as this kind of topics can be. This series has such a nice concept! Makes you want to read them all...

Daniel says

Somehow was able to understand this one a bit better. I guess it must be because "by trying to find out what we're made of, we really have found out just what we're made of"

Mick Kelly says

A good short introduction to quantum physics. Easy to read and follow, and a great intro to read before the revamped LHC makes the rewrite it!

Dana Robinson says

A pretty solid entry in the series, but you'll probably have a difficult time following it unless you have read other things in the field. It's a pretty complex, abstract subject, though, so it's not surprising that you might not have a solid grasp of the concepts after reading a comic about it. Still, it's worth a read - just understand that you are probably going to need to read other books to get a better understanding. It's been a while, but I recall The Particle Hunters by Ne'eman and Kirsh being quite good for this.

Walt says

Difficult to follow (of course, it's about quantum physics!) , but it provides a clear chronological record of the major discoveries.

Kelsey ■?■?■?■■?■?■?■?■? says

Overall a very interesting read. I would have to disagree with it being an introduction to particles physics. Some of the concepts in the book were not explained in detail as one would to a person who never heard of the concept the book likes to reference to throughout the novel. A rudimentary knowledge of physics is needed to understand and enjoy the book.

Julia Mihhailova says

The brief intro to the particle physics best fit for dummies like me. Totally recommend to those expressing a bit of interest in this complicated and mindblowing science. Fast and enjoyable reading, the pocket-size book totally suits you unless you prefer carrying heavy stuff.

Yassine says

nice book
