

Introducing Quantum Theory A Graphic

Charting his meteoric rise in popularity, Christopher Kul-Want and Piero explore Zizek's timely analyses of today's global crises concerning ecology, mounting poverty, war, civil unrest and revolution. Covering topics from philosophy and ethics, politics and ideology, religion and art, to literature, cinema, corporate marketing, quantum physics and virtual reality, Introducing Slavoj Zizek deftly explains Zizek's virtuoso ability to transform apparently outworn ideologies – Communism, Marxism and psychoanalysis – into a new theory of freedom and enjoyment.

Can machines really think? Is the mind just a complicated computer program? This book focuses on the major issues behind one of the hardest scientific problems ever undertaken, from Alan Turing's influential groundwork to cutting-edge robotics and the new AI.

One of the biggest-selling titles in the Introducing series, J.P. McEvoy and Oscar Zarate's utterly brilliant Introducing Quantum Theory explores one of the most challenging, thrilling and mysterious areas of science. Taking the reader on a step-by-step tour, they tackle the puzzle of the wave-particle duality, Schrödinger's 'dead and alive cat', the EPR paradox and much more, explaining this notoriously difficult theory with patience, wit and clarity.It is now more than a century since Einstein's theories of Special and General Relativity began to revolutionise our view of the universe. Beginning near the speed of light and proceeding to explorations of space-time and curved spaces, Introducing Relativity plots a visually accessible course through the thought experiments that have given shape to contemporary physics. This is a superlative, fascinating graphic account of Einstein's strange world and how his legacy has been built upon since.If a butterfly flaps its wingsin Brazil, does it cause a tornado in Texas? Described as 'a beautifully succinct primer ... most recommended' by Time Out, Ziauddin Sardar and Ivona Abrams' Introducing Chaos attempts to answer bafflingly difficult questions like this. Explaining how chaos makes its presence felt in events from the fluctuation of the animal population to the ups and downs of the stock market, the book offers a uniquely approachable introduction to an astonishing and controversial theory.

If a butterfly flaps its wings in Brazil, does it cause a tornado in Texas? Chaos theory attempts to answer such baffling questions. The discovery of randomness in apparently predictable physical systems has evolved into a science that declares the universe to be far more unpredictable than we have ever imagined. Introducing Chaos explains how chaos makes its presence felt in events from the fluctuation of animal populations to the ups and downs of the stock market. It also examines the roots of chaos in modern maths and physics, and explores the relationship between chaos and complexity, the unifying theory which suggests that all complex systems evolve from a few simple rules. This is an accessible introduction to an astonishing and controversial theory.

An eccentric comic about the central mystery of quantum mechanics Totally Random is a comic for the serious reader who wants to really understand the central mystery of quantum mechanics--entanglement: what it is, what it means, and what you can do with it. Measure two entangled particles separately, and the outcomes are totally random. But compare the outcomes, and the particles seem as if they are instantaneously influencing each other at a distance—even if they are light-years apart. This, in a nutshell, is entanglement, and if it seems weird, then this book is for you. Totally Random is a graphic experiential narrative that unpacks the deep and insidious significance of the curious correlation between entangled particles to deliver a gut-feel glimpse of a world that is not what it seems. See for yourself how entanglement has led some of the greatest thinkers of our time to talk about crazy-sounding stuff like faster-than-light signaling, many worlds, and cats that are both dead and alive. Find out why remains one of science's most paradigm-shaking discoveries. Join Niels Bohr's therapy session with the likes of Einstein, Schrödinger, and other luminaries and let go of your commonsense notion of how the world works. Use your new understanding of entanglement to do the seemingly impossible, like beat the odds in the quantum casino, or quantum encrypt a message to evade the Sphinx's all-seeing eye. But look out, or you might just get teleported back to the beginning of the book! A fresh and subversive look at our quantum world with some seriously funny stuff, Totally Random delivers a real understanding of entanglement that will completely change the way you think about the nature of physical reality.

Introducing the Enlightenment

Why Nobody Understands Quantum Mechanics (A Serious Comic on Entanglement)

A Little Scientist's Guide to Atoms, Molecules, Matter, and More

Introducing Relativity

Introducing Infinity

When should you adopt an aggressive business strategy? How do we make decisions when we don ' t have all the information? What makes international environmental cooperation possible? Game theory is the study of how we make a decision when the outcome of our moves depends on the decisions of someone else. Economists Ivan and Tuvana Pastine explain why, in these situations, we sometimes cooperate, sometimes clash, and sometimes act in a way that seems completely random. Stylishly brought to life by award-winning cartoonist Tom Humberstone, Game Theory will help readers understand behaviour in everything from our social lives to business, global politics to evolutionary biology. It provides a thrilling new perspective on the world we live in.

Changes and additions to the new edition of this classic textbook include a new chapter on symmetries, new problems and examples, improved explanations, more numerical problems to be worked on a computer, new applications to solid state physics, and consolidated treatment of time-dependent potentials. Discover the mystery of science with Future Geniuses! Join Valentia, the little scientist, and her cat, Plank, as they learn why Plank can never seem to catch the laser he loves to play with. To do this, they must shrink down to the smallest size imaginable. Once they ' re tiny, they can better learn about quantum physics, discovering secrets that are invisible to those of us who are full sized! Valentia teaches Plank all about molecules, atoms, particles, photons, and matter., as well as solids, liquids, and gasses—and fusion and fission! Future Geniuses is a collection that will help families spend time reading and learning together. Through simple text and fun illustrations, author and scientist Carlos Pazos makes the subjects of quantum physics approachable and easy to understand for even the smallest scientists.

The clearest, simplest e-guide to quantum physics ever published. Discovering quantum physics has never been easier. Combining bold graphics with easy-to-understand text, Simply Quantum Physics is an essential introduction to the subject for those who are short on time but hungry for knowledge. It's a perfect beginner's e-guide to a strange and fascinating world that at times seems to conflict with common sense. Covering more than 80 key ideas from the uncertainty principle to quantum tunneling, it is divided into pared-back, single- or double-page entries that explain concepts simply and visually. Assuming no previous knowledge of physics, it demystifies some of the most groundbreaking ideas in modern science and introduces the work of some of the most famous physicists of the 20th and 21st centuries, including Albert Einstein, Neils Bohr, Erwin Schr ö dinger, and Richard Feynman. Whether you are studying physics at school or college, or simply want a jargon-free overview of the subject, this essential guide is packed with everything you need to understand the basics quickly and easily.

A comic-book introduction to economics from David Orrell, the author of Economyths: 11 Ways Economics Gets it Wrong. With illustrations from Borin Van Loon. Part of the internationally-recognised Introducing Graphic Guide series. Today, it seems, all things are measured by economists. The so-called 'dismal science' has never been more popular - or, given its failure to predict or prevent the recent financial crisis, more controversial. But what are the findings of economics? Is it really a science? And how can it help our lives? Introducing Economics traces the history of the subject from the ancient Greeks to the present day. Orrell and Van Loon bring to life the contributions of great economists - such as Adam Smith, Karl Marx, John Maynard Keynes and Milton Friedman - and delve into ideas from new areas such as ecological and complexity economics that are revolutionizing the field.

Introducing Logic

Relativity and Quantum Physics For Beginners

Quantum Mechanics

Introducing Slavoj Zizek

Quantum Physics for Smart Kids

Presents an introduction to the key concepts and figures associated with quantum theory.

Everything around us - trees, buildings, food, light, water, air and even ourselves - is composed of minute particles, smaller than a nanometre (a billionth of a metre). Quantum physics is the science of these particles and without it none of our electronic devices, from smartphones to computers and microwave ovens, would exist. But quantum physics also pushes us to the very boundaries of what we know about science, reality and the structure of the universe. The world of quantum physics is an amazing place, where quantum particles can do weird and wonderful things, acting totally unlike the objects we experience in day-to-day life. How can atoms exist in two places at once? And just how can a cat be dead and alive at the same time? Find out more with this entertaining illustrated guide to the fascinating, mysterious world of quantum physics.

Stephen Hawking is a world-famous physicist, but few people outside his field know what he has done. To the public he is a figure of tragic dimensions - a brilliant scientist and author of the phenomenal best-seller A Brief History of Time, and yet confined to a wheelchair, unable to speak or write. Hawking has mastered the two great theories of 20th-century physics - Einstein's General Theory of Relativity and Quantum Mechanics - and has made breathtaking discoveries about where they break down or overlap, such as on the edge of a Black Hole or at the Big Bang origin of the Universe. Here is the perfect introduction to Hawking's work by the author, who was helped by several long discussions with Hawking in researching the book.

"Introducing The Enlightenment" is the essential guide to the giants of the Enlightenment - Voltaire, Diderot, Adam Smith, Samuel Johnson, Immanuel Kant, Benjamin Franklin, and Thomas Jefferson. The Enlightenment of the 18th century was a crucial time in human history - a vast moral, scientific and political movement, the work of intellectuals across Europe and the New World, who began to free themselves from despotism, bigotry and superstition and tried to change the world. "Introducing The Enlightenment" is a clear and accessible introduction to the leading thinkers of the age, the men and women who believed that rational endeavour could reveal the secrets of the universe.

Monoidal category theory serves as a powerful framework for describing logical aspects of quantum theory, giving an abstract language for parallel and sequential composition, and a conceptual way to understand many high-level quantum phenomena. This text lays the foundation for this categorical quantum mechanics, with an emphasis on the graphical calculus which makes computation intuitive. Biproducts and dual objects are introduced and used to model superposition and entanglement, with quantum teleportation studied abstractly using these structures. Monoids, Frobenius structures and Hopf algebras are described, and it is shown how they can be used to model classical information and complementary observables. The CP construction, a categorical tool to describe probabilistic quantum systems, is also investigated. The last chapter introduces higher categories, surface diagrams and 2-Hilbert spaces, and shows how the language of duality in monoidal 2-categories can be used to reason about quantum protocols, including quantum teleportation and dense coding. Prior knowledge of linear algebra, quantum information or category theory would give an ideal background for studying this text, but it is not assumed, with essential background material given in a self-contained introductory chapter. Throughout the text links with many other areas are highlighted, such as representation theory, topology, quantum algebra, knot theory, and probability theory, and nonstandard models are presented, such as sets and relations. All results are stated rigorously, and full proofs are given as far as possible, making this book an invaluable reference for modern techniques in quantum logic, with much of the material not available in any other textbook.

Great Theories of Science

Introducing Stephen Hawking

Introduction to Quantum Information Science

Quantum Enigma

Introducing Quantum Theory

What is time? The 5th-century philosopher St Augustine famously said that he knew what time was, so long as no one asked him. Is time a fourth dimension similar to space or does it flow in some sense? And if it flows, does it make sense to say how fast it exists? Is time travel possible? Why does time seem to pass in only one direction? These questions and others are among the deepest and most subtle that one can ask, but Introducing Time presents them - many for the first time - in an easily accessible, lucid manner, wittily illustrated by Ralph Edney.

Quantum Theory is the most revolutionary discovery in physics since Newton. This book gives a lucid, exciting, and accessible account of the surprising and counterintuitive ideas that shape our understanding of the sub-atomic world. It does not disguise the interpretation that still remain unsettled 75 years after the initial discoveries. The main text makes no use of equations, but there is a Mathematical Appendix for those desiring stronger fare. Uncertainty, probabilistic physics, complementarity, the problem of measurement, and decoherence are among the many topics discussed. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to keep up with the latest thinking on a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

This book aims to provide an intuitive understanding of wave mechanics by using computer generated illustrations to present the time evolution and parameter dependence of wave functions for one and three-dimensional systems. The situations discussed range from a simple particle in a box through resonant scattering in one dimension to the hydrogen atom and Regge classification of resonant scattering. The text helps students to establish the relation between quantum mechanics and classical physics.

What do scientists actually do? Is science "value-free"? How has science evolved through history? Where is science leading us? "Introducing Philosophy of Science" is a clear and incisively illustrated map of the big questions underpinning science. It is essential reading for students, the general public, and even scientists themselves.

Since the dawn of humanity, men have attempted to divine the nature of the heavens. The first astronomers mapped the movement of the seasons and used the positions of the constellations for augurs and astrology. Today, the search goes ever deeper in to reality and life itself. In this accessible overview, astrophysicist J.P. McEvoy tells the story of how our knowledge of the cosmos has developed. He puts in context many of the greatest discoveries of all time and many of the dominant personalities: Aristotle, Isaac Newton, and as we approach the modern era, Einstein, Eddington, and Hawking.

The Picture Book of Quantum Mechanics

Introducing Economics

An Introduction

Categories for Quantum Theory

A Brief History of the Universe

From the medicine we take, the treatments we receive, the aptitude and psychometric tests given by employers, the cars we drive, the clothes we wear to even the beer we drink, statistics have given shape to the world we inhabit. For the media, statistics are routinely 'damning', 'horrifying', or, occasionally, 'encouraging'. Yet, for all their ubiquity, most of us really don't know what to make of statistics. Exploring the history, mathematics, philosophy and practical use of statistics, Eileen Magnello – accompanied by Bill Mayblin's intelligent graphic illustration – traces the rise of statistics from the ancient Babylonians, Egyptians and Chinese, to the censuses of Romans and the Greeks, and the modern emergence of the term itself in Europe. She explores the 'vital statistics' of, in particular, William Farr, and the mathematical statistics of Karl Pearson and R.A. Fisher. She even tells how knowledge of statistics can prolong one's life, as it did for evolutionary biologist Stephen Jay Gould, given eight months to live after a cancer diagnoses in 1982 – and he lived until 2002. This title offers an enjoyable, surprise-filled tour through a subject that is both fascinating and crucial to understanding our world.

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.

'An ideal introduction [to Stephen Hawking]' – Independent 'Astonishingly comprehensive – clearer than Hawking himself' – Focus Stephen Hawking was a world-famous physicist with a cameo in The Simpsons on his CV, but outside of his academic field his work was little understood. To the public he was a tragic figure – a brilliant scientist and author of the 9 million-copy-selling A Brief History of Time, and yet spent the majority of his life confined to a wheelchair and almost completely paralysed. Hawking's major contribution to science was to integrate the two great theories of 20th-century physics: Einstein's General Theory of Relativity and Quantum Mechanics. J.P. McEvoy and Oscar Zarate's brilliant graphic guide explores Hawking's life, the evolution of his work from his days as a student, and his breathtaking discoveries about where these fundamental laws break down or overlap, such as on the edge of a Black Hole or at the origin of the Universe itself.

This bestselling textbook teaches students how to do quantum mechanics and provides an insightful discussion of what it actually means.

This title is now available in a new format. Refer to Time: A Graphic Guide 9781848311206.

Introducing Artificial Intelligence

Introducing Graphic Guide Box Set – Great Theories of Science (EXPORT EDITION)

Introducing Critical Theory

Introducing Mathematics

My First Book of Quantum Physics

This book provides a route through a jungle of competing theories. It puts into context recent developments by situating them within the longer-term tradition of critical analysis -- back to the rise of Marxism.

As we humans have expanded our horizons to see things vastly smaller, faster, larger, and farther than ever before, we have been forced to confront preconceptions born of the human experience and create wholly new ways of looking at the world around us. The theories of relativity and quantum physics were developed out of this need and have provided us with phenomenal, mind-twisting insights into the strange and exciting reality show of our universe. Relativity and Quantum Physics For Beginners is an entertaining and accessible introduction to the bizarre concepts that fueled the scientific revolution of the 20th century and led to amazing advances in our understanding of the universe.

Quantum theory confronts us with bizarre paradoxes which contradict the logic of classical physics. At the subatomic level, one particle seems to know what the others are doing, and according to Heisenberg's "uncertainty principle", there is a limit on how accurately nature can be observed. And yet the theory is amazingly accurate and widely applied, explaining all of chemistry and most of physics. Introducing Quantum Theory takes us on a step-by-step tour with the key figures, including Planck, Einstein, Bohr, Heisenberg and Schrodinger. Each contributed at least one crucial concept to the theory. The puzzle of the wave-particle duality is here, along with descriptions of the two questions raised against Bohr's "Copenhagen Interpretation" - the famous "dead and alive cat" and the EPR paradox. Both remain unresolved.

Infinity is a profoundly counter-intuitive and brain-twisting subject that has inspired some great thinkers – and provoked and shocked others. The ancient Greeks were so horrified by the implications of an endless number that they drowned the man who gave away the secret. And a German mathematician was driven mad by the repercussions of his discovery of transfinite numbers. Brian Clegg and Oliver Pugh’s brilliant graphic tour of infinity features a cast of characters ranging from Archimedes and Pythagoras to al-Khwarizmi, Fibonacci, Galileo, Newton, Leibniz, Cantor, Venn, Gödel and Mandelbrot, and shows how infinity has challenged the finest minds of science and mathematics. Prepare to enter a world of paradox.

In learning quantum theory, intuitions developed for the classical world fail, and the equations to be solved are sufficiently complex that they require a computer except for the simplest situations. This book represents an attempt to jump the hurdle to an intuitive understanding of wave mechanics by using illustrations to present the time evolution and parameter dependence of wave functions in a wide variety of situations. Most of the illustrations are computer-generated solutions of the Schrödinger equation for one- and three-dimensional systems, with the situations discussed ranging from the simple particle in a box through resonant scattering in one dimension to the hydrogen atom and Regge classification of resonant scattering. Thoroughly revised and expanded to include a discussion of spin and magnetic resonance.

An Introduction to Quantum Physics

Introducing Philosophy of Science

FREE Introducing Graphic Guide Sampler

Introducing Particle Physics

Introducing Game Theory

Most of us are unaware of how much we depend on quantum mechanics on a day-to-day basis. Using illustrations and examples from science fiction pulp magazines and comic books, The Amazing Story of Quantum Mechanics explains the fundamental principles of quantum mechanics that underlie the world we live in. Watch a Video

Part of the new Ladybird Expert series, Quantum Mechanics is a clear, simple and entertaining introduction to the weird, mind-bending world of the very, very small. Written by physicist and broadcaster Professor Jim Al-Khalili, it explores all the key players, breakthroughs, controversies and unanswered questions of the quantum world. You'll discover how the sun shines, why light is both a wave and a particle, the certainty of the Uncertainty Principle, Schrodinger's Cat, Einstein's spooky action, how to build a quantum computer, and why quantum mechanics drives even its experts completely crazy. 'Jim Al-Khalili has done an admirable job of condensing the ideas of quantum physics from Max Planck to the possibilities of quantum computers into brisk, straightforward English' The Times Written by the leading lights and most outstanding communicators in their fields, the Ladybird Expert books provide clear, accessible and authoritative introductions to subjects drawn from science, history and culture. Other books currently available in the Ladybird Expert series include: · Climate Change · Evolution For an

adult readership, the Ladybird Expert series is produced in the same iconic small format pioneered by the original Ladybirds. Each beautifully illustrated book features the first new illustrations produced in the original Ladybird style for nearly forty years.

Introducing Graphic Guides is the bestselling series which explores big ideas from Quantum Theory to Psychoanalysis using concise, authoritative text and graphic novel-style illustrations. For the very first time 28 titles are now available in ebook format for all e-reading devices. This free ebook sampler contains extracts from six books: • Introducing Psychology asks what exactly psychology is, precisely, where has it come from and the extent to which it can be considered scientific. • Introducing Quantum Theory explores bizarre paradoxes which contradict the logic of classical physics in the work of Planck, Einstein, Bohr, Heisenberg, Schrodinger and others • Introducing Islam recounts the history of the religion from the 6th century to its status as a global culture and political force today. • Introducing Statistics book traces the rise of statistics from the ancient Babylonians, Egyptians and Chinese, to the censuses of Romans and the Greeks, and the modern emergence of the term itself in Europe. • Introducing Capitalism tells the story of the remarkable and often ruthless rise of capitalist politics and economics, which have evolved through strife and struggle as much as innovation and enterprise • Introducing Feminism explores women's conscious struggle to resist discrimination and sexist oppression from the 17th century to the present day. Find out more about the series at introducingbooks.com/ebooks

This book offers a concise and up-to-date introduction to the popular field of quantum information. It has originated in a series of invited lecture courses at various universities in different countries. This is reflected in its informal style of exposition and presentation of key results in the subject. In addition to treating quantum communication, entanglement and algorithms in great depth, this book also addresses a number of interesting miscellaneous topics, such as Maxwell's demon, Landauer's erasure, the Bekenstein bound, and Caratheodory's treatment of the Second Law of thermodynamics. All mathematical derivations are based on clear physical pictures which make even the most involved results – such as the Holevo bound – look comprehensible and transparent. The book is ideal as a first introduction to the subject, but may also appeal to the specialist due to its unique presentation.

Introducing Quantum TheoryTotem Books

Introducing Chaos

Totally Random

Introduction to Quantum Mechanics

Physics Encounters Consciousness

Quantum Theory: A Very Short Introduction

Logic is the backbone of Western civilization, holding together its systems of philosophy, science and law. Yet despite logic's widely acknowledged importance, it remains an unbroken seal for many, due to its heavy use of jargon and mathematical symbolism. This book follows the historical development of logic, explains the symbols and methods involved and explores the philosophical issues surrounding the topic in an easy-to-follow and friendly manner. It will take you through the influence of logic on scientific method and the various sciences from physics to psychology, and will show you why computers and digital technology are just another case of logic in action.

One of the biggest-selling titles in the Introducing series, J.P. McEvoy and Oscar Zarate's utterly brilliant Introducing Quantum Theory explores one of the most challenging, thrilling and mysterious areas of science. Taking the reader on a step-by-step tour, they tackle the puzzle of the wave-particle duality, Schrödinger's 'dead and alive cat', the EPR paradox and much more, explaining this notoriously difficult theory with patience, wit and clarity. It is now more than a century since Einstein's theories of Special and General Relativity began to revolutionise our view of the universe. Beginning near the speed of light and proceeding to explorations of space-time and curved spaces, Introducing Relativity plots a visually accessible course through the thought experiments that have given shape to contemporary physics. This is a superlative, fascinating graphic account of Einstein's strange world and how his legacy has been built upon since. If a butterfly flaps its wings in Brazil, does it cause a tornado in Texas? Described as 'a beautifully succinct primer ... most recommended' by Time Out, Ziauddin Sardar and Iwona Abrams' Introducing Chaos attempts to answer bafflingly difficult questions like this. Explaining how chaos makes its presence felt in events from the fluctuation of the animal population to the ups and downs of the stock market, the book offers a uniquely approachable introduction to an astonishing and controversial theory.

A superlative, fascinating graphic account of Albert Einstein's strange world and how his legacy has been built upon since. It is now more than a century since Einstein's theories of Special and General Relativity began to revolutionise our view of the universe. Beginning near the speed of light and proceeding to explorations of space-time and curved spaces, Introducing Relativity plots a visually accessible course through the thought experiments that have given shape to contemporary physics. Scientists from Isaac Newton to Stephen Hawking add their unique contributions to this story, as we encounter Einstein's astounding vision of gravity as the curvature of space-time and arrive at the breathtakingly beautiful field equations. Einstein's legacy is reviewed in the most advanced frontiers of physics today - black holes, gravitational waves, the accelerating universe and string theory.

In trying to understand the atom, physicists built quantum mechanics, the most successful theory in science and the basis of one-third of our economy. They found, to their embarrassment, that with their theory, physics encounters consciousness. Authors Bruce Rosenblum and Fred Kuttner explain all this in non-technical terms with help from some fanciful stories and anecdotes about the theory's developers. They present the quantum mystery honestly, emphasizing what is and what is not speculation. Quantum Enigma's description of the experimental quantum facts, and the quantum theory explaining them, is undisputed. Interpreting what it all means, however, is heatedly controversial. But every interpretation of quantum physics involves consciousness. Rosenblum and Kuttner therefore turn to exploring consciousness itself– and encounter quantum mechanics. Free will and anthropic principles become crucial issues, and the connection of consciousness with the cosmos suggested by some leading quantum cosmologists is mind-blowing. Readers are brought to a boundary where the particular expertise of physicists is no longer the only sure guide. They will find, instead, the facts and hints provided by quantum mechanics and the ability to speculate for themselves. In the few decades since the Bell's theorem experiments established the existence of entanglement (Einstein's "spooky action"), interest in the foundations, and the mysteries, of quantum mechanics has accelerated. In recent years, physicists, philosophers, computer engineers, and even biologists have expanded our realization of the significance of quantum phenomena. This second edition includes such advances. The authors have also drawn on many responses from readers and instructors to improve the clarity of the book's explanations.

Provides comprehensive coverage of all the fundamentals of quantum physics. Full mathematical treatments are given. Uses examples from different areas of physics to demonstrate how theories work in practice. Text derived from lectures delivered at Massachusetts Institute of Technology.

Introducing Time

A Graphic Guide

Introducing Statistics

The Amazing Story of Quantum Mechanics

A Math-Free Exploration of the Science That Made Our World

What is mathematics, and why is it such a mystery to so many people? Mathematics is the greatest creation of human intelligence. It affects us all. We depend on it in our daily lives, and yet many of the tools of mathematics, such as geometry, algebra and trigonometry, are descended from ancient or non-Western civilizations. Introducing Mathematics traces the story of mathematics from the ancient world to modern times, describing the great discoveries and providing an accessible introduction to such topics as number-systems, geometry and algebra, the calculus, the theory of the infinite, statistical reasoning and chaos theory. It shows how the history of mathematics has seen progress and paradox go hand in hand - and how this is still happening today.

Quantum Mechanics (A Ladybird Expert Book)

Simply Quantum Physics

From Ancient Babylon to the Big Bang