

On A Beam Of Light A Story Of Albert Einstein

Since publication of the first edition of this text in 1998, there have been several new, important developments in the theory of beam wave propagation through a random medium, which have been incorporated into this second edition. Also new to this edition are models for the scintillation index under moderate-to-strong irradiance fluctuations; models for aperture averaging based on ABCD ray matrices; beam wander and its effects on scintillation; theory of partial coherence of the source; models of rough targets for lidar applications; phase fluctuations; analysis of other beam shapes; plus expanded analysis of free-space optical communication systems and imaging systems.

From science fiction death rays to supermarket scanners, lasers have become deeply embedded in our daily lives and our culture. But in recent decades the standard laser beam has evolved into an array of more specialized light beams with a variety of strange and counterintuitive properties. Some of them have the ability to reconstruct themselves after disruption by an obstacle, while others can bend in complicated shapes or rotate like a corkscrew. These unusual optical effects open new and exciting possibilities for science and technology. For example, they make possible microscopic tractor beams that pull objects toward the source of the light, and they allow the trapping and manipulation of individual molecules to construct specially-tailored nanostructures for engineering or medical use. It has even been found that beams of light can produce lines of darkness that can be tied in knots. This book is an introductory survey of these specialized light beams and their scientific applications, at a level suitable for undergraduates with a basic knowledge of optics and quantum mechanics. It provides a unified treatment of the subject, collecting together in textbook form for the first time many topics currently found only in the original research literature.

Psychiatrist Gene Brewer doesn't have a diagnosis for the mysterious new patient who calls himself "prot" (rhymes with goat). But this strange and likeable man cannot be--as he claims--from the planet K-PAX. Or can he? Prot knows facts about space that are confounding the experts. He is soon revealing Dr. Brewer's own deepest pains and most sublime longings. And his tales of K-PAX have other patients competing to go along with him when he heads "home". Now the doctor is racing the clock to find prot's true identity before he loses a man whose "madness" might just save them all. . . . Published in a dozens countries with movie rights sold to the producer of Field of Dreams, K-PAX has touched the hearts and expanded the horizons of readers around the world. It promises to join Robert Heinlein's classic Stranger in a Strange Land as a moving, thought-provoking masterpiece of modern-day fiction.

The true story of eighteenth-century mathematician Sophie Germain, who solved the unsolvable to achieve her dream. When her parents took away her candles to keep their young daughter from studying math...nothing stopped Sophie. When a professor discovered that the homework sent to him under a male pen name came from a woman...nothing stopped Sophie. And when she tackled a math problem that male scholars said would be impossible to solve...still, nothing stopped Sophie. For six years Sophie Germain used her love of math and her undeniable determination to test equations that would predict patterns of vibrations. She eventually became the first woman to win a grand prize from France's prestigious Academy of Sciences for her formula, which laid the groundwork for much of modern architecture (and can be seen in the book's illustrations). Award-winning author Cheryl Bardoe's inspiring and poetic text is brought to life by acclaimed artist Barbara McClintock's intricate pen-and-ink, watercolor, and collage illustrations in this true story about a woman who let nothing stop her.

An inspiring and kid-accessible biography of one of the world's most famous poets. Emily Dickinson, who famously wrote "Hope is the thing with feathers that perches in the soul," is brought to life in this moving story. In a small New England town lives Emily Dickinson, a girl in love with small things—a flower petal, a bird, a ray of light, a word. In those small things, her brilliant imagination can see the wide world—and in her words, she takes wing. From celebrated children's author Jennifer Berne comes a lyrical and lovely account of the life of Emily Dickinson: her courage, her faith, and her gift to the world. With Dickinson's own inimitable poetry woven throughout, this lyrical biography is not just a tale of prodigious talent, but also of the power we have to transform ourselves and to reach one another when we speak from the soul. • Fantastic educational opportunity to share Emily Dickinson's story and poetry with young readers • An inspirational real-life story that will appeal to children and adults alike. • Jennifer Berne is the author of critically acclaimed children's biographies of Albert Einstein and Jacques Cousteau. Fans who enjoyed Emily Writes: Emily Dickinson and her Poetic Beginnings, Emily and Carlo, and Uncle Emily will love On Wings of Words. • Books for kids ages 5–8 • Poetry for children • Biographies for children Jennifer Berne is the award-winning author of the biographies Manfish: A Story of Jacques Cousteau and On a Beam of Light: A Story of Albert Einstein. She lives in Copake, New York. Becca Stadlander is the illustrator of many children's and young adult publications, including Sleep Tight Farm. She was born and raised in Covington, Kentucky.

"It's perfect for bedtime reading, and one I'm sure kids will ask to have repeated often - and maybe even get inspired by." - iPadinsight Albert Einstein famously put emphasis on the power of imagination and so does Riding on a Beam of Light. When Einstein won the Nobel Prize, he credited his own boyhood idea of riding on a beam of light with the spark that led him to his theory of special relativity. In this intricately illustrated storybook, lights-out turns into learning as we see the world from young Albert Einstein's point of view, with a sense of fascination and adventure reminiscent of Harold from Harold and the Purple Crayon and Max from Where the Wild Things Are. At it's heart is a story about imagination and dreaming, with gorgeous illustrations that capture our grown-up hearts and our children's curiosity. Can young minds change the world? Einstein proved it and now Riding on a Beam of Light brings that message to kids in terms they can celebrate on their scooter. So, turn the light on and off, discuss the speed of light, and have your child imagining what young Albert Einstein imagined as a child. This is a book parents can begin enjoying before the kids understand language (or physics). "If you want your children to be intelligent, read them fairy tales. If you want them to be more intelligent, read them more fairy tales." - Albert Einstein

A quirky, funny, and accessible blend of science and art that delves into the heart of Einstein's theory of relativity It was a link to his 1905 paper--an early attempt at explaining his revolutionary ideas on space, time, and matter--that drew Tanya Bub into Albert Einstein's imaginative vision of the world. What particularly struck her was how Einstein interwove words and math to create clear visuals illustrating his theories. As an artist, she naturally started doodling as she worked her way through his concepts, creating drawings that intuitively demonstrated Einstein's core principles. In Reimagining Time Tanya Bub teams up with her father, the distinguished physicist Jeffrey Bub, to create a quirky and accessible take on one of science's most revolutionary discoveries. Blending original art and text, they guide readers through Einstein's theory of special relativity to expose truths about our universe: time is relative, lengths get shorter with motion, energy and mass are interchangeable, and the Universe has a speed limit. University Physics is designed for the two- or three-semester calculus-based physics course. The text has been developed to meet the scope and sequence of most university physics courses and provides a foundation for a career in mathematics, science, or engineering. The book provides an important opportunity for students to learn the core concepts of physics and understand how those concepts apply to their lives and to the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Coverage and Scope Our University Physics textbook adheres to the scope and sequence of most two- and three-semester physics courses nationwide. We have worked to make physics interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. With this objective in mind, the content of this textbook has been developed and arranged to provide a logical progression from fundamental to more advanced

concepts, building upon what students have already learned and emphasizing connections between topics and between theory and applications. The goal of each section is to enable students not just to recognize concepts, but to work with them in ways that will be useful in later courses and future careers. The organization and pedagogical features were developed and vetted with feedback from science educators dedicated to the project. VOLUME III Unit 1: Optics Chapter 1: The Nature of Light Chapter 2: Geometric Optics and Image Formation Chapter 3: Interference Chapter 4: Diffraction Unit 2: Modern Physics Chapter 5: Relativity Chapter 6: Photons and Matter Waves Chapter 7: Quantum Mechanics Chapter 8: Atomic Structure Chapter 9: Condensed Matter Physics Chapter 10: Nuclear Physics Chapter 11: Particle Physics and Cosmology

A boy rides a bicycle down a dusty road. But in his mind, he envisions himself traveling at a speed beyond imagining, on a beam of light. This brilliant mind will one day offer up some of the most revolutionary ideas ever conceived. From a boy endlessly fascinated by the wonders around him, Albert Einstein ultimately grows into a man of genius recognized the world over for profoundly illuminating our understanding of the universe. Jennifer Berne and Vladimir Radunsky invite the reader to travel along with Einstein on a journey full of curiosity, laughter, and scientific discovery. Parents and children alike will appreciate this moving story of the powerful difference imagination can make in any life. When he was born, Albert was a peculiar, fat baby with an unusually big and misshaped head. When he was older, he hit his sister, bothered his teachers, and didn't have many friends. But in the midst of all of this, Albert was fascinated with solving puzzles and fixing scientific problems. The ideas Albert Einstein came up with during his childhood as an odd boy out were destined to change the way we know and understand the world around us . . .

A colorfully illustrated biography of a little French boy who would become an internationally known oceanographer and champion of the seas. Once upon a time in France, a baby was born under the summer sun. His parents named him Jacques. As he grew, Jacques fell in love with the sea. He dreamed of breathing beneath the waves and swimming as gracefully as a fish. In fact, he longed to become a manfish. Jacques Cousteau grew up to become a champion of the seas and one of the best-known oceanographers in the world. In this lovely biography, poetic text and gorgeous paintings come together to create a portrait of Cousteau that is as magical as it is inspiring. Praise for Manfish "Berne offers a luminous picture-book biography about Jacques Cousteau . . . Puybaret's smooth-looking acrylic paintings extend the words' elegant simplicity and beautifully convey the sense of infinite, underwater space." —Booklist (starred review) "This moving tribute to the great nautical observer and filmmaker is shot through with an authentically childlike sense of adventure and the thrill of discovery . . . This poetic profile of a doer and a dreamer is certain to inspire fresh interest in discovering, and in caring for, our world's wonders." —Kirkus Reviews (starred review) "A new generation of children is introduced to the pioneering oceanographer and filmmaker. Beginning with Cousteau's childhood in France where he marveled at the sea and dreamed of breathing underwater, Berne reveals the unique mix of curiosity, ingenuity, and passion that drove Cousteau to make underwater exploration possible." —School Library Journal

In the bestselling tradition of *The Five People You Meet in Heaven* and *Humans of New York* comes a collection of authentic, emotional, and inspiring stories about life's most important moments, as curated by the editors at Love What Matters. "90% of the reads bring me to tears. I just can't believe the love this world truly has when all we see is hate. This is so uplifting." —Shelsea Where do you go when you want to feel inspired? When you want to forget about the divisiveness and the anger? For over five million people, that place is Love What Matters, a digital platform dedicated to finding and sharing the daily moments of kindness, compassion, and love that so often go overlooked. This curated collection of powerful stories features first person accounts and photographs that perfectly capture each moment: A husband learning he's about to be a dad. A new mom embracing her body. A cashier inadvertently teaching a young girl a lesson about patience. A bagel from a stranger that saved a homeless man's life. From long overdue adoptions to military heroes returning home; from a fireman's touching 9/11 tribute to what an old dinner plate found at a bake sale can teach us all about life—these are the moments that matter. They are genuine. Authentic. Raw. And they are perfect in their imperfection—just like all of us. You will no doubt experience goosebumps and tears, but this mosaic of life's moments will leave you with something even more profound: a reminder that, in the end, love always wins. "This really is the best page on Facebook. It renews your love of humanity. There are still good people. We need more reports of acts of kindness." —Johnny

The sole survivor on a desperate, last-chance mission to save both humanity and the earth, Ryland Grace is hurtled into the depths of space when he must conquer an extinction-level threat to our species.

Albert Einstein lived a very interesting life. When he was young, his teacher said that he would never be anything great because he was stupid. We all know how wrong his teacher was because Einstein grew to formulate the most complex of all theories. Einstein's story would tell us to never give up. Read and learn from his biography today!

A photographic exploration into the beauty and magic of light from the creator of the bestselling *A Drop of Water* and the *Can You See What I See?* series.

This out-of-this-world kit for sci-fi lovers is loaded with special effects! It includes: -3-inch diameter spaceship, equipped with a hinged cockpit dome from which a curious alien peers, and featuring multiple light and sound effects: By opening the cockpit dome and pressing the alien's head, sound of spaceship engine plays, followed by eerie pre-abduction music. Six blue lights around the spaceship flash in rotation. Additionally, two bright LED lights beneath the ship glow, casting a beam of light in search of a specimen to abduct. When the spaceship is hovered in close proximity to the cow, a magnetically powered "abduction" occurs which simultaneously prompts new light and sound effects. Lights beneath the ship flash and music changes to a pulsating sound with intermittent cow mooing. When cow is abducted and alien head is pressed again, sound of the spaceship flying away plays, concluding your invasion and shutting off the spaceship. -Miniature cow and faux grass mound -Transparent display stand to hover spaceship over

cow when not invading the countryside -32-page book, *The Cow Abduction Chronicles*, featuring full-color illustrations

Orbital Angular Momentum States of Light provides an in-depth introduction to modelling of long-range propagation of orbital angular momentum (OAM) modes as well as more general structured light beams through atmospheric turbulence. Starting with angular spectrum method for diffraction and description of structured light states, the book discusses the technical details related to wave propagation through atmospheric turbulence. The review of historical as well as more recent ideas in this topical area, along with computer simulation codes, makes this book a useful reference to researchers and optical engineers interested in developing and testing of free-space applications of OAM states of light. ?Key Features Includes modelling of long-range propagation using the angular spectrum approach Presents basic description of turbulence propagation using single or multi-phase screen models Provides information on advanced topics such as propagation polarization of singularities through turbulence Provides discussion on the spiral phase quadrature transform and its application for robust beam engineering Includes accompanying open-source software code snippets for modelling the propagation of scalar and vector beams through turbulence

As part of the Physics 2010 decadal survey project, the Department of Energy and the National Science Foundation requested that the National Research Council assess the opportunities, over roughly the next decade, in atomic, molecular, and optical (AMO) science and technology. In particular, the National Research Council was asked to cover the state of AMO science, emphasizing recent accomplishments and identifying new and compelling scientific questions. *Controlling the Quantum World*, discusses both the roles and challenges for AMO science in instrumentation; scientific research near absolute zero; development of extremely intense x-ray and laser sources; exploration and control of molecular processes; photonics at the nanoscale level; and development of quantum information technology. This book also offers an assessment of and recommendations about critical issues concerning maintaining U.S. leadership in AMO science and technology.

The CoolKids is the story of the last week of high school for instantly iconic idealist Bartholomew Moriarty. Bart is no ordinary teenager; he's that one kid in every class, whose superior worldview and punk rock shoot-from-the-hip style make him a thorn in everyone's side. He's the product of a scene now 30 years in the making, leaning on words like "integrity" and "credibility" to bridge any gap in logic, and he advocates with fire and brimstone from one of the most extreme teenage points of view: Hardcore Straight Edge Vegan. The suburban tranquility that surrounds him is in marked contrast to his music and its militant call to rebellion as well as his obsession with the brands that define his identity and the superiority that adherence to his own strict code creates. Bart is caught up in the struggle of the ages: metalheads against jocks, jocks against crombies, crombies against muggles, muggles against metalheads, and everyone against that fringe group of Hardcore Straight Edge Vegans. It's a heated battle, the coveted title of *The CoolKids* has been at stake for many years, but that is all coming to an end next week, that crown being laid to rest at a ceremony called graduation. As leader of his cutting edge clique, his gang's idealism starts to change as the forces of graduation push them to make choices about their future; rumors of friends going off to college and getting jobs push Bart to a state of paranoia as his social movement seems to be coming to an abrupt end. If he can stop graduation, convince his friends not to go to college, or prove their superiority to the other cliques and take his movement to a wider audience, just maybe he'll be able to save everything he's fought so hard to establish.

"You either love Andrea Camilleri or you haven't read him yet. Each novel in this wholly addictive, entirely magical series, set in Sicily and starring a detective unlike any other in crime fiction, blasts the brain like a shot of pure oxygen — altogether transporting. Long live Camilleri, and long live Montalbano." A.J. Finn, #1 New York Times bestselling author of *The Woman in the Window* "In Sicily, where people do things as they please, Inspector Salvo Montalbano is a bona fide folk hero."—The New York Times Book Review When Inspector Montalbano falls under the charms of beautiful gallery owner Marian, his longtime relationship with Livia comes under threat. Meanwhile, he is also troubled by a strange dream as three crimes demand his attention: the assault and robbery of a wealthy merchant's young wife, shady art deals, and a search for arms traffickers that leads him deep into the countryside, where the investigation takes a tragic turn.

Genius demystified, the Dummies way! In 1905, Albert Einstein revolutionized modern physics with his theory of relativity. He went on to become a twentieth-century icon—a man whose name and face are synonymous with "genius." Now, at last, ordinary readers can explore Einstein's life and work in this new *For Dummies* guide. Physicist Carlos Calle chronicles Einstein's career and explains his work—including the theories of special and general relativity—in language that anyone can understand. He shows how Einstein's discoveries affected everything from the development of the atom bomb to the theory of quantum mechanics. He sheds light on Einstein's personal life and beliefs, including his views on religion and politics. And he shows how Einstein's work continues to affect our world today, from nuclear power to space travel to artificial intelligence.

While backpacking in the desert, thirteen-year-old Mark falls into a tube of blue light and is transported into a more primitive world, where he must use his knowledge and skills to survive. Travel along with Einstein on a journey full of curiosity, laughter, and scientific discovery. Parents and children alike will appreciate this moving story of the powerful difference imagination can make in any life.

Albert Einstein leads readers through a graphic novel interpretation of the theories of space and time and the science behind such topics as climate change, evolution, black holes, and quantum mechanics.

This text blends traditional introductory physics topics with an emphasis on human applications and an expanded coverage of modern physics topics, such as the existence of atoms and the conversion of mass into energy. Topical coverage is combined with the author's lively, conversational writing style, innovative features, the direct and clear manner of presentation, and the emphasis on problem solving and practical applications.

For Einstein, 1905 was a remarkable year. It was also a miraculous year for the history and future of science. In six short months, he published five papers that would transform our understanding of nature. This unparalleled period is the subject of Rigden's book, which deftly explains what distinguishes 1905 from all other years in the annals of science, and elevates Einstein above all other scientists of the twentieth century.

Most people think of mathematicians as solitary, working away in isolation. And, it's true, many of them do. But Paul Erdos never followed the usual path. At the age of four, he could ask you when you were born and then calculate the number of seconds you had been alive in his head. But he didn't learn to butter his own bread until he turned twenty. Instead, he traveled around the world, from one mathematician to the next, collaborating on an astonishing number of publications. With a simple, lyrical text and richly layered illustrations, this is a beautiful introduction to the world of math and a fascinating look at the unique character traits that made "Uncle Paul" a great man. *The Boy Who Loved Math* by Deborah Heiligman is a Kirkus Reviews Best Book of 2013 and a New York Times Book Review Notable Children's Book of 2013.

Follows the life of the famous physicist, from his early ideas to his groundbreaking theories.

Mathematical Modelling sets out the general principles of mathematical modelling as a means comprehending the world. Within the book, the problems of physics, engineering, chemistry, biology, medicine, economics, ecology, sociology, psychology, political science, etc. are all considered through this uniform lens. The author describes different classes of models, including lumped and distributed parameter systems, deterministic and stochastic models, continuous and discrete models, static and dynamical systems, and more. From a mathematical point of view, the considered models can be understood as equations and systems of equations of different nature and variational principles. In addition to this, mathematical features of mathematical models, applied control and optimization problems based on mathematical models, and identification of mathematical models are also presented. Features Each chapter includes four levels: a lecture (main chapter material), an appendix (additional information), notes (explanations, technical calculations, literature review) and tasks for independent work; this is suitable for undergraduates and graduate students and does not require the reader to take any prerequisite course, but may be useful for researchers as well. Described mathematical models are grouped both by areas of application and by the types of obtained mathematical problems, which contributes to both the breadth of coverage of the material and the depth of its understanding. Can be used as the main textbook on a mathematical modelling course, and is also recommended for special courses on mathematical models for physics, chemistry, biology, economics, etc.

On a Beam of Light: A Story of Albert Einstein Chronicle Books

Although a young starling chooses to read books when his cousins are learning to fly, the knowledge he acquires comes in handy when a hurricane threatens the flock's migration.

Teachers of Future theoretical physicist and Nobel Prize recipient Albert Einstein thought he would amount to nothing. Everybody is a genius, he said. But if you judge a fish by its ability to climb a tree, it will live its life believing that it is stupid. Einstein noted that creativity and deep-thinking were humans' most powerful tools. He is responsible for the general theory of relativity and so much more. This title includes primary sources, sidebars, prompts and activities, charts and graphs, and much more. Aligned to Common Core Standards and correlated to state standards. Core Library is an imprint of Abdo Publishing Company.

Matter: Physical Science for Kids from the *Picture Book Science* series gets kids excited about science! What's the matter? Everything is matter! Everything you can touch and hold is made up of matter—including you, your dog, and this book! Matter is stuff that you can weigh and that takes up space, which means pretty much everything in the world is made of matter. In *Matter: Physical Science for Kids*, kids ages 5 to 8 explore the definition of matter and the different states of matter, plus the stuff in our world that isn't matter, such as sound and light! In this nonfiction picture book, children are introduced to physical science through detailed illustrations paired with a compelling narrative that uses fun language to convey familiar examples of real-world science connections. By recognizing the basic physics concept of matter and identifying the different ways matter appears in real life, kids develop a fundamental understanding of physical science and are impressed with the idea that science is a constant part of our lives and not limited to classrooms and laboratories. Simple vocabulary, detailed illustrations, easy science experiments, and a glossary all support exciting learning for kids ages 5 to 8. Perfect for beginner readers or as a read aloud nonfiction picture book! Part of a set of four books in a series called *Picture Book Science* that tackles different kinds of physical science (waves, forces, energy, and matter), *Matter* offers beautiful pictures and simple observations and explanations. Quick STEM activities such as weighing two balloons to test if air is matter help readers cross the bridge from conceptual to experiential learning and provide a foundation of knowledge that will prove invaluable as kids progress in their science education. Perfect for children who love to ask, "Why?" about the world around them, *Matter* satisfies curiosity while encouraging continual student-led learning.

Five years to the day, almost to the second, after he disappeared from the Manhattan Psychiatric Institute, leaving his host body in a catatonic state, the being known as Prot (rhymes with goat) has returned. Now, in sixteen more sessions with psychiatrist Gene Brewer, Prot reveals that he has come back to escort a chosen few to his home planet, K-PAX. K-PAX is an idyllic planet free of the pain and suffering of earth. Prot has incredible insights into how to cure that suffering, and his radical ideas have made him a celebrity. Now, legions of people are longing to follow him home. But Dr. Brewer has heard it before. Five years ago, he discovered another person buried deep in Prot's personality: Robert Porter of Montana. The mystery of Robert's illness and of Prot's true origins lie deep within Robert's shattered psyche. Now Dr. Brewer must race against the clock to unlock the secrets of Robert's traumatic past and not only save his patient but maybe humanity.

Examines the life and accomplishments of the French oceanographer, and describes his work studying and filming the undersea world.

Buddy and his family experience some exciting weather in this 3-in-1 8x8. The first story finds Pteranodon Terrace in a drought, followed by Buddy and his family taking shelter from a big rainstorm in the cave below their nest. Finally, the Pteranodon family meets two animals who traveled across the ocean during the storm, and they all take the Dinosaur Train to help the animals find their way home.

Let's paint a big rainbow to put on display. When people pass by it and see it, they'll say ... 'All rainstorms must end, and this rainstorm will too.' And they'll feel a bit happier, all thanks to you. Light can't shine without dark. Rainbows can't colour the sky without rain. And the world is always full of hope and possibility, even when we feel lost and alone. Inspired by the rainbows that children across the world have been creating and displaying in their windows, *The World Made a Rainbow* is a beautiful story with a hopeful message of staying connected to the people we love, and a proportion of proceeds will be donated to a leading children's charity. Bestselling author Michelle Robinson was desperate to find a way to help small children navigate their way

through the complex emotions caused by the 2020 lockdown. She has written a story that matters now, but will last for ever. With charming illustrations from new talent Emily Hamilton, *The World Made a Rainbow* will reassure, uplift and is the perfect reminder of fun, hope and togetherness. This audio-enabled edition comes with a gorgeous reading by Sarah Ovens, along with music and sound effects.

Humans receive the vast majority of sensory perception through the eyes and ears. This non-technical book examines the everyday physics behind hearing and vision to help readers understand more about themselves and their physical environment. It begins with

When I looked up, I shivered. How many stars were in the sky? A million? A billion? Maybe the number was as big as infinity. I started to feel very, very small. How could I even think about something as big as infinity? Uma can't help feeling small when she peers up at the night sky. She begins to wonder about infinity. Is infinity a number that grows forever? Is it an endless racetrack? Could infinity be in an ice cream cone? Uma soon finds that the ways to think about this big idea may just be . . . infinite.

Best known for his general theory of relativity and the famous equation linking mass and energy, $E = mc^2$, Albert Einstein had a lasting impact on the world of science, the extent of which is illuminated—along with his fascinating life and unique personality—in this lively history. In addition to learning all about Einstein's important contributions to science, from proving the existence and size of atoms and launching the field of quantum mechanics to creating models of the universe that led to the discovery of black holes and the big bang theory, young physicists will participate in activities and thought experiments to bring his theories and ideas to life. Such activities include using dominoes to model a nuclear chain reaction, replicating the expanding universe in a microwave oven, creating blue skies and red sunsets in a soda bottle, and calculating the speed of light using a melted chocolate bar. Suggestions for further study, a time line, and sidebars on the work of other physicists of the day make this an incredibly accessible resource for inquisitive children.

[Copyright: 9aad91c86de9e14922fa0f644aa2409c](#)