Inventor Lab Projects For Genius Makers

CUNNINGHAM KADENCE

The Human Genome Project John Wiley & Sons
“...Fascinating... A riveting American classic of independent brilliance versus corporate arrogance. I found it more fun than fiction.” — James Bradley, author of Flags of Our Fathers “... The fascinating inside story of how this eccentric loner invented television and fought corporate America.” — Walter Isaacson, chariman, CNN “...Compelling...Strong, dramatic prose...” — Kirkus Reviews “...A lively and engaging account.” — Library Journal “[A] gripping and eminently readable saga of the birth of television and the death of the Edisonian myth.” — Darwin magazine
Make and Test Projects in Engineering Design BRILL
Tesla’s inventions transformed our world, and his visions have continued to inspire great minds for generations. Nikola Tesla invented the radio, robots, and remote control. His electric induction motors run our appliances and factories, yet he has been largely overlooked by history. In Tesla, Richard Munson presents a comprehensive portrait of this farsighted and underappreciated mastermind. When his first breakthrough—alternating current, the basis of the electric grid—pitted him against Thomas Edison’s direct-current empire, Tesla’s superior technology prevailed. Unfortunately, he had little business sense and could not capitalize on this success. His most advanced ideas went unrecognized for decades: forty years in the case of the radio patent, longer still for his ideas on laser beam technology. Although penniless during his later years, he never stopped imagining. In the early 1900s, he designed plans for cell phones, the Internet, death-ray weapons, and interstellar communications. His ideas have lived on to shape the modern economy. Who was this genius? Drawing on letters, technical notebooks, and other primary sources, Munson pieces together the magnificently bizarre personal life and mental habits of the enigmatic inventor. Born during a lightning storm at midnight, Tesla died alone in a New York City hotel. He was an acute germaphobe who never shook hands and required nine napkins when he sat down to dinner. Strikingly handsome and impeccably dressed, he spoke eight languages and could recite entire books from memory. Yet Tesla’s most famous inventions were not the product of fastidiousness or linear thought but of a mind fueled by both the humanities and sciences: he conceived the induction motor while walking through a park and reciting Goethe’s Faust. Tesla worked tirelessly to offer electric power to the world, to introduce automatons that would reduce life’s drudgery, and to develop machines that might one day abolish war. His story is a reminder that technology can transcend the marketplace and that profit is not the only motivation for invention. This clear, authoritative, and highly readable biography takes account of all phases of Tesla’s remarkable life.
Build a Better Mousetrap Lulu.com
From building a bridge and crafting a catapult to making a marble run and creating a crane, Science Lab includes activities that young readers can do at home to explore, discover, and understand the way the world works. How are rockets fired into space? How is energy harnessed? How do buildings survive earthquakes? With fun, hands-on projects and experiments, this book reveals how science, technology, engineering, and maths are woven through the world around us. Simple steps guide readers through the stages of each project, with spotlights on the key science, technology, engineering, and maths learning involved in each project along the way. "Take it

further" panels encourage young readers to experiment and take their projects to the next level, developing their independence, initiative, and creative thinking skills. With a focus on STEM subjects (science, technology, engineering, and maths) across school curricula to prepare children for the modern world, Science Lab will inspire and engage inquisitive young readers. It's perfect for school projects, homework help, and firing up imaginations.

125 Physics Projects for the Evil Genius Enslow Publishing, LLC

Collects websites that are family friendly and may be useful for homework, with suggestions regarding navigation and possibly useful tools.

Science Lab World Scientific

Using fun activities and hilarious illustrations, this fill-in book helps children think like an inventor. This interactive book helps children think like an inventor by noticing details, questioning everything, and dreaming up new ideas. Through fun activities and Harriet Russell's hilarious illustrations, This Book Thinks You're an Inventor encourages readers to engage with new ideas by creatively experimenting and investigating for themselves. The book explores six subjects: engineering household objects, transportation, flight, AI and robots, construction, and the future of science. Each spread centers on an open-ended question or activity, with space on the page for the child to write, draw, or interact with the book. At the end, there are paper-based tinkering activities and experiments for children. Hand-drawn illustrations and a collage-style use of photographs give the book a fresh, creative, and fun approach that makes the scientific content appealing for children.

Scouting National Geographic Books

The world at the turn of the twentieth century was in the throes of "Marconi-mania"-brought on by an incredible invention that no one could quite explain, and by a dapper and eccentric figure (who would one day win the newly minted Nobel Prize) at the center of it all. At a time when the telephone, telegraph, and electricity made the whole world wonder just what science would think of next, the startling answer had come in 1896 in the form of two mysterious wooden boxes containing a device one Guglielmo Marconi had rigged up to transmit messages "through the ether." It was the birth of the radio, and no scientist in Europe or America, not even Marconi himself, could at first explain how it worked -- it just did. And no one knew how far these radio waves could travel, until 1903, when a message from President Theodore Roosevelt to the king of England flashed from Cape Cod to Cornwall clear across the Atlantic.Here is a rich portrait of the man and his era-and a captivating tale of science and scientists, business and businessmen. There are stories of British blowhards, American con artists-and Marconi himself: a character par excellence, who eventually winds up a virtual prisoner of his worldwide fame and fortune.

Desalination Research Springer

LORD KELVIN. In 1840, a precocious 16-year-old by the name of William Thomson spent his summer vacation studying an extraordinarily sophisticated mathematical controversy. His brilliant analysis inspired lavish praise and made the boy an instant intellectual celebrity. As a young scholar William dazzled a Victorian society enthralled with the seductive authority and powerful beauty of scientific discovery. At a time when no one really understood heat, light, electricity, or magnetism, Thomson found key connections between them, laying the groundwork for two of the cornerstones of 19th century science-the theories of electromagnetism and thermodynamics. Charismatic, confident, and boyishly handsome, Thomson was not a scientist who labored quietly in a lab, plying his trade in monkish isolation. When scores of able tinkerers were flummoxed by their inability to adapt overland telegraphic cables to underwater, intercontinental use, Thomson took to the high seas with new equipment that was to change the face of modern communications. And as the world's navies were transitioning from wooden to iron ships, they looked to Thomson to devise a compass that would hold true even when surrounded by steel. Gaining fame and wealth through his inventive genius, Thomson was elevated to the peerage by Queen Victoria for his many achievements. He was the first scientist ever to be so honored. Indeed, his name survives in the designation of degrees Kelvin, the temperature scale that begins with absolute zero, the point at which atomic motion ceases and there is a complete absence of heat. Sir William Thomson, Lord Kelvin, was Great Britain's unrivaled scientific hero. But as the century drew to a close and Queen Victoria's reign ended, this legendary scientific mind began to weaken. He grudgingly gave way to others with a keener, more modern vision. But the great physicist did not go quietly. With a ready pulpit at his disposal, he publicly proclaimed his doubts over the existence of atoms. He refused to believe that radioactivity involved the transmutation of elements. And believing that the origin of life was a matter beyond the expertise of science and better left to theologians, he vehemently opposed the doctrines of evolution, repeatedly railing against Charles Darwin. Sadly, this pioneer of modern science spent his waning years arguing that the Earth and the Sun could not be more than 100 million years old. And although his early mathematical prowess had transformed our understanding of the forces of nature, he would never truly accept the revolutionary changes he had helped bring about, and it was others who took his ideas to their logical conclusion. In the end Thomson came to stand for all that was old and complacent in the world of 19th century science. Once a scientific force to be reckoned with, a leader to whom others eagerly looked for answers, his peers in the end left him behind-and then meted out the ultimate punishment for not being able to keep step with them. For while they were content to bury him in Westminster Abbey alongside Isaac Newton, they used his death as an opportunity to write him out of the scientific record, effectively denying him his place in history. Kelvin's name soon faded from the headlines, his seminal ideas forgotten, his crucial contributions overshadowed. Destined to become the definitive biography of one of the most important figures in modern science, Degrees Kelvin unravels the mystery of a life composed of equal parts triumph and tragedy, hubris and humility, yielding a surprising and compelling portrait of a complex and enigmatic man.

Reinvent the Wheel Wiley

Are science and technology independent of one another? Is technology dependent upon science, and if so, how is it dependent? Is science dependent upon technology, and if so how is it dependent? Or, are science and technology becoming so interdependent that the line dividing them has become totally erased? This book charts the history of technoscience from the late nineteenth century to the end of the twentieth century and shows how the military–industrial–academic complex and big science combined to create new examples of technoscience in such areas as the nuclear arms race, the space race, the digital age, and the new worlds of nanotechnology and biotechnology.

Leonardo's Science Workshop Harper Collins

This DK children's book aged 11-14 is brimming with exciting, educational activities and projects that focus on electronics and technology. Keep your siblings out of your room with a brilliant bedroom alarm, power a propellor motorboat, make a stereo from pipes, build your own AM radio, and construct a night light by following step-by-step instructions and using affordable equipment. Inventor Lab will engage budding scientists and engineers as they experiment, invent, trial, and test technology, electronics, and mechanics at home. Simple steps with clear photographs take readers through the stages of each low-cost project, with fact-filled "How it works" panels to explain the science behind each one, and to fascinate them with real-world examples. With an increasing focus across school curricula on encouraging children to enjoy and explore STEM subjects (science, technology, engineering, and maths), Inventor Lab is the perfect companion for any inquisitive child with an interest in how the worlds of science experiments and technology work, and why.

Giuseppe Campani, "Inventor Romae," an Uncommon Genius National Geographic Books

A "timely, informative, and fascinating" study of 8 inventions—and how they shaped our world—with "totally compelling" insights on little-known inventors throughout history (Elizabeth Kolbert, Pulitzer Prize–winning author of The Sixth Extinction) In The Alchemy of Us, scientist and science writer Ainissa Ramirez examines 8 inventions and reveals how they shaped the human experience: • Clocks • Steel rails • Copper communication cables • Photographic film • Light bulbs • Hard disks • Scientific labware • Silicon chips Ramirez tells the stories of the woman who sold time, the inventor who inspired Edison, and the hotheaded undertaker whose invention pointed the way to the computer. She describes how our pursuit of precision in timepieces changed how we sleep; how the railroad helped commercialize Christmas; how the necessary brevity of the telegram influenced Hemingway's writing style; and how a young chemist exposed the use of Polaroid's cameras to create passbooks to track black citizens in apartheid South Africa. These fascinating and inspiring stories offer new perspectives on our relationships with technologies. Ramirez shows not only how materials were shaped by inventors but also how those materials shaped culture, chronicling each invention and its consequences—intended and unintended. Filling in the gaps left by other books about technology, Ramirez showcases little-known inventors—particularly people of color and women—who had a significant impact but whose accomplishments have been hidden by mythmaking, bias, and convention. Doing so, she shows us the power of telling inclusive stories about technology. She also shows that innovation is universal—whether it's splicing beats with two turntables and a microphone or splicing genes with two test tubes and CRISPR.

Discoveries and Inventions in Literature for Youth Dorling Kindersley Ltd

Covering titles ranging from Rocketship X-M (1950) to Wall-E (2008), these insightful essays measure the relationship between music and science fiction film from a variety of academic perspectives. Thematic sections survey specific compositions utilized in science fiction movies; Broadway's relationship with the genre; science fiction elements in popular songs; the conveyance of subjectivity and identity through music; and such individual composers as Richard Strauss (2001: A Space Odyssey) and Bernard Herrmann (The Day the Earth Stood Still).

Science News-letter Dorling Kindersley Ltd

Explore the exciting world of numbers Whether you're a maths geek or prefer practical hands-on projects, this ebook combines creativity with calculations. You don't have to be a genius or even need a calculator - each of the super-fun make-and-do projects in this ebook comes with simple step-by-step photographs and instructions that will help you whip up a cool maths creation. Perfect for kids who are interested in STEM (science, technology, engineering, and maths), Maths Lab features activities that cover many aspects of maths, including numbers, measurement, and geometry. You'll combine art and maths by drawing impossible objects, create beautiful patterns to make a times-table dreamcatcher, and perfect the ratio for making refreshing fruit drinks. Throughout the ebook, explanatory boxes show you how the maths works and how the skills you've learned can be used in the real world. Maths Lab is the perfect package for curious kids who are interested in taking the mystery out of maths.

The Alchemy of Us Taylor & Francis

Published by the Boy Scouts of America for all BSA registered adult volunteers and professionals, Scouting magazine offers editorial content that is a mixture of information, instruction, and inspiration, designed to strengthen readers' abilities to better perform their leadership roles in Scouting and also to assist them as parents in strengthening families.

The Science Teacher's Toolbox Rockport Publishers

This book highlights the achievements of the self-taught inventor, scientist, manufacturer and entrepreneur, Stanford R Ovshinsky. This remarkable individual could, without special training, compete with the well-funded establishments of learning and industry in the second half of the last century and leave us an incredible legacy of brilliant innovations with a lasting impact on our lives. His achievements extend over amazingly diverse fields and have or are prone to create new industries of great societal value. The phase change memories of commonly used rewritable CDs and DVDs as well as of new flash memories are his invention; so are the Ni Metal hydride batteries which are the enabling batteries for electric and hybrid/electric vehicles. The future hydrogen economy will utilize his efficient and safe hydrogen storage alloys. He has developed light and ultralight photovoltaic solar panels for converting sunlight into electricity and built the largest manufacturing facility for thin film flexible solar roofing materials. A common theme of his inventions is the synthesis of new materials utilizing novel aspects of structural and compositional disorder.The book explains for each of Ovshinsky's innovations the essence of his pioneering ideas and inventions. These introductions are followed by a selection of Ovshinsky's seminal publications and, for each subject category, a list of his patents which reveal the inventive mind of this unusually creative person. Ovshinsky's example of gaining a deep understanding of the science underlying his inventions, his perseverance as well as his ability to attract and inspire talented collaborators will be a role model for entrepreneurs of this century.

Leonardo's Art Workshop Bloomsbury Publishing USA

Albert Einstein may be best known as the wire-haired whacky physicist who gave us the theory of relativity, but that's just one facet of this genius's contribution to human knowledge and modern science. As József Illy expertly shows in this book, Einstein had an eminently practical side as well. As a youth, Einstein was an inveterate tinkerer in the electrical supply factory his father and uncle owned and operated. His first paid job was as a patent examiner. Later in life, Einstein contributed to many inventions, including refrigerators, microphones, and instruments for aviation. In published papers, Einstein often provided ways to test his theories and fundamental problems of the scientific community of his times. He delved deeply into a variety of technological innovations, most notably the gyrocompass, and consulted for industry in patent cases and on other legal matters. Einstein also provided explanations for common and mundane phenomena, such as the meandering of rivers. In these and other hands-on examples culled from the Einstein Papers, Illy demonstrates how Einstein enjoyed leaving the abstract world of theories to wrestle with the problems of everyday life. While we may like the idea of Einstein as a genius besotted by extra dimensions and too out-of-this-world to wear socks, The Practical Einstein gives ample evidence

that this characterization is both incomplete and an unfair representation of a man who sought to explore the intricacies of nature, whether in theory or in practice.

Organized Innovation Shell Education

Leonardo's Science Workshop leads children on an interactive adventure through key science concepts by following the multidisciplinary approach of the Renaissance period polymath Leonardo da Vinci: experimenting, creating projects, and exploring how art intersects with science and nature. Photos of Leonardo's own notebooks, paintings, and drawings provide visual inspiration. More than 500 years ago, Leonardo knew that the fields of science, technology, engineering, art, and mathematics (STEAM) are all connected. The insatiably curious Leonardo examined not just the outer appearance of his art subjects, but the science that explained them. He began his studies as a painter, but his curiosity, diligence, and genius made him also a master sculptor, architect, designer, scientist, engineer, and inventor. The Leonardo's Workshop series shares this spirit of multidisciplinary inquiry with children through accessible, engaging explanations and hands-on learning. This fascinating book harnesses children's innate curiosity to explore some of Leonardo's favorite subjects, including flight, motion, technology design, perspective, and astronomy. After each topic is explained with concepts from physics, chemistry, math, and engineering, kids can experience the principles first-hand with step-by-step STEAM projects. They will explore: The physics of flight by observing birds and experimenting with paper airplane designs The science of motion by building a windup dragonfly Gravitational acceleration with water balloons The movement of electrons by making cereal "dance" Technology design by making paper and fabric using recycled material Scientific perspective by drawing a 3D illusion Insight from other great thinkers—such as Galileo Galilei, James Clerk Maxwell, and Sir Isaac Newton—are woven into the lessons throughout. Introduce vital STEAM skills through visually rich, hands-on learning with Leonardo's Science Workshop.

The Entrepreneurial Spirit of African American Inventors W. W. Norton & Company

New York Times–bestselling authors Bill Nye the Science Guy and Gregory Mone take middle-grade readers on a scientific adventure in Book 2 of the exciting new Jack and the Geniuses series. The series combines real-world science along with a mysterious adventure that will leave kids guessing until the end, making the books ideal for STEM education. In the second installment, In the Deep Blue Sea, Jack, his genius siblings Ava and Matt, and inventor Dr. Hank Witherspoon travel to the Hawaiian island home of Ashley Hawking, a technology billionaire. Hawking and engineer Rosa Morris have built a revolutionary electricity plant that harvests energy from the deep ocean, but someone has been sabotaging the project. In their search for the culprit, Jack and crew navigate an unusual world of characters and suspects, including Hawking and her obnoxiously intelligent son, Steven; a family of surfers who accuse the billionaire of trespassing on sacred land; an ex–Navy SEAL with a fondness for cat photos; and a cigar-chomping man who calls himself the Air-Conditioning King of Hawaii. Readers will learn about the mysteries of the deep ocean, the scientific process, and the potential of green energy as Jack and his brilliant siblings use all their brainpower to survive. Integrating real science facts with humor and suspense and featuring a multiethnic cast of boy and girl characters, this engaging series is an irresistible combination for middle-grade readers. With easy-to-read language presented in a fun and accessible way, these books are great for both inquisitive kids and reluctant readers. In the Deep Blue Sea: Jack and the Geniuses Book 2 includes information about the science discussed and used to solve the mystery, as well as a cool project that kids can do at home or in the classroom. Bill Nye's brand-new talk show series for Netflix, Bill Nye Saves the World, premieres on April 21, 2017.

A History of Technoscience National Academies Press

125 Wickedly Fun Ways to Test the Laws of Physics! Now you can prove your knowledge of physics without expending a lot of energy. 125 Physics Projects for the Evil Genius is filled with hands-on explorations into key areas of this fascinating field. Best of all, these experiments can be performed without a formal lab, a large budget, or years of technical experience! Using easy-to-find parts and tools, this do-it-yourself guide offers a wide variety of physics experiments you can accomplish on your own. Topics covered include motion, gravity, energy, sound, light, heat, electricity, and more. Each of the projects in this unique guide includes parameters, a detailed methodology, expected results, and an explanation of why the experiment works. 125 Physics Projects for the Evil Genius: Features step-by-step instructions for 125 challenging and fun physics experiments, complete with helpful illustrations Allows you to customize each experiment for your purposes Includes details on the underlying principles behind each experiment Removes the frustration factor--all required parts are listed, along with sources 125 Physics Projects for the Evil Genius provides you with all of the information you need to demonstrate: Constant velocity Circular motion and centripetal force Gravitational acceleration Newton's laws of motion Energy and momentum The wave properties of sound Refraction, reflection, and the speed of light Thermal expansion and absolute zero Electrostatic force, resistance, and magnetic levitation The earth's magnetic field The size of a photon, the charge of an electron, and the photoelectric effect And more

Strange Brains and Genius Rockport Publishers

Never has the term mad scientist been more fascinatingly explored than in internationally recognized popular science author Clifford Pickover's richly researched wild ride through the bizarre lives of eccentric geniuses. A few highlights: "The Pigeon Man from Manhattan" Legendary inventor Nikola Tesla had abnormally long thumbs, a peculiar love of pigeons, and a horror of women's pearls. "The Worm Man from Devonshire" Forefather of modern electric-circuit design Oliver Heaviside furnished his home with granite blocks and sometimes consumed only milk for days (as did Nikola Tesla and Thomas Edison). "The Rabbit-Eater from Lichfield" Renowned scholar Samuel Johnson had so many tics and quirks that some mistook him for an idiot. In fact, his behavior matches modern definitions of obsessive-compulsive disorder and Tourette's syndrome. Pickover also addresses many provocative topics: the link between genius and madness, the role the brain plays in alien abduction and religious experiences, UFOs, cryonics -- even the whereabouts of Einstein's brain!

Tesla: Inventor of the Modern Citadel

This book not only documents the valuable contributions of African American thinkers, inventors, and entrepreneurs past and present, but also puts these achievements into context of the obstacles these innovators faced because of their race. Successful entrepreneurs and inventors share valuable characteristics like self-confidence, perseverance, and the ability to conceptualize unrealized solutions or opportunities. However, another personality trait has been required for African Americans wishing to become business owners, creative thinkers, or patent holders: a willingness to overcome the additional barriers placed before them because of their race, especially in the era before civil rights. The Entrepreneurial Spirit of African American Inventors provides historical accounts of creativity, innovation, and entrepreneurship among black Americans, from the 19th century to the present day. The author examines how these individuals stimulated industry, business activity, and research, helping shape the world as we know it and setting the precedent for the minority business tradition in the United States. This book also sheds light on fascinating advances made in metallurgy, medicine, architecture, and other fields that supply further examples of scientific inquiry and business acumen among African Americans.