

## The Science Of Leonardo Inside The Mind Of The Great Genius Of The Renaissance

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A science biography that examines the life and work of Leonardo da Vinci and offers kids the opportunity to make their own designs and inventions with hands-on activities! Leonardo da Vinci is famous for the Mona Lisa and other works of art. His other claim to fame? Being an inventor! During the Renaissance, inventors and other creative thinkers designed and constructed many new things. It was a time of discovery, wonder, and exploration. And one of the people on the forefront of that awakening was Leonardo da Vinci. In *The Science and Technology of Leonardo da Vinci*, readers ages 9 through 12 explore the life of one of the world's most amazing minds. They discover what it might have been like to live in the seventeenth century, when work, entertainment, medicine, travel, and food were very different. They ponder the same kinds of questions that drove Leonardo to tinker and experiment endlessly, even while creating artwork that influenced entire generations who came after him. What is the inside of the body like? How might humans fly? How can geometry be used to design strong buildings? His dedication to invention, experimentation, and art, along with his insatiable curiosity, gave the world new insight into anatomy, botany, engineering, and much more. Kids gain these same insights through hands-on STEM activities, essential questions, text-to-world connections, and links to online resources, including primary sources, that encourage readers to take a closer look at the world of the Renaissance. Projects use materials already found in most homes, reimagining and repurposing everyday items, as well as those found in the recycling bin. Make career connections in the fields of engineering, art, medicine, and more! Aligns with Common Core State Standards Projects include Designing a parachute, Making a camera obscura, Working with perspective, Designing a water clock. Addresses disciplinary core ideas (e.g., "Structure and Properties of Matter") and crosscutting concepts (e.g., "Energy and Matter;" "Influence of Engineering, Technology, and Science on Society and the Environment") for NSTA's NGSS curriculum. Numerous, direct connections to Dimension 2 of the C3 Framework ("History" Grades 3-5), providing opportunities for young readers to explore how a historically significant person evolved in context and engendered both scientific and social change. Additional materials include a glossary, a list of media for further learning, a selected bibliography, and index. About the Build It Science Biographies set and Nomad Press *The Science and Technology of Leonardo da Vinci* is part of a set of three Build It Science Biographies that capture the curiosity of three science revolutionaries who were able to glimpse beyond the limits of human experience and make discoveries that continue to resonate today. Other titles in this set include *The Science and Technology of Ben Franklin* and *The Science and Technology of Marie Curie*. Nomad Press books in the Build It series integrate content with participation. Combining content with inquiry-based projects stimulates learning and makes it active and alive. Nomad's unique approach simultaneously grounds kids in factual knowledge while allowing them the space to be curious, creative, and critical thinkers. All books are leveled for Guided Reading level and Lexile and align with Common Core State Standards and Next Generation Science Standards. All titles are available in paperback, hardcover, and ebook formats.

This in-depth investigation into the art, politics and murderous cynicism of Renaissance Milan is an academic detective story sketched out with erudition and journalistic panache. Debunking the outrageous claim by the notorious Lancashire forger Shaun Greenhalgh that he produced the mesmerizing portrait of a young girl that zoomed into the art world limelight in 2009, Hewitt proves that Leonardo was on intimate terms with both the sitter - Bianca Sforza, teenage daughter of the Duke of Milan - and her husband, Galeazzo Sanseverino, the Duke's Army Captain, effective Number Two and, as Hewitt convincingly demonstrates, the subject of Leonardo's enigmatic portrait *The Musician*. Hewitt brings the tragic Bianca to life, suggests why and by whom she was likely murdered, and explains why her Leonardo portrait was included in one of the most lavish books ever produced - whose co-illustrator, Giovan Pietro Birago, was paid even more than Leonardo. Finally, in one of the most significant artistic discoveries of recent times, Hewitt shows how Birago's artistic colleagues had no hesitation in lampooning the venerable Leonardo as a Ginger-Haired Gay.

Volume 1 of 2-volume set. Total of 1,566 extracts includes writings on painting, sculpture, architecture, anatomy, mining, inventions, and music. Dual Italian-English texts, with 186 plates plus over 500 additional drawings.

*Leonardo Da Vinci's Elements of the Science of Man* describes how Da Vinci integrates his mechanical observations and experiments in mechanics into underlying principles. This book is composed of 17 chapters that highlight the principles underlying Da Vinci's research in anatomical studies. Considerable chapters deal with Leonardo's scientific methods and the mathematics of his pyramidal law, as well as his observations on the human and animal movements. Other chapters describe the artist's anatomical approach to the mechanism of the human body, specifically the physiology of vision, voice, music, senses, soul, and the nervous system. The remaining chapters examine the mechanism of the bones, joints, respiration, heart, digestion, and urinary and reproductive systems.

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Leonardo da Vinci was one of history's true geniuses, equally brilliant as an artist, scientist, and mathematician. Readers of *The Da Vinci Code* were given a glimpse of the mysterious connections between math, science, and Leonardo's art. *Math and the Mona Lisa* picks up where *The Da Vinci Code* left off, illuminating Leonardo's life and work to uncover connections that, until now, have been known only to scholars. Bülent Atalay, a distinguished scientist and artist, examines the science and mathematics that underlie Leonardo's work, paying special attention to the proportions, patterns, shapes, and symmetries that scientists and mathematicians have also identified in nature. Following Leonardo's own unique model, Atalay searches for the internal dynamics of art and science, revealing to us the deep unity of the two cultures. He provides a broad overview of the development of science from the dawn of civilization to today's quantum mechanics. From this base of information, Atalay offers a fascinating view into Leonardo's restless intellect and *modus operandi*, allowing us to see the source of his ideas and to appreciate his art from a new perspective.

The award-winning and bestselling collection of the exquisite, annotated notebooks of Leonardo now in paperback. Culled from more than 7,000 pages of sketches and writings found in various rare books, papers, and other resources throughout the world, *Leonardo's Notebooks* presents, for the first time, an exhaustive collection of the insights and brilliance of perhaps the finest mind the world has ever known.

"We are trying to apply the concepts of an outdated world view--the mechanistic world view of Cartesian-Newtonian science--to a reality that can no longer be understood in terms of these concepts... To describe this world appropriately, we need an ecological perspective that the Cartesian world view does not offer." (Preface 15,16).

*Understanding Da Vinci's Creative Genius* The life and art of history's most influential mind Bestselling author Leonard Shlain explores the potential for humankind through the life, art, and mind of the first true Renaissance Man, Leonardo da Vinci. His innovations as an artist, scientist, and inventor are recast through a modern lens, with Shlain applying contemporary neuroscience to illuminate da Vinci's creative process. No other person in human history has excelled in so many areas of innovation: Shlain reveals the how and the why. Shlain theorizes that Leonardo's extraordinary mind came from a uniquely developed and integrated right and left brain, which offers a model for how we too can evolve. Using past and current research, *Leonardo's Brain* presents da Vinci as the focal point for a fresh exploration of human creativity. With his lucid style and remarkable ability to discern connections among a wide range of fields, Shlain brings the reader into the world of history's greatest mind. Leonard Shlain is a bestselling author, inventor, and surgeon. Admired among artists, scientists, philosophers, anthropologists, and educators, he authored three bestselling books. He delivered stunning visual presentations based upon his books in venues around the world, including Harvard, the New York Museum of Modern Art, CERN, Los Alamos, the Florence Academy of Art, and the European Council of Ministers. Shlain died in May 2009 at the age of 71 from brain cancer shortly after the completion of this book. Visit [LeonardShlain.com](http://LeonardShlain.com) and [LeonardosBrain.com](http://LeonardosBrain.com).

*The Science of Leonardo* Inside the Mind of the Great Genius of the Renaissance Anchor

The author of *The Tao of Physics* applies the principles of complexity theory to an analysis of the vast expanse of all human relationships to examine the social impact of emerging scientific principles, discussing such important matters as the management of human organizations, the challenges and dangers of economic globalization, and the nature and problems of biotechnology. Reprint. 25,000 first printing.

The murder of a world-famous physicist raises fears that the Illuminati are operating again after centuries of silence, and religion professor Robert Langdon is called in to assist with the case.

In recent years, Niccolò Machiavelli's works have been viewed primarily with historical interest as analysis of the tactics used by immoral political officials. Roger D. Masters, a leading expert in the relationship between modern natural sciences and politics, argues boldly in this book that Machiavelli should be reconsidered as a major philosopher whose thought makes the wisdom of antiquity accessible to the modern (and post-modern) condition, and whose understanding of human nature is superior to that of Hobbes, Locke, Rousseau, Marx, or Mill. Central to Masters's claim is his discovery, based on previously untranslated documents, that Machiavelli knew and worked with Leonardo da Vinci between 1502-1507. An interdisciplinary tour de force, *Machiavelli, Leonardo, and the Science of Power* will challenge, perplex, and ultimately delight readers with its evocative story of the relationship between Machiavelli and da Vinci, their crucial roles in the emergence of modernity, and the vast implications this holds for contemporary life and society.

Using the inspiration of Leonardo da Vinci to build a new, humanistic computing that focuses on users' needs and goals.

Argues that the great "renaissance man" was in fact the first great modern man of science.

"People of good will wish to see science and religion at peace. . . . I do not see how science and religion could be unified, or even synthesized, under any common scheme of explanation or analysis; but I also do not understand why the two enterprises should experience any conflict." So states internationally renowned evolutionist and bestselling author Stephen Jay Gould in the simple yet profound thesis of his brilliant new book. Writing with bracing intelligence and elegant clarity, Gould sheds new light on a dilemma that has plagued thinking people since the Renaissance. Instead of choosing between science and religion, Gould asks, why not opt for a golden mean that accords dignity and distinction to each realm? At the heart of Gould's penetrating argument is a lucid, contemporary principle he calls NOMA (for nonoverlapping magisteria)--a "blessedly simple and entirely conventional resolution" that allows science and religion to coexist peacefully in a position of respectful noninterference. Science defines the natural world; religion, our moral world, in recognition of their separate spheres of influence. In elaborating and exploring this thought-provoking concept, Gould delves into the history of science, sketching affecting portraits of scientists and moral leaders wrestling with matters of faith and reason. Stories of seminal figures such as Galileo, Darwin, and Thomas Henry Huxley make vivid his argument that individuals and cultures must cultivate both a life of the spirit and a life of rational inquiry in order to experience the fullness of being human. In his bestselling books *Wonderful Life*, *The Mismeasure of Man*,

and Questioning the Millennium, Gould has written on the abundance of marvels in human history and the natural world. In *Rocks of Ages*, Gould's passionate humanism, ethical discernment, and erudition are fused to create a dazzling gem of contemporary cultural philosophy. As the world's preeminent Darwinian theorist writes, "I believe, with all my heart, in a respectful, even loving concordat between . . . science and religion."

Approaching the 500th anniversary of Leonardo's death, the world-renowned da Vinci expert recounts his fifty-year journey with the work of the world's most famous artist. A personal memoir interwoven with original research, *Living with Leonardo* takes us deep inside Leonardo da Vinci scholar Martin Kemp's lifelong passion for the genius who has helped define our culture. Each chapter considers a specific work as Kemp offers insight into his encounters with academics, collectors, curators, devious dealers, auctioneers, and authors—as well as how he has grappled with legions of "Leonardo loonies," treaded vested interests in academia and museums, and fended off fusillades of non-Leonardos. Kemp explains his thinking on the Last Supper and the Mona Lisa, retells his part in the identification of the stolen Buccleuch Madonna, and explains his involvement on the two major Leonardo discoveries of the last 100 years: La Bella Principessa and Salvator Mundi. His engaging narrative elucidates the issues surrounding attribution, the scientific analyses that support experts' interpretations, and the continuing importance of connoisseurship. Illustrated with the works being discussed, *Living with Leonardo* explores the artist's genius from every angle, including technical analysis and the pop culture works he inspired, such as *The Da Vinci Code*, and his enduring influence 500 years after his death.

This inspiring and inventive guide teaches readers how to develop their full potential by following the example of the greatest genius of all time, Leonardo da Vinci. Acclaimed author Michael J. Gelb, who has helped thousands of people expand their minds to accomplish more than they ever thought possible, shows you how. Drawing on Da Vinci's notebooks, inventions, and legendary works of art, Gelb introduces Seven Da Vincian Principles—the essential elements of genius—from *curiosità*, the insatiably curious approach to life to *conessione*, the appreciation for the interconnectedness of all things. With Da Vinci as your inspiration, you will discover an exhilarating new way of thinking. And step-by-step, through exercises and provocative lessons, you will harness the power—and awesome wonder—of your own genius, mastering such life-changing abilities as:

- Problem solving
- Creative thinking
- Self-expression
- Enjoying the world around you
- Goal setting and life balance
- Harmonizing body and mind

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*Amazing Leonardo da Vinci Inventions You Can Build Yourself* introduces readers to the life, world, and incredible mind of Leonardo da Vinci through hands-on building projects that explore his invention ideas. Most of Leonardo's inventions were never made in his lifetime—they remained sketches in his famous notebooks. *Amazing Leonardo da Vinci Inventions You Can Build Yourself* shows you how to bring these ideas to life using common household supplies. Detailed step-by-step instructions, diagrams, and templates for creating each project combine with historical facts and anecdotes, biographies and trivia about the real-life models for each project. Together they give kids a first-hand look into the amazing mind of one of the world's greatest inventors.

Serious inconsistencies and scientific gaps plague current dietary recommendations, especially when it comes to cancer. Moreover, these recommendations crash head on with many traditional, ethnic, and cultural practices around the world. Until we openly address what led to these recommendations, the overwhelming impact of philosophical and religious beliefs over science, and the fatal inconsistencies that lie within, we will be unable to have a candid conversation about what we should eat to fight cancer. Did Leonardo, a poor shepherd from southern Italy, know this all along? *Leonardo's Legacy* is a first attempt to start this conversation.

"Leonardo da Vinci was a brilliant artist, scientist, engineer, mathematician, architect, inventor, writer, and even musician—the archetypal Renaissance man. But he was also, Fritjof Capra argues, a profoundly modern man. Not only did Leonardo invent the empirical scientific method over a century before Galileo and Francis Bacon, but Capra's decade-long study of Leonardo's fabled notebooks reveal him as a systems thinker centuries before the term was coined. He believed the key to truly understanding the world was in perceiving the connections between phenomena and the larger patterns formed by those relationships. This is precisely the kind of holistic approach the complex problems we face today demand. Capra describes seven defining characteristics of Leonardo da Vinci's genius and includes a list of over forty discoveries Leonardo made that weren't rediscovered until centuries later. Leonardo pioneered entire fields—fluid dynamics, theoretical botany, aerodynamics, embryology. Capra's overview of Leonardo's thought follows the organizational scheme Leonardo himself intended to use if he ever published his notebooks. So in a sense, this is Leonardo's science as he himself would have presented it. Leonardo da Vinci saw the world as a dynamic, integrated whole, so he always applied concepts from one area to illuminate problems in another. For example, his studies of the movement of water informed his ideas about how landscapes are shaped, how sap rises in plants, how air moves over a bird's wing, and how blood flows in the human body. His observations of nature enhanced his art, his drawings were integral to his scientific studies, and he brought art and science together in his extraordinarily beautiful and elegant mechanical and architectural designs. Obviously, we can't all be geniuses on the scale of Leonardo da Vinci. But by exploring the mind of the preeminent Renaissance genius, we can gain profound insights into how best to address the challenges of the 21st century"—

The *Salvator Mundi* is the first Leonardo painting to be discovered for over a century. Following its re-emergence, it played a leading role in the landmark Leonardo exhibition at the National Gallery in London in 2011, after which it was purchased by a Russian oligarch. In 2017 it was auctioned by Christie's in New York, fetching the world record price of \$450m, and now forms part of the collection of Louvre Abu Dhabi. The *Salvator Mundi* may be seen as the devotional counterpart to the *Mona Lisa*, having an extraordinary, communicative presence. The artist has reformed the very traditional subject matter in a number of ways. The elusiveness of Christ's expression suggests his spiritual origins beyond the world of the senses. The traditional sphere of the earth has been transformed into a rock-crystal orb and signifies a crystalline sphere of the heavens. In addition to its spiritual dimension, the image exploits Leonardo's optical knowledge and his growing sense of the illusiveness of seeing. Only the blessing hand is in reasonably sharp focus, with his features softly veiled. The scintillating curls of his hair are characterised in line with his theory that the physics of the curling of hair is analogous to vortex motion in water. This book looks at evidence of Leonardo's *Salvator Mundi* in the collections of Charles I and Charles II. It explores the appraisal of works by Leonardo at the Stuart courts, and proposes that how works attributed to Leonardo were first encountered and understood in seventeenth-century Britain would shape the wider evolution of Leonardo as a cultural icon. This volume gives a dramatic first-hand account of

the modern-day discovery of the painting, from its purchase in a minor New Orleans auction house, to the cleaning of the picture that would disclose it as Leonardo's startling original, and the research processes that would uncover illustrious and obscure former owners. The book presents the definitive study of the new masterpiece.

Revered today as, perhaps, the greatest of Renaissance painters, Leonardo da Vinci was a scientist at heart. The artist who created the Mona Lisa also designed functioning robots and digital computers, constructed flying machines and built the first heart valve. His intuitive and ingenious approach—a new mode of thinking—linked highly diverse areas of inquiry in startling new ways and ushered in a new era. In *Leonardo's Legacy*, award-winning science journalist Stefan Klein deciphers the forgotten legacy of this universal genius and persuasively demonstrates that today we have much to learn from Leonardo's way of thinking. Klein sheds light on the mystery behind Leonardo's paintings, takes us through the many facets of his fascination with water, and explains the true significance of his dream of flying. It is a unique glimpse into the complex and brilliant mind of this inventor, scientist, and pioneer of a new world view, with profound consequences for our times.

"The passing of great Renaissance master Leonardo da Vinci- artist, anatomist, engineer, inventor- marked the end of an era. The world hasn't seen a visionary like him since...until now. On a school trip to Florence, three American middle school students think they're in for a treat when a man who claims to be Leonardo da Vinci, brought back to life with a mission to better humankind, crashes their tour. Too bad he isn't really the celebrated Master of the Renaissance...or is he? Will the students be able to help Leonardo evade the mayor of Florence's selfish grasp so he can complete his quest before his time runs out? Tag along with Tad, Max, and Gina as they assist Leonardo on his quest, discover the secrets of his life, and teach the Maestro about science, math, history, art, and more!"--

Contemporaneous illustrations trace over three hundred years of experiments and research in astronomy, mathematics, and the physical, earth, and life sciences

Set against the turbulent and innovative world of the Renaissance, a detailed portrait of the master artist, scientist, inventor, and philosopher draws on the personal notebooks, journals, art, and other writings to provide a compelling study of Leonardo da Vinci and his seminal contributions to his era. 12,500 first printing.

Little Leonardo's Fascinating World of Science introduces kids to the vast and varied areas of science and the different types of scientists they can aspire to become. Whether it's ancient dinosaur bones unearthed by paleontologists, anthropologists studying different cultures around the globe, or new planets discovered by astronomers, there's bound to be something here any child will find fascinating and appealing.

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.

Leonardo da Vinci's pioneering scientific work was virtually unknown during his lifetime. Leonardo was in many ways the un-acknowledged "father of modern science." Drawing on an examination of over 6,000 pages of Leonardo's surviving Notebooks, Capra explains that Leonardo approached scientific knowledge with the eyes of an artist. Through his studies of living and non-living forms, from architecture and human anatomy to the turbulence of water and the growth patterns of grasses, he pioneered the empirical, systematic approach to the observation of nature -- what is now known as the scientific method. A fresh and important portrait of a colossal figure in the world of science and the arts. Includes 50 beautiful sepia-toned illustrations. Explores the scientific studies, experiments, and observations of this world-renowned artist and scientist of the fifteenth century through a review of the writings, notes, and sketches left behind in his vast collection of notebooks. An ALA Notable Book. Reprint.

The first history of the western polymath, from the fifteenth century to the present day From Leonardo Da Vinci to John Dee and Comenius, from George Eliot to Oliver Sacks and Susan Sontag, polymaths have moved the frontiers of knowledge in countless ways. But history can be unkind to scholars with such encyclopaedic interests. All too often these individuals are remembered for just one part of their valuable achievements. In this engaging, erudite account, renowned cultural historian Peter Burke argues for a more rounded view. Identifying 500 western polymaths, Burke explores their wide-ranging successes and shows how their rise matched a rapid growth of knowledge in the age of the invention of printing, the discovery of the New World and the Scientific Revolution. It is only more recently that the further acceleration of knowledge has led to increased specialisation and to an environment that is less supportive of wide-ranging scholars and scientists. Spanning the Renaissance to the present day, Burke changes our understanding of this remarkable intellectual species.

The bestselling 30-Second... series takes a revolutionary approach to learning about those subjects you feel you should really understand. Each title selects a popular topic and dissects it into the 50 most significant ideas at its heart. Every idea, no matter how complex, is explained in 300 words and one picture, all digestible in 30 seconds. 30-Second Leonardo da Vinci uses this unique approach to grapple with the truly diverse thoughts of the ultimate Renaissance Man. Artist, anatomist, sculptor, inventor, architect, cartographer, mathematician, musician, botanist, geologist the word polymath does not quite do Leonardo justice. The painter of the Mona Lisa and conceptualizer of the helicopter seems like a Renaissance superhero. Here, the worlds

leading Leonardo scholars present an instant and expert guide to the breadth and brilliance of his greatest innovations.

The #1 New York Times bestseller from Walter Isaacson brings Leonardo da Vinci to life in this exciting new biography that is “a study in creativity: how to define it, how to achieve it...Most important, it is a powerful story of an exhilarating mind and life” (The New Yorker). Based on thousands of pages from Leonardo da Vinci’s astonishing notebooks and new discoveries about his life and work, Walter Isaacson “deftly reveals an intimate Leonardo” (San Francisco Chronicle) in a narrative that connects his art to his science. He shows how Leonardo’s genius was based on skills we can improve in ourselves, such as passionate curiosity, careful observation, and an imagination so playful that it flirted with fantasy. He produced the two most famous paintings in history, The Last Supper and the Mona Lisa. With a passion that sometimes became obsessive, he pursued innovative studies of anatomy, fossils, birds, the heart, flying machines, botany, geology, and weaponry. He explored the math of optics, showed how light rays strike the cornea, and produced illusions of changing perspectives in The Last Supper. His ability to stand at the crossroads of the humanities and the sciences, made iconic by his drawing of Vitruvian Man, made him history’s most creative genius. In the “luminous” (Daily Beast) Leonardo da Vinci, Isaacson describes how Leonardo’s delight at combining diverse passions remains the ultimate recipe for creativity. So, too, does his ease at being a bit of a misfit: illegitimate, gay, vegetarian, left-handed, easily distracted, and at times heretical. His life should remind us of the importance to be imaginative and, like talented rebels in any era, to think different. Here, da Vinci “comes to life in all his remarkable brilliance and oddity in Walter Isaacson’s ambitious new biography...a vigorous, insightful portrait” (The Washington Post). This engaging book places Leonardo da Vinci’s scientific achievements within the wider context of the rapid development that occurred during the Renaissance. It demonstrates how his contributions were not in fact born of isolated genius, but rather part of a rich period of collective advancement in science and technology, which began at least 50 years prior to his birth. Readers will discover a very special moment in history, when creativity and imagination were changing the future—shaping our present. They will be amazed to discover how many technological inventions had already been conceived or even designed by the engineers and inventors who preceded Leonardo, such as Francesco di Giorgio and Taccola, the so-called Siena engineers. This engaging volume features a wealth of illustrations from a variety of original sources, such as manuscripts and codices, enabling the reader to see and judge for him or herself the influence that other Renaissance engineers and inventors had on Leonardo.

An entirely new account of Leonardo the artist and Leonardo the scientist, and why they were one and the same man Leonardo da Vinci has long been celebrated for his consummate genius. He was the painter who gave us the Mona Lisa and The Last Supper, and the inventor who anticipated the advent of airplanes, hot air balloons, and other technological marvels. But what was the connection between Leonardo the painter and Leonardo the scientist? Historians of Renaissance art have long supposed that Leonardo became increasingly interested in science as he grew older and turned his insatiable curiosity in new directions. They have argued that there are, in effect, two Leonardos—an artist and an inventor. In this pathbreaking new interpretation, the art historian Francesca Fiorani offers a different view. Taking a fresh look at Leonardo’s celebrated but challenging notebooks, as well as other sources, Fiorani argues that Leonardo became familiar with advanced thinking about human vision when he was still an apprentice in a Florence studio—and used his understanding of optical science to develop and perfect his painting techniques. For Leonardo, the task of the painter was to capture the interior life of a human subject, to paint the soul. And even at the outset of his career, he believed that mastering the scientific study of light, shadow, and the atmosphere was essential to doing so. Eventually, he set down these ideas in a book—A Treatise on Painting—that he considered his greatest achievement, though it would be disfigured, ignored, and lost in subsequent centuries. Ranging from the teeming streets of Florence to the most delicate brushstrokes on the surface of the Mona Lisa, The Shadow Drawing vividly reconstructs Leonardo’s life while teaching us to look anew at his greatest paintings. The result is both stirring biography and a bold reconsideration of how the Renaissance understood science and art—and of what was lost when that understanding was forgotten.

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