

Ada Lovelace: The Making Of A Computer Scientist

'Mathematical Science is the language of the unseen relations between things', wrote Ada Lovelace, daughter of Lord Byron, mathematician and computer visionary. Ada loved birds and a series of poems on birds and flight are designed like punch cards to isolate key words, creating an alternative text for a woman's life.

Ada Byron is rich and clever, but she longs to be free. Free to explore all the amazing ideas that come to her imagination, like flying mechanical horses and stories inspired by her travels. Free to find love and passion beyond the watchful gaze of her mother and governesses. And free to learn the full truth about her father, the notorious Lord Byron. Then Ada meets a man whose invention might just change the world – and he needs her visionary brilliance to bring it to life . . . A wonderfully witty and poignant portrayal of the young life of Ada Lovelace, the 19th-century mathematician who is hailed as the world's first computer programmer.

Ada Lovelace, the daughter of Lord Byron was born in 1815 just after the Battle of Waterloo, and died aged 36, soon after the Great Exhibition of 1851. She was connected with some of the most influential and colourful characters of the age: Charles Dickens, Michael Faraday, Charles Darwin and Charles Babbage. It was her work with Babbage that led to her being credited with the invention of computer programming and to her name being adopted for the programming language that controls the US military machine. Ada personified the seismic historical changes taking place over her lifetime. This was the era when fissures began to open up in culture: romance split away from reason, instinct from intellect, art from science. Ada came to embody these new polarities and her life heralded a new era: the machine age. Reissued to coincide with the bicentenary of Ada's birth, *The Bride of Science* is a fascinating examination of an extraordinary life offering devastating insight into the seemingly unbridgeable gulf between art and science, the consequences of which are still with us today. This new biography tells for the first time the story of the woman who, alongside Charles Babbage, invented the world's first computer. The daughter of Lord Byron, Ada was the visionary who recognised the true potential of Babbage's of cog-wheel computer, *The Analytical Engine*. She demonstrated to the world that computers wouldn't merely be adding machines, but that they would be able to think. Ada and Babbage may have been colleagues, but they were also the closest of friends. Though she was 20 years his junior, they develop lasting relationship that blossomed into romance. Babbage was a genius and Ada was a woman with a singular vision, unconstrained by her by her time. Here we learn of their friendship and extraordinary legacy.

How Lord Byron's Daughter Ada Lovelace Launched the Digital Age

Vestiges of the Natural History of Creation

A Symposium on Digital Computing Machines

Understanding and Exploring Nature as Computation

It Began with Babbage

Faster Than Thought

Ada Lovelace Cracks the Code

Uses excerpts from letters, memoirs, and documents to recreate the life of Ada Byron, daughter of the English poet, and discusses her contributions to mathematics and her friendships with the leading mathematicians of the period

"The drama of Byron's marriage...culminated in the life and death of his daughter Ada... Her whole life was inexorably thwarted by her obsessive mother, from whom not even her marriage at nineteen to the devoted Lord King, later first Earl of Lovelace, could entirely free her. Ada's scientific gifts manifested themselves early, and some of her happiest experiences came when she was free to work with Charles Babbage, father of the modern computer, who had a high opinion of her talent... Against the background of the social, intellectual and moral attitudes of the early and mid-nineteenth century, this revealing account of an extraordinary and sinister family relationship and its predestined victim is wholly engrossing"--from jacket flaps.

Do you enjoy playing computer games or learning programming code? As a child, Ada Lovelace loved learning about math and science. As an adult, she used that knowledge to create the first computer program—before electronic computers even existed! When Lovelace was a child, girls didn't typically study math. But she loved the subject and often dreamed about new machines. Lovelace learned from famous mathematicians and became friends with inventor and engineer Charles Babbage. Realizing the full potential of his calculating machines, she became a pioneer of computer programming. But how did she get there? Find out how Lovelace's determination helped her become the first computer programmer.

She invents crazy contraptions, solves big sums, and reads all the books in the library. Although she may look like an ordinary little girl, Ada Lovelace is about to change the world. Zoë Tucker and Rachel Katstaller tell the amazing true story of a little girl who didn't go to school, but grew up to create the world's first computer program.

A Computable Universe

Sketch of the Analytical Engine invented by Charles Babbage ... with notes by the translator. Extracted from the 'Scientific Memoirs,' etc. [The translator's notes signed: A.L.L. ie. Augusta Ada King, Countess Lovelace.]

Ada Byron Lovelace and the Thinking Machine

A New Kind of Science

Women's Textualities in Early Modern England

The Story of Ada Lovelace

The Genesis of Computer Science

A startling reevaluation of Lady Byron's marriage and the untold story of her complex life as single mother and progressive force. The center of public attention after her tumultuous marriage to Lord Byron, Annabella Milbanke transformed herself from a neglected wife into a figure of incredible resilience and social vision. After she and her infant child were cast out of their home, she was left to navigate the stifling and unsupportive social environment of Regency England. Far from a victim or an obstacle to Byron's work, however, Lady Byron was a rebel against the fashionable snobbery of her class, founding the first Infants School and Co-Operative School in England. A poet and talented mathematician, Lady Byron supported the education of her

precocious daughter, Ada Lovelace, now recognized and lauded as a pioneer of computer science, and saved from death her “adoptive daughter” Medora Leigh, the child of Lord Byron’s incest with his sister. Lady Byron was adored by the younger abolitionist Harriet Beecher Stowe and by many notable friends. Yet her complex relationships with her family, including the sister Byron loved, runs like a live wire through this skillfully told and groundbreaking biography of a remarkable woman who made a life for herself and became a leading light in her century.

NOW IN PAPERBACK “Starting from a collection of simple computer experiments” “illustrated in the book by striking computer graphics” “Stephen Wolfram shows how their unexpected results force a whole new way of looking at the operation of our universe.

*This volume, with a foreword by Sir Roger Penrose, discusses the foundations of computation in relation to nature. It focuses on two main questions: What is computation? How does nature compute? The contributors are world-renowned experts who have helped shape a cutting-edge computational understanding of the universe. They discuss computation in the world from a variety of perspectives, ranging from foundational concepts to pragmatic models to ontological conceptions and philosophical implications. The volume provides a state-of-the-art collection of technical papers and non-technical essays, representing a field that assumes information and computation to be key in understanding and explaining the basic structure underpinning physical reality. It also includes a new edition of Konrad Zuse’s *OC Calculating Space* (the MIT translation), and a panel discussion transcription on the topic, featuring worldwide experts in quantum mechanics, physics, cognition, computation and algorithmic complexity. The volume is dedicated to the memory of Alan M Turing *OC* the inventor of universal computation, on the 100th anniversary of his birth, and is part of the Turing Centenary celebrations.*

Ada Lovelace The Making of a Computer Scientist

A Novel of Ada Lovelace

Madam C.J. Walker Builds a Business

The Making of a Computer Scientist

Romance, Reason and Byron's Daughter

Say Why to Drugs

Ada Lovelace: Rebel. Genius. Visionary

Pens and Needles

This illuminating biography reveals how the daughter of Lord Byron, Britain’s most infamous Romantic poet, became the world’s first computer programmer. Even by 1800s standards, Ada Byron Lovelace had an unusual upbringing. Her strict mother worked hard at cultivating her own role as the long-suffering ex-wife of bad-boy poet Lord Byron while raising Ada in isolation. Tutored by the brightest minds, Ada developed a hunger for mental puzzles, mathematical conundrums, and scientific discovery that kept pace with the breathtaking advances of the industrial and social revolutions taking place in Europe. At seventeen, Ada met eccentric inventor Charles Babbage, a kindred spirit. Their ensuing collaborations resulted in ideas and concepts that presaged computer programming by almost two hundred years, and Ada Lovelace is now recognized as a pioneer and prophet of the information age. Award-winning author Emily Arnold McCully opens the window on a peculiar and singular intellect, shaped — and hampered — by history, social norms, and family dysfunction. The result is a portrait that is at once remarkable and fascinating, tragic and triumphant.

A Sunday Times Book of the Year Shortlisted for The Pol Roger Duff Cooper Prize 'This magnificent, highly readable double biography...brings these two driven, complicated women vividly to life' The Financial Times 'A gripping saga of a double-biography' Daily Mail 'A masterful portrait' The Times 'Vastly enjoyable' Literary Review 'Deeply absorbing and meticulously researched' The Oldie In 1815, the clever, courted and cherished Annabella Milbanke married the notorious and brilliant Lord Byron. Just one year later, she fled, taking with her their baby daughter, the future Ada Lovelace. Byron himself escaped into exile and died as a revolutionary hero in 1824, aged 36. The one thing he had asked his wife to do was to make sure that their daughter never became a poet. Ada didn't. Brought up by a mother who became one of the most progressive reformers of Victorian England, Byron's little girl was introduced to mathematics as a means of calming her wild spirits. Educated by some of the most learned minds in England, she combined that scholarly discipline with a rebellious heart and a visionary imagination. As a child invalid, Ada dreamed of building a steam-driven flying horse. As an exuberant and boldly unconventional young woman, she amplified her explanations of Charles Babbage's unbuilt calculating engine to predict, as nobody would do for another century, the dawn today of our modern computer age. When Ada died - like her father, she was only 36 - great things seemed still to lie ahead for her as a passionate astronomer. Even while mired in debt from gambling and crippled by cancer, she was frenetically employing Faraday's experiments with light refraction to explore the analysis of distant stars. Drawing on fascinating new material, Seymour reveals the ways in which Byron, long after his death, continued to shape the lives and reputations both of his wife and his daughter. During her life, Lady Byron was praised as a paragon of virtue; within ten years of her death, she was vilified as a disgrace to her sex. Well over a hundred years later, Annabella Milbanke is still perceived as a prudish wife and cruelly controlling mother. But her hidden devotion to Byron and her tender ambitions for his mercurial, brilliant daughter reveal a deeply complex but unsuspectedly sympathetic personality. Miranda Seymour has written a masterful portrait of two remarkable women, revealing how two turbulent lives were often governed and always haunted by the dangerously enchanting, quicksilver spirit of that extraordinary father whom Ada never knew.

Follows the life of Ida Tarbell, the nineteenth-century author/journalist whose articles on the corrupt practices of John D. Rockefeller and Standard Oil Company resulted in legislation against trusts.

“[Ada Lovelace], like Steve Jobs, stands at the intersection of arts and technology.”—Walter Isaacson, author of *The Innovators* Over 150 years after her death, a widely-used scientific computer program was named “Ada,” after Ada Lovelace, the only legitimate daughter of the eighteenth century’s version of a rock star, Lord Byron. Why? Because, after computer pioneers such as Alan Turing began to rediscover her, it slowly became apparent that she had been a key but overlooked figure in the invention of the computer. In *Ada Lovelace*, James Essinger makes the case that the computer age could have started two centuries ago if Lovelace’s contemporaries had recognized her research and fully grasped its implications. It’s a remarkable tale, starting

with the outrageous behavior of her father, which made Ada instantly famous upon birth. Ada would go on to overcome numerous obstacles to obtain a level of education typically forbidden to women of her day. She would eventually join forces with Charles Babbage, generally credited with inventing the computer, although as Essinger makes clear, Babbage couldn't have done it without Lovelace. Indeed, Lovelace wrote what is today considered the world's first computer program—despite opposition that the principles of science were “beyond the strength of a woman's physical power of application.” Based on ten years of research and filled with fascinating characters and observations of the period, not to mention numerous illustrations, Essinger tells Ada's fascinating story in unprecedented detail to absorbing and inspiring effect.

Maria Mitchell and the Sexing of Science

Ada, the Enchantress of Numbers

Enchantress of Numbers

Learning the World

Mechanism of the Heavens

The First Computer Programmer

The (Mostly) True Story of the First Computer

Humanity has spread to every star within 500 light-years of its half-forgotten origin, coloring the sky with a haze of habitats. Societies rise and fall. Incautious experiments burn fast and fade. On the fringes, less modified humans get on with the job of settling a universe that has, so far, been empty of intelligent life. The ancient starship *But the Sky, My Lady! The Sky!* is entering orbit around a promising new system after a four hundred year journey. For its long-lived inhabitants, the centuries have been busy. Now a younger generation is eager to settle the system. The ship is a seed-pod ready to burst. Then they detect curious electromagnetic emissions from the system's Earth-like world. As the nature of the signals becomes clear, the choices facing the humans become stark. On Ground, second world from the sun, a young astronomer searches for his system's outermost planet. A moving point of light thrills, then disappoints him. It's only a comet. His physicist colleague Orro takes time off from trying to invent a flying-machine to calculate the comet's trajectory. Something is very odd about that comet's path. They are not the only ones for whom the world has changed. "We are not living in the universe we thought we lived in yesterday. We have to start learning the world all over again." At the Publisher's request, this title is being sold without Digital Rights Management Software (DRM) applied.

"A fascinating look at Ada Lovelace, the pioneering computer programmer and the daughter of the poet Lord Byron." --

It is familiar knowledge that the earth which we inhabit is a globe of somewhat less than 8000 miles in diameter, being one of a series of eleven which revolve at different distances around the sun, and some of which have satellites in like manner revolving around them. The sun, planets, and satellites, with the less intelligible orbs termed comets, are comprehensively called the solar system, and if we take as the uttermost bounds of this system the orbit of Uranus (though the comets actually have a wider range), we shall find that it occupies a portion of space not less than three thousand six hundred millions of miles in extent. The mind fails to form an exact notion of a portion of space so immense; but some faint idea of it may be obtained from the fact, that, if the swiftest race-horse ever known had begun to traverse it, at full speed, at the time of the birth of Moses, he would only as yet have accomplished half his journey. It has long been concluded amongst astronomers, that the stars, though they only appear to our eyes as brilliant points, are all to be considered as suns, representing so many solar systems, each bearing a general resemblance to our own. The stars have a brilliancy and apparent magnitude which we may safely presume to be in proportion to their actual size and the distance at which they are placed from us. Attempts have been made to ascertain the distance of some of the stars by calculations founded on parallax, it being previously understood that, if a parallax of so much as one second, or the 3600th of a degree, could be ascertained in any one instance, the distance might be assumed in that instance as not less than 19,200 millions of miles! In the case of the most brilliant star, Sirius, even this minute parallax could not be found; from which of course it was to be inferred that the distance of that star is something beyond the vast distance which has been stated. In some others, on which the experiment has been tried, no sensible parallax could be detected; from which the same inference was to be made in their case. But a sensible parallax of about one second has been ascertained in the case of the double star, $\alpha \alpha$, of the constellation of the Centaur, and one of the third of that amount for the double star, 61 Cygni; which gave reason to presume that the distance of the former might be about twenty thousand millions of miles, and the latter of much greater amount. If we suppose that similar intervals exist between all the stars, we shall readily see that the space occupied by even the comparatively small number visible to the naked eye, must be vast beyond all powers of conception.

A complete and accessible history of computer science, beginning with Charles Babbage in 1819.

A Selection from the Letters of Lord Byron's Daughter and Her Description of the First Computer Programming Pioneer Ada Lovelace

Ada Lovelace: Bride of Science

My First Ada Lovelace

Ada and the Number-Crunching Machine

A Female Genius

In Byron's Wake

New York Times bestselling author Jennifer Chiaverini illuminates the life of Ada Byron King, Countess of Lovelace—Lord Byron's daughter and the world's first computer programmer. The only legitimate child of Lord Byron, the most brilliant, revered, and scandalous of the Romantic poets, Ada was destined for fame long before her birth. But her mathematician mother, estranged from Ada's infamous and destructively passionate father, is determined to save her only child from her perilous Byron heritage. Banishing fairy tales and make-believe from the nursery, Ada's mother provides her daughter with a rigorous education grounded in mathematics and science. Any troubling spark of imagination—or worse yet, passion or poetry—is promptly extinguished. Or so her mother believes. When Ada is introduced into London society as a highly eligible young heiress, she at last discovers the intellectual and social circles she has craved all her life. Little does she realize how her exciting new friendship with Charles Babbage—the brilliant, charming, and occasionally curmudgeonly inventor of an extraordinary machine, the Difference Engine—will define her destiny. *Enchantress of Numbers* unveils the passions, dreams, and insatiable thirst for knowledge of a largely unheralded pioneer in computing—a young woman who stepped out of her father's shadow to achieve her own laurels and champion the new technology that would shape the future.

Ada Lovelace (1815–1852) was the daughter of Lord Byron, a poet, and Anna Isabella Milbanke, a mathematician. Her parents separated when she was young, and her mother insisted on a logic-focused education, rejecting Byron's "mad" love of poetry. But Ada remained fascinated with her father and considered mathematics "poetical science." Via her friendship with inventor Charles Babbage, she became involved in "programming" his Analytical Engine, a precursor to the computer, thus becoming the world's first computer programmer. This picture book biography of Ada Lovelace is a compelling portrait of a woman who saw the potential for numbers to make art.

Ada, Countess of Lovelace (1815-1852), daughter of romantic poet Lord Byron and his highly educated wife, Anne Isabella, is sometimes called the world's first computer programmer and has become an icon for women in technology. But how did a young woman in the nineteenth century, without access to formal school or university education, acquire the knowledge and expertise to become a pioneer of computer science? Although an unusual pursuit for women at the time, Ada Lovelace studied science and mathematics from a young age. This book uses previously unpublished archival material to explore her precocious childhood, from her ideas for a steam-powered flying horse to penetrating questions about the science of rainbows. A remarkable correspondence course with the eminent mathematician Augustus De Morgan shows her developing into a gifted, perceptive and knowledgeable mathematician. Active in Victorian London's social and scientific elite alongside Mary Somerville, Michael Faraday and Charles Dickens, Ada Lovelace became fascinated by the computing machines devised by Charles Babbage. The table of mathematical formulae sometimes called the 'first programme' occurs in her paper about his most ambitious invention, his unbuilt 'Analytical Engine'. Ada Lovelace died at just thirty-six, but her paper still strikes a chord to this day, with clear explanations of the principles of computing, and broader ideas on computer music and artificial intelligence now realised in modern digital computers. Featuring images of the 'first programme' and Lovelace's correspondence, alongside mathematical models, and contemporary illustrations, this book shows how Ada Lovelace, with astonishing prescience, explored key mathematical questions to understand the principles behind modern computing.

A fun and feminist look at forgotten women in science, technology, and beyond, from the bestselling author of *THE FANGIRL'S GUIDE TO THE GALAXY* You may think you know women's history pretty well. But have you ever heard of. . . Alice Ball, the chemist who developed an effective treatment for leprosy—only to have the credit taken by a man? · Mary Sherman Morgan, the rocket scientist whose liquid fuel compounds blasted the first U.S. satellite into orbit? · Huang Daopo, the inventor whose weaving technology revolutionized textile production in China—centuries before the cotton gin? Smart women have always been able to achieve amazing things, even when the odds were stacked against them. In *Wonder Women*, author Sam Maggs tells the stories of the brilliant, brainy, and totally rad women in history who broke barriers as scientists, engineers, mathematicians, adventurers, and inventors. Plus, interviews with real-life women in STEM careers, an extensive bibliography, and a guide to women-centric science and technology organizations—all to show the many ways the geeky girls of today can help to build the future. Table of Contents: Women of Science Women of Medicine Women of Espionage Women of Innovation Women of Adventure

Ada's Ideas

The Thrilling Adventures of Lovelace and Babbage

The Calculating Passion of Ada Byron

Ada

Who Says Women Can't Be Computer Programmers?

Ada, Countess of Lovelace

Ada and the Engine

Traces the life of Ada Lovelace, Lord Byron's daughter, describes her mathematical education, and assesses her contributions to computer science

Toole did research for more than eight years, burying herself in British archives and libraries to narrate and edit this extraordinary collection of letters written by Ada Lovelace. Not only do they outline Ada's ingenuity for the sciences, but they also enlighten us on all aspects of Lady Lovelace's multidimensional life: her passionate desire to flourish in a "man's world," her battle with drug addiction and chronic sickness, and her efforts as a mother and wife. Lovelace also had a reputation as a wild gambler and a lover. Ada was one of the first to write programs of instructions for Babbage's Analytical Engines, the famous precursors to the modern digital computer. Ada's letters are some of the classic founding documents of cybernetics and computer science, written nearly a century before ENIAC.

From the world of *Good Night Stories for Rebel Girls* comes a story based on the exciting adventures of Ada Lovelace: one of the world's first computer programmers. Growing up in nineteenth century London, England, Ada is curious about absolutely everything. She is obsessed with machines and with creatures that fly. She even designs her own flying laboratory!

According to her mother, Ada is a bit too wild, so she encourages Ada to study math. At first Ada thinks: Bleh! Who can get excited about a subject without pictures? But she soon falls in love with it. One day she encounters a mysterious machine, and from that moment forward Ada imagines a future full of possibility—one that will eventually inspire the digital age nearly two hundred years later. *Ada Lovelace Cracks the Code* is the story of a pioneer in the computer sciences, and a testament to women's invaluable contributions to STEM throughout history. Includes additional text on Ada Lovelace's lasting legacy, as well as educational activities designed to teach simple coding and mathematical concepts.

As the British Industrial Revolution dawns, young Ada Byron Lovelace (daughter of the flamboyant and notorious Lord Byron) sees the boundless creative potential in the "analytic engines" of her friend and soul mate Charles Babbage, inventor of the first mechanical computer. Ada envisions a whole new world where art and information converge—a world she might not live to see. A music-laced story of love, friendship, and the edgiest dreams of the future. Jane Austen meets Steve Jobs in this poignant pre-tech romance heralding the computer age.

Poetical Science

Everything You Need to Know About the Drugs We Take and Why We Get High

An Astronomer Among the American Romantics

A Scientific Romance

A Life and a Legacy

I, Ada

Byron's Legitimate Daughter

Through an examination of the expressive arts of needlework, painting, and writing, *Pens and Needles* offers insights into women's lives and, in its final chapters, into literary texts such as Shakespeare's *Othello* and *Cymbeline* and Mary Sidney Wroth's *Urania*.

New, in the *My First Little People, Big Dreams* series: Introduce your littlest one to the world's first computer programmer, Ada Lovelace. Told in simple sentences, this young reader edition of the best-selling series is perfect to read out loud to little dreamers. This empowering series celebrates the important life stories of wonderful women of the world – and is now available in a board format for little hands! These books make the lives of these role models accessible for the youngest children, providing a powerful message to inspire the next generation of outstanding people who will change the world!

In *The Thrilling Adventures of Lovelace and Babbage* Sydney Padua transforms one of the most compelling scientific collaborations into a hilarious set of adventures. *The Thrilling Adventures of Lovelace and Babbage* is a unique take on the unrealized invention of the computer in the 1830s by the eccentric polymath Charles Babbage and his accomplice, the daughter of Lord Byron, Ada, Countess of Lovelace. When Ada translated her friend Babbage's plans for the "Difference Engine," her lengthy footnotes contained the first appearance of the general computing theory—one hundred years before an actual computer was built. Sadly, Lovelace died of cancer a few years after publishing the paper, and Babbage never built any of his machines. But now Sydney Padua gives us an alternate reality in which Lovelace and Babbage do build the Difference Engine, and then use it to do battle with the American banking system, the publishing industry and their own fears that their project will lose funding -- all "for the sake of both London and science". Sydney Padua is a graphic artist and animator. Her visual effects work includes both hand-drawn and computer-generated and appears in such films as *The Iron Giant*, *Clash of the Titans*, and *John Carter*. Her webcomic *The Thrilling Adventures of Lovelace and Babbage* has been featured on the BBC's *Techlab*, and in *The Economist*, *The Times*, and *Wired UK*. She is a Canadian living in London.

Ada Byron, Lady Lovelace, was one of the first to write programs for, and predict the impact of, Charles Babbage's Analytical Engine in 1843. Beautiful and charming, she was often characterized as "mad and bad" as was her illustrious father. This e-book edition, *Ada, the Enchantress of Numbers: Poetical Science*, emphasizes Ada's unique talent of integrating imagination, poetry and science. This edition includes all of Ada's fascinating letters to Charles Babbage, 55 pictures, and sidebars that encourages the reader to follow Ada's pathway to the 21st century. *The Woman Who Challenged Big Business - and Won!*

25 Innovators, Inventors, and Trailblazers Who Changed History

How Ada Lovelace Lord Byron's Daughter, Started the Computer Age

ADA Unseen

Dreaming in Code: Ada Byron Lovelace, Computer Pioneer

Wonder Women

A picture book biography of Ada Lovelace, the woman recognized today as history's first computer programmer—she imagined them 100 years before they existed! In the early nineteenth century lived Ada Byron: a young girl with a wild and wonderful imagination. The daughter of internationally acclaimed poet Lord Byron, Ada was tutored in science and mathematics from a very early age. But Ada's imagination was never meant to be tamed and, armed with the fundamentals of math and engineering, she came into her own as a woman of ideas—equal parts mathematician and philosopher. From her whimsical beginnings as a gifted child to her most sophisticated notes on Charles Babbage's Analytical Engine, this book celebrates the woman recognized today as the first computer programmer. This title has Common Core connections. Christy Ottaviano Books

New England blossomed in the nineteenth century, producing a crop of distinctively American writers along with distinguished philosophers and jurists, abolitionists and scholars. A few of the female stars of this era—Emily Dickinson, Margaret Fuller, and Susan B. Anthony, for instance—are still appreciated, but there are a number of intellectual women whose crucial roles in the philosophical, social, and scientific debates that roiled the era have not been fully examined. Among them is the astronomer Maria Mitchell. She was raised in isolated but cosmopolitan Nantucket, a place brimming with enthusiasm for intellectual culture and hosting the luminaries of the day, from Ralph Waldo Emerson to Sojourner Truth. Like many island girls, she was encouraged to study the stars. Given the relative dearth of women scientists today, most of us assume that science has always been a masculine domain. But as Renée Bergland reminds us, science and humanities were not seen as separate spheres in the nineteenth century; indeed, before the Civil War, women flourished in science and mathematics, disciplines that were considered less politically threatening and less profitable than the humanities. Mitchell apprenticed with her father, an amateur astronomer; taught herself the higher math of the day; and for years regularly "swept" the clear Nantucket night sky with the telescope in her rooftop observatory. In 1847, thanks to these diligent sweeps, Mitchell discovered a comet and was catapulted to international fame. Within a few years she was one of America's first professional astronomers; as "computer of Venus"—a sort of human calculator—for the U.S. Navy's Nautical Almanac, she calculated the planet's changing position. After an intellectual tour of Europe that included a winter in Rome with Sophia and Nathaniel Hawthorne, Mitchell was invited to join the founding faculty at Vassar College, where she spent her later years mentoring the next generation of women astronomers. Tragically, opportunities for her students dried up over the next few decades as the increasingly male scientific establishment began to close ranks. Mitchell protested this cultural shift in vain. "The woman who has peculiar gifts has a definite line marked out for her," she wrote, "and the call from God to do his work in the field of scientific investigation may be as imperative as that which calls the missionary into the moral field or the mother into the family . . . The question whether women have the capacity for original investigation in science is simply idle until equal opportunity is given them." In this compulsively readable biography, Renée Bergland chronicles the ideological, academic, and economic changes that led to the original sexing of science—now so familiar that most of us have never known it any other way. "The best thing in its line since Dava Sobel's *Longitude*. Maria Mitchell and the Sexing of Science tells a great, if too little known, story of an intellectual woman in 19th century New England. And it is beautifully told: I simply could not put it down. Anyone who cares about women's education in America should read this compelling and indispensable book." —Robert D. Richardson, author of *Henry Thoreau: A Life of the Mind*, *Emerson: The Mind on Fire*, and *William James: In the Maelstrom of American Modernism* "Renée Bergland recounts the story of

Maria Mitchell's life and work in glorious and careful detail. One feels and hears the sounds of Mitchell's native Nantucket, her adopted Vassar, and comes to understand how one of the 'gentler sex' advanced astronomy in her day." —Londa Schiebinger, author of *Has Feminism Changed Science?*

'Essential' Adam Rutherford, bestselling author of *How to Argue With a Racist* 'In an area where factual accuracy is often rejected in favour of moralising or panicking this book is a vitally useful and frequently fascinating' Robin Ince _____ *Drugs*. We've all done them. Whether it's a cup of coffee or a glass of wine, a cigarette or a sleeping pill. But how well do we understand the effects of the drugs we take - legal or illegal? *Say Why to Drugs* investigates the science behind recreational drugs- debunking common myths and misconceptions, as well as containing the most recent scientific research. Looking at a range of drugs, this book provides a clear understanding of how drugs work and what they're really doing to your mind and body. Along the way you will find out why ketamine is on the WHO's list of essential medicines, why some researchers hope MDMA could treat PTSD, and much more. Enlightening, entertaining, and thought-provoking, *Say Why to Drugs* is a compelling read that will surprise and educate proponents on both sides of the drugs debate. _____ A definitive and authoritative guide to drugs and why we get high from the creator of the top-rated podcast, *Say Why to Drugs*.

From the world of *Good Night Stories for Rebel Girls* comes a story based on the life of *Madam C.J. Walker: America's first female self-made millionaire*. Sarah is the first person in her family who wasn't born into slavery in Delta, Louisiana. But being free doesn't mean that Sarah doesn't have to work. She cooks, she cleans, she picks cotton, she does laundry, and she babysits. And when she works, she wraps up her hair. One day, Sarah's hair starts to fall out! It's itchy, crunchy, patchy, and won't grow. Instead of giving up, Sarah searches for the right products. And then she invents something better than any shampoo or hair oil she's used before. Her hair grows and grows! That's when she decides to rebrand herself as "Madam C.J. Walker," and begins her business empire. *Madam C.J. Walker Builds a Business* is the story of a leader in the hair care industry, but it's also an inspiring tale about the importance of empowering women to become economically independent. Includes additional text on Madam C.J. Walker's lasting legacy, as well as educational activities designed to teach entrepreneurship.

Ada's Algorithm

Ida M. Tarbell

Ada Lovelace

The Story of Ada Lovelace, the World's First Computer Programmer

Ada Lovelace, Poet of Science

Lady Byron and Her Daughters

Offers an illustrated telling of the story of Ada Byron Lovelace, from her early creative fascination with mathematics and science and her devastating bout with measles, to the ground-breaking algorithm she wrote for Charles Babbage's analytical engine.