

BEST STEM BOOKS 2024

STEM books offer endless opportunities for engaged learning. They invite students to see the world differently and to think in new ways about what they observe.

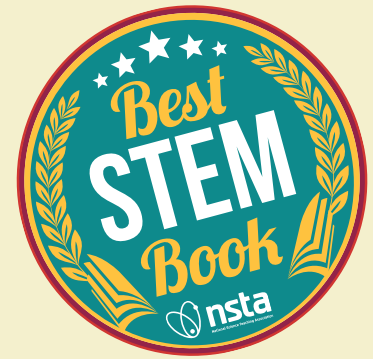
We have chosen titles that provoke readers to examine the “thinking stance” of characters—not simply to look at actions and results.

Best STEM Books winners explore problems and possible solutions in the scientific world and, where applicable, in the lives of the protagonists. Instead of focusing on specific content, the Best STEM Books emphasize real-world issues that cross disciplinary boundaries.

Teachers can use these books to foster and model “minds-on” work. Parents, grandparents, and other caregivers can involve even the very youngest children in the process of STEM thinking.

How do we prepare 21st-century kids for challenges and jobs that we at present cannot even describe? The Best STEM Books help by celebrating convergent and divergent thinking, analysis and creativity, persistence, and the sheer joy of figuring things out.





ABOUT THE REVIEWS

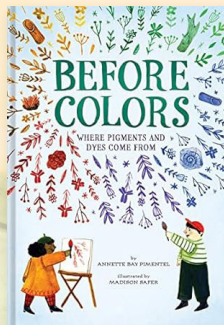
In addition to standard publishing information, the reviews indicate the following:

1. International Standard Book Numbers (ISBN) are included for trade editions.
2. The prices are current as of January 2024.
3. Reading levels (K–2, 3–5, 6–8, and 9–12) are provided by the reviewers. They are intended as guidelines and are not meant to limit the potential use of titles.
4. The reviewer’s initials follow each description (see Table of Contents).

Before Colors: Where Pigments and Dyes Come From

ANETTE BAY PIMENTEL. Illustrated by Madison Safer. Abrams Books for Young Readers. 88 pp. ISBN 9781419757068, \$24.99. (3–5, 6–8)

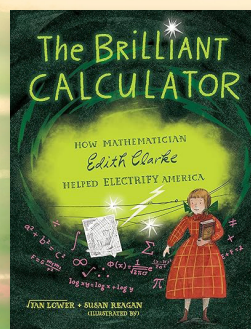
Many artists use items from the natural world including plants, mineral resources, and animal resources to create pigments and dyes. Find out how we can use resources familiar to us to create colors too. Activities to try at home, quotation sources, and selected sources. *(BL)*



The Brilliant Calculator: How Mathematician Edith Clarke Helped Electrify America

JAN LOWER. Illustrated by Susan Reagan. Calkins Creek / Astra Books for Young Readers. 40pp. ISBN 9781662680069, \$11.99. (3–5)

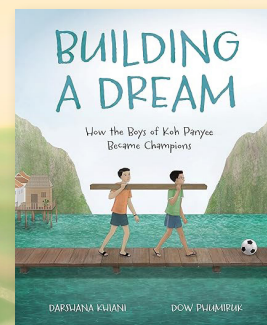
Explore the remarkable journey of Edith Clarke from a math-loving child to America’s first female electrical engineer. This captivating narrative unveils her genius, showcased through the groundbreaking calculator that played a pivotal role in illuminating the nation. A tribute to resilience, innovation, and transformative contributions in STEM history. Author’s Note; Timeline; Glossary; List of Women Mathematicians, Engineers, and Inventors; and Bibliography. *(AF)*



Building a Dream: How the Boys of Koh Panyee Became Champions

DARSHANA KHIANI. Illustrated by Dow Phumiruk. Eerdmans Books for Young Readers. 40pp. ISBN 9780802855473, \$18.99. (3–5)

Experience the remarkable story of young innovators from Koh Panyee as they demonstrate resilience and problem-solving in their pursuit of a soccer field. Despite limitations, they apply creativity, ingenuity, and teamwork to overcome obstacles, embrace challenges, and build a field no one was ready for. This story will inspire future problem-solvers to forge their own paths against all odds. Author’s and illustrator’s notes. *(JP)*





BEST STEM TRADE BOOKS CRITERIA AND RUBRIC

OVERVIEW

STEM (Science, Technology, Engineering, and Mathematics) is an integrated and creative approach to discovering and applying knowledge about our world to solve problems which utilizes one, or more of the content areas. Trade books that deliver background and model the practices of STEM provide context and inspiration to readers. Recognizing the best publications in this field can help guide their use and provide direction to publishers.

CRITERIA

The best STEM trade books must invite STEM-like thinking by:

- Modeling real-world innovation
- Embracing real-world design, invention and innovation
- Connecting with authentic experiences
- Showing assimilation of new ideas
- Illustrating teamwork, diverse skills, creativity, and cooperation
- Inviting divergent thinking and doing
- Integrating interdisciplinary and creative approaches
- Exploring multiple solutions to problems
- Addressing connections between STEM disciplines
- Exploring Engineering Habits of Mind
 - Systems thinking,
 - Creativity
 - Optimisation
 - Collaboration
 - Communication
 - Ethical considerations
 - Critical thinking

The best STEM trade books might represent the practices of science and engineering by:

- Asking questions, solving problems, designing and redesigning
- Integrating STEM disciplines
- Showing the progressive changes that characterize invention and/or engineering by:
 - Demonstrating designing or redesigning, improving, building, or repairing a product or idea
 - Showing the process of working through trial and error
 - Progressively developing better engineering solutions
 - Analyzing efforts and makes necessary modifications along the way
 - Illustrates at points, failure might happen and that is acceptable
 - providing reflection and learning occurs.

Ellen Takes Flight: The Life of Astronaut Ellen Ochoa

DOREEN RAPPAPORT. Illustrated by Oliver Dominguez. Little, Brown Books for Young Readers. 48pp. ISBN 139780759554948, \$19.39. (3-5)

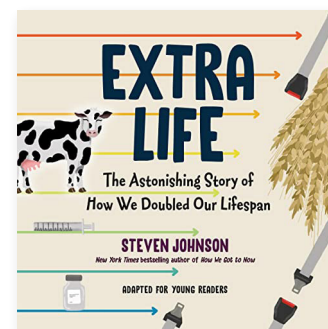
Come read about the living legend, Ellen Ochoa, the only woman astronaut on Discovery STS-56 Mission, and the first Latina astronaut to go to space! Explore the adventures of a life-long learner, who also excels in music, electrical engineering, researching piloting, mothering, directing as the first Latinx director of NASA's Johnson Space Center! Author and illustrator's notes. (TH)



Extra Life: The Astonishing Story of How We Doubled Our Lifespan [Young Readers Adaptation]

STEVEN JOHNSON. Viking Books for Young Readers / Penguin Young Readers. 128 pp. ISBN 9780593351499, \$18.99. (6-8, 9-12)

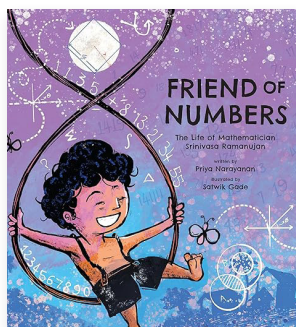
Humans are living longer than ever before. This young reader's adaptation of the book explores the advances in medicine, technology, and science that have helped humans achieve this feat. The advances of things such as vaccines to seat belts are explored scientifically and historically. Recommended Readings. Notes. Bibliography, Index. (CAR)



Friend of Numbers: The Life of Mathematician Srinivasa Ramanujan

PRIYA NARAYANAN. Illustrated by Satwik Gade. Eerdmans Books for Young Readers. 40pp. ISBN 9780802856081, \$17.99. (3-5)

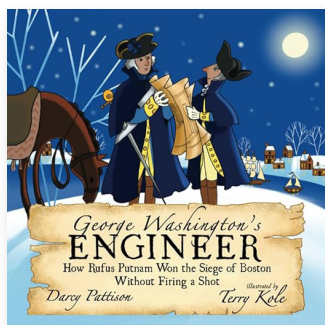
The biography of mathematician Srinivasa Ramanujan's exploration of number theory and mathematical concepts. Examples of puzzles and problems that Ramanujan explored are incorporated into the narration of his interesting life. Author's note, Endnotes, Glossary. (CAR)



George Washington's Engineer: How Rufus Putnam Won the Siege of Boston Without Firing a Shot

DARCY PATTISON. Illustrated by Terry Kole. Mims House. 32pp. ISBN 9781629442204, \$11.99. (3-5)

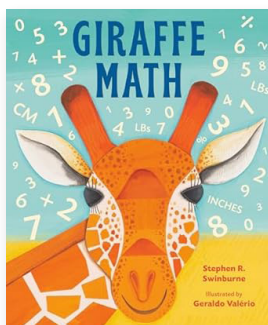
George Washington tasked Rufus Putnam to take control of the high ground in Boston in January. With frozen ground and the need to construct a wall, engineering, and problem-solving strategies were the winning combination that helped win this historic battle during the Revolutionary War. Endnotes. (CAR)



Giraffe Math

STEPHEN R. SWINBURNE. Illustrated by Geraldo Valerio. Little, Brown Books for Young Readers. 40pp. ISBN 9780316346771, \$18.99. (K-2)

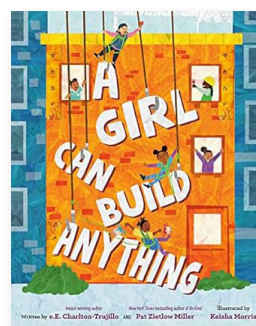
The notice and wonder begins on the inside cover of the book when I see what appears to be the head of a giraffe on the top of a straight edge. Thinking about the geometrical shape of the giraffe's drinking stance making itself more vulnerable to predators. This book shouts nonstandard measurement, structure and function, scale and proportion, patterns and so much more! (KR)



A Girl Can Build Anything

E.E. CHARLTON-TRUJILLO AND PAT ZIETLOW MILLER. Illustrated by Keisha Morris. Viking Books for Young Readers / Penguin Young Readers. 32 pp. ISBN 9780593463741, \$18.99. (K-2)

This is an inspiring story for readers that shows how a young girl uses imagination and perseverance to build almost anything she dreams. She starts with a vision, a sketch, and a plan, then through trial, error, revision and improvement, new ideas are made. Finally, one day, the girl can build buildings, bridges, and towers; she can build anything! (RG)



ABOUT CBC AND NSTA

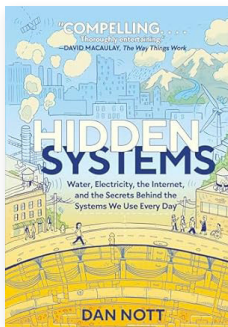
The Children's Book Council (CBC) is the nonprofit trade association for children's book publishers in North America, dedicated to supporting and informing the industry and fostering literacy. The CBC offers children's publishers the opportunity to work together on issues of importance to the industry at large, including educational programming, literacy advocacy, and collaborations with other national organizations. The anchor sponsor of Children's Book Week, the CBC is proud to partner with other national organizations on co-sponsored reading lists, educational programming, and literacy initiatives. For more information, visit www.cbcbooks.org.

The books that appear in these lists were chosen by a review panel made up of educators and other subject-area experts, all appointed by the National Science Teaching Association. NSTA and CBC have joined forces on developing this annual list since 1973, and over the years it has become the go-to resource for school librarians, science teachers, and parents eager to cultivate a love of science in young readers. Initially, the list was primarily targeted at grades K through 8. Beginning in 2002, it expanded to include high school. Down through the years, this effort has had but a single mission—to highlight the very best in science trade books for young audiences.

Hidden Systems: Water, Electricity, the Internet, and the Secrets Behind the Systems We Use Every Day

DAN NOTT. Random House Graphic / Random House Children's Books. 272pp. ISBN 9780593125366, \$17.99. (6-8, 9-12)

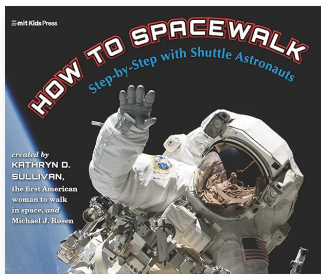
Learn about things we use daily but don't notice until they're absent with "Hidden Systems". This nonfiction graphic novel demystifies water, electricity, and the internet, offering a thoughtful journey through their past, present, and future. A socially conscious look at the intricate mechanisms that quietly shape our everyday lives. Bibliography. (AF)



How to Spacewalk: Step-by-Step with Shuttle Astronauts

KATHRYN D. Sullivan with Michael J. Rosen. Illustrated by Michael J. Rosen. MIT Kids Press / Candlewick Press. 48pp. ISBN 9771536 226218, \$19.99. (3-5)

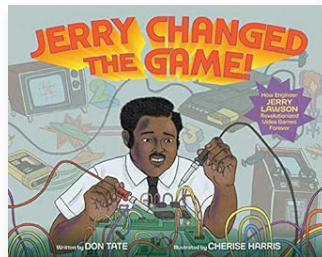
Have you wondered what it would be like to wear a 280-pound spacesuit? Kathryn D. Sullivan, the first American woman to walk in space, shares what it is like to wear a spacesuit, walk in zero gravity, and conduct experiments in space. She also discusses thoughtful insights of her experiences. (JCL)



Jerry Changed the Game: How Engineer Jerry Lawson Revolutionized Video Games Forever

DON TATE. Illustrated by Cherise Harris. Paula Wiseman Books / Simon & Schuster Children's Books. 40pp. ISBN 9781665919081, \$18.99. (K-2)

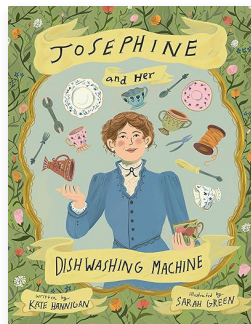
Jerry Lawson, a black engineer revolutionized the gaming industry. Examine his timeline and see how he came up with the idea and constructed a system that could use multiple cartridges instead of one. His innovation opened the door for all the systems used today. Author Note, Illustrator Note, Timeline, Glossary, Bibliography. (JCL)



Josephine and Her Dishwashing Machine

KATE HANNIGAN. Illustrated by Sarah Green. Calkins Creek / Astra Books for Young Readers. 40pp. ISBN 9781635926217, \$18.99. (3-5)

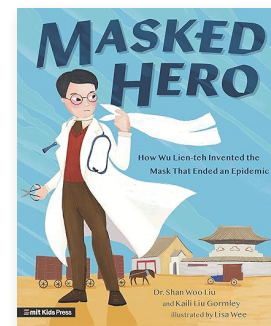
Josephine had a problem to solve, and she was determined to solve it! As a reader I was totally engaged, wanting to know what she would do next. Josephine, a woman inventor, engineer and entrepreneur persevered through many challenges during the creation of the dishwasher. Author's Note and a glossary of women inventors. (KR)

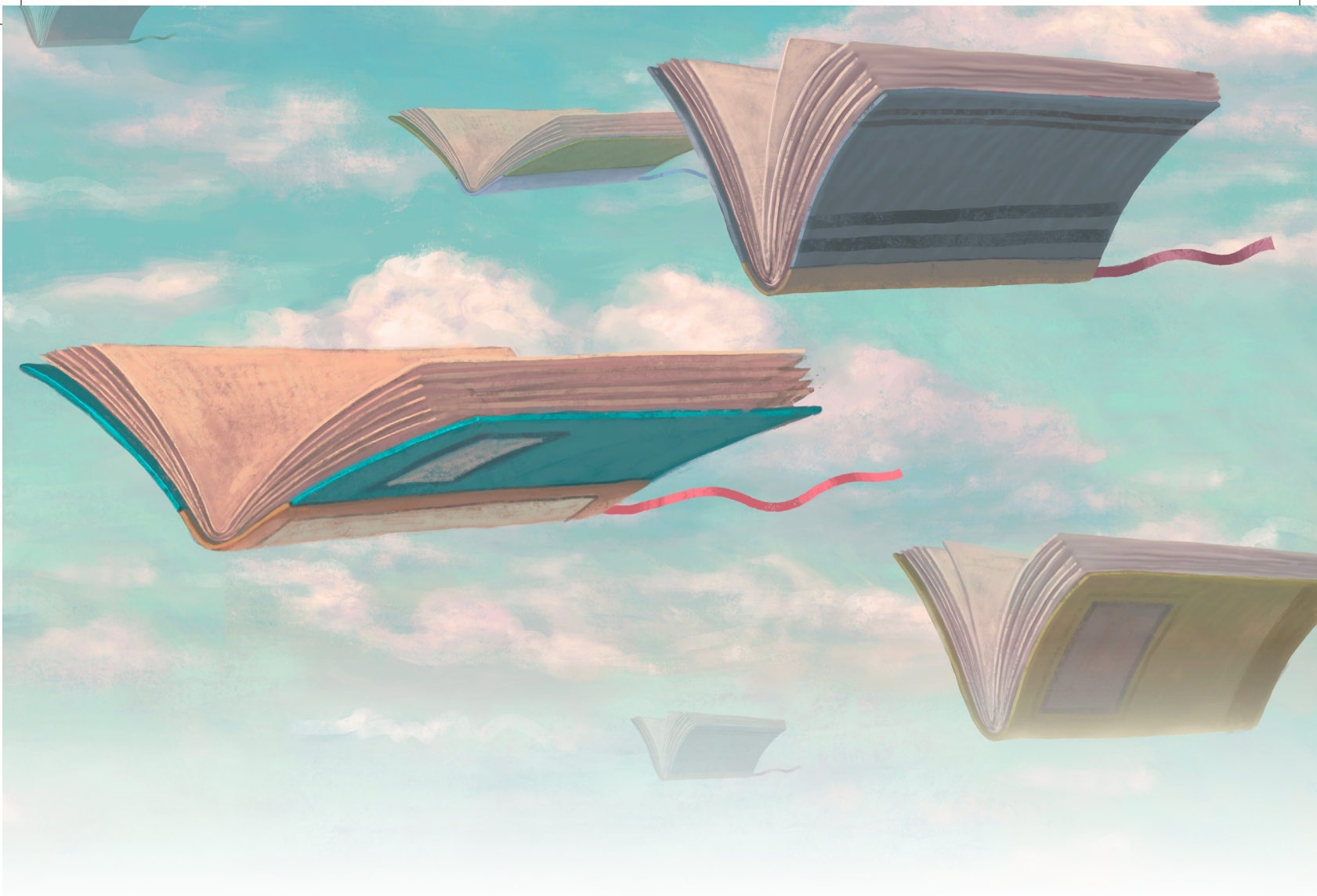


Masked Hero: How Wu Lien-teh Invented the Mask That Ended an Epidemic

SHAN WOO LIU. Illustrated by Lisa Wee. MIT Kids Press / Candlewick Press. 32pp. ISBN 9781536228984, \$18.99. (3-5)

Uncover the groundbreaking story of Dr. Wu Lien-teh's inventive genius, as told by Shan Woo Liu, his great-granddaughter. This STEM-driven narrative explores the inception of the N95 mask, a century ahead of its time. Explore Dr. Wu's scientific process combating the 1910 epidemic in this compelling account that not only celebrates his innovation but inspires the next generation of STEM enthusiasts to envision groundbreaking solutions for global health challenges. Timeline, notes & bibliography. (JP)

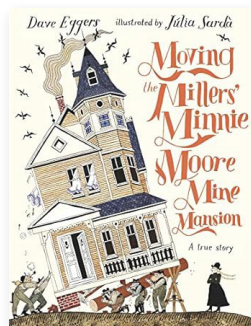




Moving the Millers' Minnie Moore Mine Mansion: A True Story

DAVE EGGERS. Illustrated by Júlia Sardà. Candlewick Press. 56pp. ISBN 9781536215885. \$19.99. (K-2, 3-5)

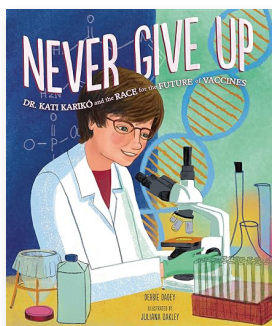
How fun is it to read what seems like a tall tale and then find out it is true?! See how through ingenuity Mrs. Miller can survive life's challenges using STEM-like thinking. The book is quirky, interesting, and cross curricular. (JCL)



Never Give up: Dr. Kati Kariko and the Race for the Future of Vaccines

DEBBIE DADEY. Illustrated by Juliana Oakley. Millbrook Press / Lerner Publishing Group. 40 pp. ISBN 9781728456331. \$21.99. (K-5)

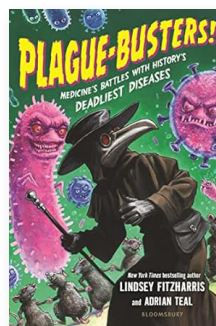
This biography of Dr. Kariko starts on her family farm in Hungary. The book then presents her as a scientist in the United States: The process, the vision, the hardship, and the perseverance of the development of the Covid vaccine. Timeline, author's notes, glossary, and source notes. (BL)



Plague-busters! Medicine's Battles with History's Deadliest Diseases

LINDSEY FITZHARRIS AND ADRIAN TEAL. Illustrated by Adrian Teal. Bloomsbury Children's Books. 176pp. ISBN 9781547606030. \$19.99. (3-5, 6-8)

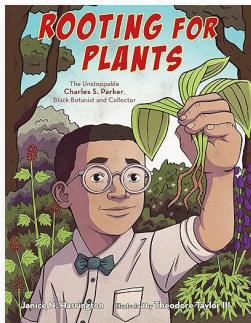
Journey through history to discover some of the world's deadliest diseases and the gruesome medical attempts to remedy them. This book is a fascinating read and will keep you engaged and informed through its detailed descriptions and comedic caricature images of medicine's battles with six deadly diseases. (RG)



Rooting for Plants: The Unstoppable Charles S. Parker, Black Botanist and Collector

JANICE N. HARRINGTON. Illustrated by Theodore Taylor III. Calkins Creek / Astra Books for Young Readers. 48pp. ISBN 9781662680199, \$18.99. (3-5)

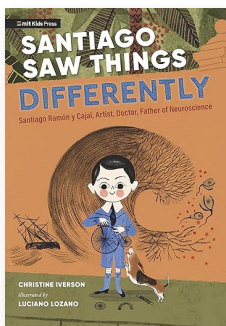
Multi-talented Charles S. Parker loved plants! He considered plants as treasures to be discovered, collected, studied, and preserved. He trekked over the world crossing jagged peaks, icy glaciers, thick forests, stinky and slimy salt lakes, and dry deserts gathering his treasures. Join Dr. Parker on his journeys as he discovers wondrous treasures, and gems in plain sight. Author and illustrator's notes. Timeline and glossary. (TH)



Santiago Saw Things Differently

CHRISTINE IVERSON. Illustrated by Luciano Lozano. MIT Kids Press / Candlewick Press. 40 pages. ISBN 9781536224535, \$18.99. (K-2, 3-5)

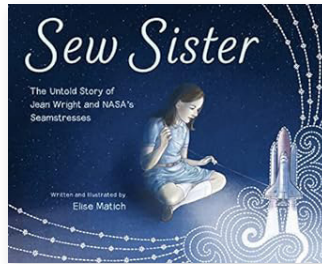
Santiago brought together his abilities as an artist and a doctor to identify neuronal patterns and become the Father of Neuroscience. His investigative tools included a pencil and a microscope. His observations and drawings helped establish a new perspective in the study of the nervous system. Anatomy of a Neuron, Life and Works, and Selected References. (WL)



Sew Sister: The Untold Story of Jean Wright and NASA's Seamstress

WRITTEN AND ILLUSTRATED BY ELISE MATICH. Tilbury House Publishers. 36 pages. ISBN 9780884489825, \$18.95. (K-2, 3-5)

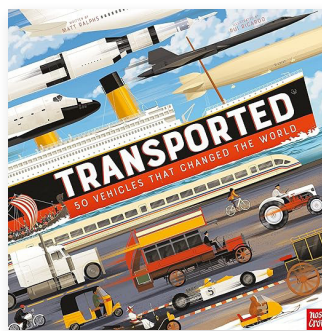
NASA's Sew Sisters crafted thermal blankets for the outside of the space shuttles to help protect the astronauts from the hazards of space. Discover the story of Jean Wright and how her craftsmanship, learning, teamwork, and space dreams came together in her unique NASA story. Author's notes, Glossary, Further Reading, and Acknowledgements. (WL)



Transported: 50 Vehicles That Changed the World

MATT RALPHS. Illustrated by Rui Ricardo. Nosy Crow. 112 pp. ISBN 979888770208, \$29.99. (3-5, 6-8)

Take a journey through history with "Transported: 50 Vehicles That Changed the World". This captivating book not only introduces essential vehicles but delves into their transformative impact on our world. Enhanced by "Facts and Stats" and stunning illustrations, it offers a rich exploration of these influential inventions. Glossary. (AF)



CALL FOR SUBMISSIONS

FOR 2025 BEST STEM BOOKS FOR STUDENTS K–12

ELIGIBILITY

- Titles should be for grades K–12.
- All titles must originate from a children’s publishing company or division and must be published (not simply distributed) by a publisher incorporated in the United States.
- Titles must be published in 2024.
- Titles originally published abroad are eligible only if they have a 2024 U.S. publication date; reprints or licensed editions of titles initially published in the United States before 2024 are not eligible.
- Original paperbacks are eligible; paperback reprints are not. If a book is published simultaneously in hardcover and paperback, either edition may be submitted. If both editions are submitted, they constitute separate entries.
- Revisions are eligible only if the book has been newly illustrated or if substantial text, constituting at least 25% of the book, has been changed or added.
- Math books are not eligible unless the mathematical principles are applied to scientific functions such as measuring for experiments, using statistical models for scientific research, and so on.
- Textbooks, workbooks, kits, experiment-only books, and activity books are not eligible.
- Spanish-language editions of titles published in English before 2024 are not acceptable. Spanish-language editions published simultaneously with English-language editions in 2024 are eligible.
- Fiction is eligible if the book has substantial science content.

NUMBER OF TITLES YOU MAY SUBMIT

Each participating publisher may submit an unlimited number of titles.

SUBMISSION GUIDELINES

Books should have value for both classroom studies and library collections supporting students’ work.

Full submission guidelines will be available throughout the month of April, 2024 at www.cbcbooks.org/curated-reading-lists.

FEES

There is no submission fee for CBC Regular and Affiliate Members. The fee is \$75 per title for Associate and Initiating Members and \$300 per title for non-members. All fees are non-refundable. Titles may not be substituted. There is no refund if a title is canceled or postponed.

