

Outstanding Science Trade Books for Students 2025

We invite you to explore this year's list of Outstanding Science Trade Books, which builds upon our 52-year history of identifying the very best in science books for children. In the award-winning titles below, you'll find not only traditional science content but also engineering and design. We hope you'll enjoy enhancing your own spirit of inquiry as you and the children in your life investigate science through the year's best trade books.

About the Reviews

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

1. International Standard Book Numbers (ISBN) are included for all available editions (trade, library, and paperback).
2. The prices are current as of January 2025.
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 Members of the Book Selection Panel).
5. The most relevant Next Generation Science standards are indicated by codes (see next page).



The Three Dimensions of the Framework

(from A Framework for K-12 Science Education, National Research Council, 2012)

SCIENTIFIC AND ENGINEERING PRACTICES

- SEP1:** Asking questions (for science) and defining problems (for engineering)
- SEP2:** Developing and using models
- SEP3:** Planning and carrying out investigations
- SEP4:** Analyzing and interpreting data
- SEP5:** Using mathematics and computational thinking
- SEP6:** Constructing explanations (for science) and designing solutions (for engineering)
- SEP7:** Engaging in argument from evidence
- SEP8:** Obtaining, evaluating, and communicating information

CROSSCUTTING CONCEPTS

- CCC1:** Patterns
- CCC2:** Cause and effect: Mechanism and explanation
- CCC3:** Scale, proportion, and quantity
- CCC4:** Systems and system models
- CCC5:** Energy and matter: Flows, cycles, and conservation
- CCC6:** Structure and function
- CCC7:** Stability and change

DISCIPLINARY CORE IDEAS

Physical Sciences

- PS1:** Matter and its interactions
- PS2:** Motion and stability: Forces and interactions
- PS3:** Energy
- PS4:** Waves and their applications in technologies for information transfer

Life Sciences

- LS1:** From molecules to organisms: Structures and processes
- LS2:** Ecosystems: Interactions, energy, and dynamics
- LS3:** Heredity: Inheritance and variation of traits
- LS4:** Biological evolution: Unity and diversity

Earth and Space Sciences

- ESS1:** Earth's place in the universe
- ESS2:** Earth's systems
- ESS3:** Earth and human activity

Engineering, Technology, and Applications of Science

- ETS1:** Engineering design
- ETS2:** Links among engineering, technology, science, and society

In keeping with the National Science Teachers Association's Strategic Goal 3 (Next Generation Science Standards and STEM), for this year's annotations, titles that have been awarded the Outstanding Science Trade Book award from NSTA/CBC will be aligned to the Scientific and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas from A Framework for K-12 Science Education, on which the NGSS is based.

All titles will be listed primarily by the prevailing Disciplinary Core Idea (DCI). This will allow teachers to quickly identify books that may be used with specific concepts.

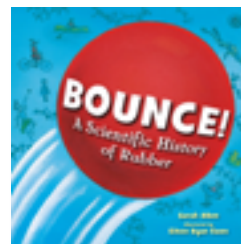
Titles will receive notations of secondary DCIs, Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs) at the end of each notation. Titles are not being listed primarily by SEPs and CCCs as these should be woven throughout all science concepts.

PS1: Matter And Its Interactions

Bounce!: A Scientific History of Rubber

SARAH ALBEE. Illustrated by Eileen Ryan Ewen. Charlesbridge Publishing. ISBN 9781623543792. \$18.99. (3-5, 6-8)

Ever wondered what makes rubber so stretchy and bouncy? Dive into the fascinating chemistry behind this flexible material and discover the unique properties that make it so useful! From erasers and tires to basketballs and boots, you will explore how rubber has bounced its way into countless everyday items. Author's Note, Timeline, Bibliography. (NWM) **SEP1, SEP2, CCC2**



PS4: Waves and Their Applications in Technologies for Information Transfer

How Do You See the World?

NOUREDDINE MELIKECHI. Illustrated by Michelle Simpson. Platypus Media / Science, Naturally!. ISBN 9781958629437. \$18.95. (3-5)

How does the eye work to help us interpret our world? Sometimes all the structures in our eyes work in perfect synchronicity, but sometimes there are glitches. How these glitches affect our sight and how eyeglasses can make corrections are explained. Glossary. (AMV) **CCC6**



Look

GABI SNYDER. Illustrated by Samantha Cotterill. Simon & Schuster Children's Publishing / Paula Wiseman Books. ISBN 9781665905404. \$18.99. (K-2)

The author invites the reader to make sense of the world by looking at clues found in patterns all around us. If we just "look," we will see different types of patterns in colors, sizes, or shapes. The shared experience will teach readers to look up, down, and all around, even inside our words. Definitions, Activities. (LB) **SEP1, SEP3, SEP4, CCC1**



LS1: From Molecules to Organisms: Structures and Processes

Arboretum: Welcome to the Museum

TONY KIRKHAM. Illustrated by Katie Scott. Candlewick Press / Big Picture Press. ISBN 9781536235012. \$37.99. (6-8)

Step into a stunning exploration of the plant world in *Arboretum*, a work that seamlessly blends breathtaking scientific botanical illustrations with a captivating narrative. The book takes readers on a global journey, showcasing the diverse and intricate world of trees, from the Boreal Forests of the North to the expansive savannas of the South. With each turn of the page, the rich, detailed illustrations illuminate the beauty and complexity of the plant kingdom, offering both an artistic and educational experience for readers. Map. Index. (JG) **CCC6, LS2, LS3, LS4**



Clever Crow

CHRIS BUTTERWORTH. Illustrated by Olivia Lomenech Gill. Candlewick Press. ISBN 9781536235425. \$18.99. (K-2)

Crows are crafty, playful, clever, and so much more! Learn more about the structures of a crow, the behavior of these birds, and some clever tricks they use to solve problems. Index. (LB) **SEP8, CCC6**



The Den That Octopus Built

RANDI SONENSHINE. Illustrated by Anne Hunter. Candlewick Press. ISBN 9781536226546. \$18.99. (K-2)

This book offers a glimpse into the world of the solitary and ingenious octopus. The octopus uses creative methods for hunting as she prepares for the biggest task of her life: motherhood. This book offers informative back matter, including an author's note, glossary and "octo-knowledge". (KKP) **CCC6, CCC7, LS2**



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 Teachers 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.

Owls: Who Gives a Hoot?

FRANCES BACKHOUSE. Orca Book Publishers. ISBN 9781459835290. \$24.65. (6-8)

This book explores owls and the important role they play in the ecosystem and our lives. Readers will explore 19 species that live in Canada and the United States. Readers will meet scientists, activists and young people who are working hard to keep these amazing creatures protected for years to come. (KKP) **CCC6, CCC7, LS2, LS3**



Sleepy: Surprising Ways Animals Snooze

JENNIFER WARD. Illustrated by Robin Page. Simon & Schuster Children's Publishing / Beach Lane Books. ISBN 9781665935104. \$18.99. (K-2, 3-5)

Snuggle up with this fascinating book and uncover the unique ways animals catch their zzz's! Did you know humpback whales sleep with one eye open, or that otters wrap themselves in kelp to avoid drifting away? From the surprising to the adorable, you will be amazed by what animals do when it is time to rest! Additional Facts, Websites, Articles. (NWM) **SEP1, SEP6, CCC2**



Super Swifts: Small Birds with Amazing Powers

JUSTIN ANDERSON. Illustrated by Clover Robin. Candlewick Press. ISBN 9781536231489. \$18.99. (K-2)

Learn about the remarkable "superpowers" of the tiny swift as you follow her incredible annual journey from central Africa to Europe. More About Swifts, Index. (ME) **SEP1, SEP6, CC1, CCC6, LS2, LS3**



LS2: Ecosystems: Interactions, Energy, and Dynamics

A Flicker of Hope: A Story of Migration

CYNTHIA HARMONY. Illustrated by Devon Holzwarth. Penguin Young Readers / Viking Books for Young Readers. ISBN 9780593525760. \$18.99. (K-2, 3-5)

This book tells parallel stories of the annual migration of monarch butterflies and migrant farmworkers between Mexico and the United States. The use of rich images and English/Spanish text highlights seasonal cycles in the natural world alongside human cycles. Author's Note, Glossary, Websites. (CF) **SEP6, CCC1, CCC2, CCC5**



One Day This Tree Will Fall

LESLIE BARNARD BOOTH. Illustrated by Stephanie Fizer Coleman. Simon & Schuster Children's Publishing / Margaret K. McElderry Books. ISBN 9781534496965. \$18.99. (K-2)

Beautifully illustrated and rich with descriptive language, this story describes the life cycle of one tree from seed to nurse log. Afterword provides more science. (AMV) **CCC5**



Over and Under the Wetland

KATE MESSNER. Art by Christopher Silas Neal. Chronicle Books. ISBN 9781797210872. \$18.99. (K-2)

An examination of a wetland's ecosystem. Follow a grandmother and her granddaughter as they visit a wetland sanctuary discovering the plants and animals that live "over and under the wetland". Author's Note, About the Animals and Plants, Further Reading. (MCS) **SEP8, CCC4, CCC5, LS4**



Pau: The Last Song of the Kaua'i 'o'o

TONY PIEDRA AND MACKENZIE JOY. Illustrated by Tony Piedra and Mackenzie Joy. Candlewick Press. ISBN 9781536219494. \$18.99. (K-2)

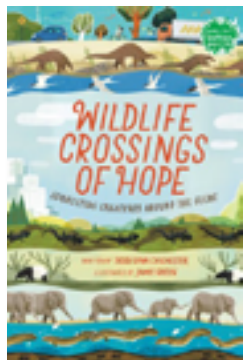
Beautifully illustrated picture book for early elementary students. Journey into the lost world of the Kaua'i 'o'o as the impact of increasing human inhabitants and an invasive species slowly led to their extinction and then all that was left were recordings of their long-lost songs. This book touches on key conservation topics. (KKP) **CCC5, CCC7, ESS3**



Wildlife Crossings of Hope: Connecting Creatures Around the Globe

TEDDI LYNN CHICHESTER. Illustrated by Jamie Green. Holiday House. ISBN 9780823453542. \$22.99. (6-8, 9-12)

From Australia's Mount Higginbottom Possum to Wyoming's pronghorn to Kenyan Bush Elephants – animals need to safely roam, breed, and feed. Human habitation has divided migration routes and living space for species across the globe. It is not enough to have reserves; they must be extensive and connected. This in-depth exploration of ecosystem fragmentation highlights efforts to “stitch the world back together” (p. 24). Source Notes, Index. (AH) **SEP6, CCC4, ESS3, ETS2**



A Window into the Ocean Twilight Zone: Twenty-Four Days of Science at Sea

MICHELLE CUSOLITO. Charlesbridge Publishing. ISBN 9781623543020. \$18.99. (6-8)

Embark on an exciting twenty-four-day journey aboard a research vessel, where you will dive into the thrilling world of ocean exploration! Join a team of dedicated scientists as they navigate the vast ocean, studying the mysterious depths of the twilight zone. With cutting-edge research technology at your fingertips, you'll experience the ins and outs of life at sea and discover what it truly means to be a scientist on a mission. Expedition Notes, Websites, Podcasts, Books, Articles, QR code for videos, Index. (NWM) **SEP1, SEP3, SEP4, SEP8, CCC4, CCC6**



About the Books and the Selection Process

The books that appear in this annotated bibliography selected as Outstanding Science Trade Books were published in 2024. They are intended primarily for grades K-12. They were selected by members of a book review panel appointed by the National Science Teachers Association (NSTA) and assembled in cooperation with the Children's Book Council (CBC). NSTA and CBC have cooperated on this bibliographic project since 1973.

The panel looks at both content and presentation. Selection is based generally on the following criteria:

- The book has substantial science content.
- Information is clear, accurate, and up-to-date.
- Theories and facts are clearly distinguished.
- Facts are not oversimplified to the point that the information is misleading.
- Generalizations are supported by facts, and significant facts are not omitted.
- Books are free of gender, ethnic, and socioeconomic bias.

The panel also uses rigorous selection guidelines relating to the presentation of material, including the following: logical presentation and a clear sequence of ideas; appropriate content level for the intended audience; compatible text and illustrations; illustrations that are accurate representations in size, color, and scale; appropriate trim size and format of the book for the subject and audience; and well-organized layout that advances the text. The panel also gives attention to the quality of binding, paper, reproduction, and the appropriateness of typeface. Each panel member reads all the books, but reviews reflect only the appraisal of the individual panelist whose initials appear at the end of each entry.

Publishers' names appear in abbreviated form; complete names and addresses are available from the CBC and in standard reference works such as Children's Books in Print. CBC's Member List is available at <https://www.cbcbooks.org/publishers/our-members/>.

Titles are arranged by subject category. Although some titles are appropriate for more than one category, the books have been placed where their usefulness in science education appears greatest. Panelists have also indicated the Next Generation Science Standard (see About the Reviews on page 1) to which the books relate. Where more than one standard is listed, the most applicable standard is given first.

LS4: Biological Evolution: Unity and Diversity

Discovering Life's Story: The Evolution of an Idea

JOY HAKIM. Candlewick Press / MITeen Press. ISBN 9781536222944. \$22.99. (9-12)

Part of the Discovering Life's Story series, Evolution of an Idea, dives deep into the experiments, breakthroughs, and revelations in the Enlightenment period that laid the foundation to modern evolutionary theory and our understanding of genetics. Source Notes, Bibliography, Index. (JG) **SEP1, SEP2, SEP3, SEP4, SEP6, SEP7, SEP8, CCC4, CCC5, CCC7**



ESS3: Earth and Human Activity

Change Is in the Air: Carbon, Climate, Earth, and Us

DEBBIE LEVY. Illustrated by Alex Boersma. Bloomsbury. ISBN 9781547612062. \$18.99. (3-5)

In this honest yet hopeful nonfiction story, readers learn how we can change our behaviors and discover how kelp, mangroves, and soil can all help our Earth heal itself. Background Knowledge, Author's Note, Selected Sources, How Are We Helping The Earth Help Us?. (ME) **SEP1, SEP6, CCC2, CCC5, CCC7, PS3, ESS2, ETS1**



Extinctopedia: Discover What We Have Lost, What Is at Risk, and How We Can Preserve the Diversity of Our Fragile Planet

SERENELLA QUARELLO. Illustrated by Alessio Alcini. Red Comet Press. ISBN 9781636550725. \$26.99. (3-5)

What happened to the Cuban Macaw? The passenger pigeon or the giant moa? Extinopedia offers a sobering yet enlightening exploration of the planet's biodiversity crisis. Through a thoughtful blend of scientific research and vivid storytelling, the book explores how human impact, climate change, and habitat destruction have driven countless species to extinction and outlines actionable ways to protect vulnerable and endangered species—like the loggerhead sea turtle from suffering the same fate. Index, Glossary. (JG) **SEP6, SEP7, SEP8, CCC2, CCC7, LS2**



Fire Escape: How Animals and Plants Survive Wildfires

JESSICA STREMER. Illustrated by Michael Garland. Holiday House. ISBN 9780823454426. \$22.99. (3-5, 6-8)

How do animals and plants fight, prevent, and adapt to wildfires? This book highlights the resilience of species that use wildfires to their advantage, how ecosystems repopulate after fires, and even how certain animals help to prevent wildfires. Glossary, Bibliography, Websites, Index. (CF) **SEP3, SEP6, SEP7, CCC2, CCC5, CCC6, CCC7, LS2, LS3, LS4**



Of Words and Water: The Story of Wilma Dykeman--Writer, Historian, Environmentalist

SHANNON HITCHCOCK. Illustrated by Sophie Page. Benchmark Education / Reycraft Books. ISBN 9781478870371. \$18.95. (3-5)

A contemporary of Rachel Carson, and similarly as a child raised in nature, Wilma Dykeman learned early to keenly observe her surroundings. Her love of words, combined with ethnography, scientific inquiry, and writing skills let her to fight injustice by illuminating and successfully affecting change. Backmatter. (AH) **SEP7, SEP8, CCC2, LS2**



Planting Hope: A Portrait of Photographer Sebastião Salgado

PHILIP HOELZEL. Illustrated by Renato Alarcão. Simon & Schuster Children's Publishing / Atheneum Books for Young Readers. ISBN 9781534477650. \$18.99. (K-2, 3-5)

Sabastião Salgado saw the world differently. He realized he could say more through photo essays than with words, until the destruction he captured hurt too much to continue. When he and Lélia returned to his Brazilian childhood home, it was in ruins. Over many years they restored the forest and created a center to share connections to nature, and new hope. Backmatter, Map. (AH) **SEP8, CCC4, LS2**



Call for 2026 Outstanding Science Trade Books for Students K-12

Deadline for submissions: April 15, 2025

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 2025.
- Titles originally published abroad are eligible only if they have a 2025 U.S. publication date; reprints or licensed editions of titles initially published in the United States before 2025 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 2025 are not acceptable. Spanish-language editions published simultaneously with English-language editions in 2025 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 months of March and April 2025 at <https://www.cbcbooks.org/awards-and-book-lists/outstanding-science/>.

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.

Wildlife Crossings: Protecting Animal Pathways Around the World

CATHERINE BARR. Illustrated by Christiane Engel. Candlewick Press. ISBN 9781536236255. \$18.99. (K-2)

Human development has significantly impacted access to pathways wild animals need to survive. Learn about seven endangered species and how wild spaces are being created and connected to facilitate safe passage. Table of Contents, Meet Seven More Species Rediscovering Ancient Paths. (ME) **SEP1, SEP8, CCC2, CCC7, LS1, LS4, ETS1**

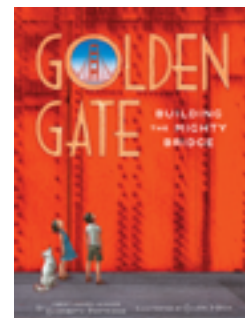


ETS1: Engineering Design

Golden Gate: Building the Mighty Bridge

ELIZABETH PARTRIDGE. Illustrated by Ellen Heck. Chronicle Books. ISBN 9781452135144. \$19.99. (K-2)

This is the story about what seemed impossible from the viewpoint of two children watching the crew build the Golden Gate Bridge. The author shares details as the story builds the bridge through the engineering design process, helping us all to remember difficult things are definitely possible. Afterword. (LB) **SEP1, CCC6**



ETS2: Links Among Engineering, Technology, Science, and Society

The Next Scientist: The Unexpected Beginnings and Unwritten Futures of the World's Greatest Scientist

KATE MESSNER. Illustrated by Julia Kuo. Chronicle Books. ISBN 9781452176963. \$19.99. (3-5)

This text portrays a diverse array of scientists when they were youth engaging in everyday explorations, such as taking things apart, playing sports, observing insects, building things, and doing art. As the book describes the important contributions of the youth as adult scientists, readers are encouraged to ask themselves whether they might be the next scientists, working to create a better world. Further Reading, Selected Sources. (CF) **SEP1, SEP2, SEP3, SEP6, SEP8, CCC1, CCC2, CCC6, CCC7**



Remembering Rosalind Franklin: Rosalind Franklin & the Discovery of the Double Helix Structure of DNA

TANYA LEE STONE. Illustrated by Gretchen Ellen Powers. Little Brown Books for Young Readers / Christy Ottaviano Books. ISBN 9780316351249. \$18.99. (K-2, 3-5)

The remarkable story of the life of Rosalind Franklin, the female scientist that took Photo 51 that showed the double helix structure of DNA. Author's Note, Quotes. (MCS) **SEP1, SEP3, SEP4, SEP6, SEP8, CCC6, LS1, LS3**



Saturdays at Harlem Grown: How One Big Idea Transformed a Neighborhood

TONY HILLERY. Illustrated by Jessie Hartland. Simon & Schuster Children's Publishing / Paula Wiseman Books. ISBN 9781665929783. \$18.99. (K-2, 3-5)

A true story about how one person demonstrated determination and perseverance to plant a garden and grow healthy children and sustainable communities- encouraging us to remember that science is for everyone. Resources and Recipes. (AMV) **LS2, SEP6**



Up Periscope!: How Engineer Raye Montague Revolutionized Shipbuilding

JENNIFER SWANSON. Illustrated by Veronica Miller Jamison. Little Brown Books for Young Readers. ISBN 9780316565486. \$18.99. (K-2, 3-5)

The inspiring story of Raye Montague, a "hidden figure" and engineer who developed a computer program to design ships and submarines for the U.S. Navy. More about Raye Montague, Author's Note. (MCS) **SEP1, SEP2, SEP5, SEP6, ETS1**

