

Resource list for 2024 STEM Educator Symposium presented by the Missouri AfterSchool Network (MASN) Keynote speech by Joanne Manaster (March 28, 2024)  
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### Resources to help you choose great books

- AAAS/Subaru Prizes for Excellence in Science Books  
[www.sbsonline.com/Subaru/Pages/PastWinners.aspx](http://www.sbsonline.com/Subaru/Pages/PastWinners.aspx)
- *Best stem books K–12 2024*. NSTA. <https://www.nsta.org/best-stem-books-k-12-2024>
- California Reading Association Eureka! Nonfiction Children’s Book Award  
<https://californiareading.org/eureka>
- Cook Prize for STEM Picture Book <https://www.bankstreet.edu/library/center-for-childrens-literature/the-cook-prize/>
- Cooperative Children’s Book Center Choices List  
<https://uwmadison.app.box.com/s/afnlmsduibcn8yp5e2z0hb11nvnddxz7>
- Cybils Nonfiction Awards [www.cybils.com](http://www.cybils.com)
- NCTE Orbis Pictus Award for Outstanding Nonfiction for Children  
<https://ncte.org/awards/orbis-pictus-award-nonfiction-for-children/>
- NSTA-CBC Outstanding Science Trade Books for Students K–12  
[www.nsta.org/publications/ostb](http://www.nsta.org/publications/ostb)
- Nerdy Book Club Book Nonfiction Awards  
<https://nerdybookclub.wordpress.com/tag/nerdies/>
- Texas Topaz Nonfiction Reading List <https://txla.org/news/2023-texas-topaz-reading-list-announced/>

### Authors and the book from the presentation

- Gail Gibbons <https://www.gailgibbons.com/> , The Planets
- Seymour Simon <https://www.seymoursimon.com/> , Bones
- Sam Kean <https://samkean.com/books/> , The Violinist’s Thumb
- Vicki Cobb <https://www.harpercollins.com/blogs/authors/vicki-cobb-2016412538943> , Science Experiments You Can Eat
- Liz Lee Heinecke <https://lizleeheinecke.com/services/> , Biology for Kids
- Sara Latta <https://www.saralatta.com/books> , Body 2.0
- DK <https://www.dk.com/us/> , Eyewitness National Parks
- Melissa Stewart <https://www.melissa-stewart.com/> NG Meteors

### Books shared in presentation:

- Emperor of All Maladies by Siddhartha Mukherjee
- Stewart, M., & Correia, M. P. (2022). *5 kinds of nonfiction: Enriching reading and writing instruction with children’s books*. Hawker Brownlow Education.

### Overview

- The Canon: A Whirligig Tour of the Beautiful Basics of Science by Natalie Angier
- \*A Short History of Nearly Everything by Bill Bryson
- What a Wonderful World : Life, the Universe and Everything in a Nutshell by Marcus Chown

- The Math Book: From Pythagoras to the 5<sup>th</sup> Dimension, 200 Milestones in the History of Mathematics by Clifford Pickover
- The Disappearing Spoon: And Other True Tales of Madness, Love and the History of the World from the Periodic Table of the Elements by Sam Kean
- A Really Short History of Nearly Everything (young readers) by Bill Bryson
- The Disappearing Spoon: And Other True Tales of Rivalry, Adventure and the History of the World from the Periodic Table of the Elements by Sam Kean (young readers)

#### Packed with Information

- Bugs A to Z
- The Science Book: Big Ideas Simply Explained (DK)
- Engineering the ABCs: How Engineers Shape Our World by Patty O'Brien Novak
- Rocks, Minerals & Gems by Sean Callery, et. al.
- Our World in Pictures: The Dinosaur and Other Prehistoric Creatures (Smithsonian)
- Little Kids First BIG Book of Science (NG) by Kathleen Wiedner Zoehfeld

#### Books Can Show Us How Science is Done

- How to Tame a Fox (and Build a Dog) by Lee Dugatkin
- The Rise and Fall of the Dinosaurs by Steve Brusatte
- The Age of Dinosaurs by Steve Brusatte (young readers)
- How Science Works: THE FACTS visually explained, DK
- The Last Stargazers: The Enduring Story of Astronomy's Vanishing Explorers by Emily Levesque
- Polar Scientists Studying the Antarctic by Sara Latta

#### Scientists can tell us their story

- Jane Goodall: Through a Window, My Thirty Years with the Chimpanzees of Gombe by Jane Goodall
- A Primate's Memoir: A Neuroscientist's Unconventional Life Among the Baboons by Robert Sapolsky
- Breaking Through: My Life in Science by Katalin Karikó
- Lab Girl by Hope Jahren

#### Others can tell the scientists' stories

- Never Give Up: Dr. Kati Karikó and the Race for the Future of Vaccines by Debbie Dady
- Sally Ride: America's First Woman in Space by Lynn Sherr
- Marie Curie: A Photographic Story of a Life by Vicki Cobb
- Rachel Carson: Women in Science and Technology

#### Others can tell the scientists' stories 2

- Buzzing with Questions: The Inquisitive Mind of Charles Henry Turner by Janice Harrington
- Rooting for Plants: The Unstoppable Charles S. Parker, Black Botanist and Collector by Janice Harrington
- Rise of the Rocket Girls: The Women Who Propelled Us, From Missiles to the Moon to Mars by Nathalia Holt

- Hidden Figures: The True Story of Four Black Women and the Space Race (young readers) by Margot Lee Shetterly, et. al.
- She Can STEM: 50 Trailblazing Women in Science from Ancient History to Today by Liz Heinecke
- The Invention of Nature: Alexander von Humboldt's New World by Andrea Wulf
- The Incredible Yet True Adventures of Alexander von Humboldt by Volker Mehnert (young readers)

#### Explainer/Larger Picture

- Venomous: How Earth's Deadliest Creatures Mastered Biochemistry by Christie Wilcox
- Big Ideas that Changed the World, A Shot in the Arm by Don Brown
- Mimic Makers: Biomimicry Inventors Inspired by Nature by Kristen Nordstrom
- An Immense World: How Animal Senses Reveal the Hidden Realms Around Us by Ed Yong
- I Contain Multitudes: The Microbes Within Us and a Grand View of Life by Ed Yong
- Great Adaptations: Star-Nosed Moles, Electric Eels & Other Tales of Evolution's Mysteries Solved by Kenneth Catania
- Falling Felines and Fundamental Physics by Greg Gbur

#### Today's Issues

- Silent Spring by Rachel Carson
- The Water Will Come: Rising Seas, Sinking Cities, and the Remaking of the Civilized World by Jeff Goodell
- The Big Necessity: The Unmentionable World of Human Waste and Why it Matters by Rose George
- Big Chicken: The Incredible Story of How Antibiotics Created Modern Agriculture and Changed the Way the World Eats by Maryn McKenna
- Spillover: Animal Infections and the Next Human Pandemic by David Quammen
- The Story of More: How We Got to Climate Change and Where to Go from Here by Hope Jahren
- The Story of More: How We Got to Climate Change and Where to Go from Here (young readers) by Hope Jahren
- The Sixth Extinction: An Unnatural History by Elizabeth Kolbert (Pulitzer Prize)
- The Sixth Extinction: Which Species will Go the Way of the Dinosaurs and Which Will Survive? (young readers) by Elizabeth Kolbert

#### Relating to the Everyday

- Newton's Football: The Science Behind America's Game by Allen St. John and Ainissa Ramirez
- How to Teach Quantum Physics to Your Dog by Chad Orzel
- The Road Taken: The History and Future of America's Infrastructure by Henry Petroski
- The Dynamics of Disaster by Susan W. Kieffer
- I Survived the Eruption of Mt. Saint Helens, 1980 by Lauren Tarshis
- Packing for Mars: The Curious Science of Life in the Void by Mary Roach
- Packing for Mars for Kids by Mary Roach
- The Alchemy of Us: How Humans and Matter Transformed One Another by Ainissa Ramirez
- Never Home Alone: From Microbes to Millipedes, Camel Cricket and Honeybees, the Natural History of Where We Live by Rob Dunn
- Who are the Covid-19 Helpers? by Sara Latta

### Historical narrative/Coming-of-Age stories

- The Age of Entanglement: When Quantum Physics was Reborn by Louisa Gilder
- The Poisoner's Handbook: Murder and the Birth of Forensic Medicine in Jazz Age New York by Deborah Blum
- Breaking the Chains of Gravity: The Story of Spaceflight Before NASA by Amy Shira Teitel
- The Immortal Life of Henrietta Lacks by Rebecca Skloot
- The Ghost Map: The Story of London's Most Terrifying Epidemic, and How it Changed Science, Cities, and the Modern World by Steven Johnson

### Natural World

- Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants by Robin Wall Kimmerer
- Braiding Sweetgrass (Young Readers Editions): Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants by Robin Wall Kimmerer
- Whale Fall: Exploring an Ocean-Floor Ecosystem by Melissa Stewart
- The Genius of Birds by Jennifer Ackerman
- The Sounds of Life: How Digital technology is Bringing Us Closer to the Worlds of Animals and Plants by Karen Bakker

### Kids Adventure

- Stella Brite and the Dark Matter Mystery by Sara Latta
- George's Secret Key to the Universe by Lucy & Stephen Hawking
- Oliver's Great Big Universe by Jorge Cham
- I Survived Hurricane Katrina, 2005 by Lauren Tarshis
- Rosie Revere, Engineer by Andrea Beaty
- Ada Twist, Scientist by Andrea Beaty
- The Fly Who Flew to Space by Lauren Sanchez
- The Magic School Bus on the Ocean Floor by Joanne Cole

### Hands on!

- Mr. Shaha's Recipes for Wonder: Adventures in Science Round the Kitchen Table by Alom Shaha
- Kitchen Science Lab for Kids by Liz Heinecke
- Outdoor Activity Lab: Exciting STEM Projects for Budding Scientists by Jack Challenger
- Human Body Learning Lab: Take an Inside Tour of How Your Anatomy Works by Betty Choi, MD
- Calling All Minds: How to Think and Create Like an Inventor by Temple Grandin

### Q&A

- What if? Mind-Boggling Science Questions for Kids by Robert Ehrlich
- Frequently Asked Questions About the Universe by Jorge Cham and Daniel Whiteson
- What If? Serious Scientific Answers to Absurd Hypothetical Questions by Randall Munroe
- Ask a Scientist by Professor Robert Winston

- Why is Snot Green? And other extremely t questions (and answers) from the Science Museum by Glenn Murphy
- Did You Know? Earth: Amazing answers to more than 200 awesome questions by Dr. Devin Dennie

#### Field Guides

- Audubon Birding Adventures for Kids
- NG Ultimate Explorer Field Guide Mammals
- Field Guides to Meteors and Meteorites by O. Richard Norton et al.
- Peterson Field Guides Animal Tracks by Olaus Murie et al.

#### Illustrated/photo children's books

- Ankylosaur Attack by Daniel Loxton
- Living Sunlight: How Plants Bring the Earth to Life by Penny Chisholm and Molly Bang (Series\_
- Brown Bear by Suzie Eszterhas (photography)
- Really Big Numbers by Richard Evan Schwartz

#### Illustrated/photos

- The Elements: A Visual Exploration of Every Known Atom in the Universe by Theodore Gray
- Light: The Visible Spectrum and Beyond by Kimberly Arcand and Megan Watzke
- Soonish: Ten Emerging Technologies That'll Improve and/or Ruin Everything by Kelly and Zach Weinersmith
- The Time Nature Keeps: A Visual Guide to the Cycles and Time Spans of the Natural World by Helen Pitcher

#### Graphic novels

- Science Comics—Wild Weather: Storms, Meteorology, and Climate by MK Reed and Jonathan Hill
- The Manga Guide to Electricity by Kazuhito Fujitaki Matsuda. (many other subjects in this series)
- The Basics of Cell Life with Max Axiom, Super Scientist by Amber J. Keyser
- Gallery of the Infinite by Richard Evan Schwartz
- The Cartoon Guide to the Environment by Larry Gonick (many other subjects in this series)
- The Dialogues: Conversations about the Nature of the Universe by Clifford V. Johnson

#### Sources

- Chung, M., and B. Keckler, B. 2016. Shared-book experience using science-themed books to develop scientific literacy: An interactive approach with struggling readers. *Language and Literacy Spectrum* 26 (Spring): 31–40.
- Coppens, K. (2021, March). *Using science-themed fiction chapter books in the classroom*. NSTA. <https://www.nsta.org/science-scope/science-scope-marchapril-2021/using-science-themed-fiction-chapter-books-classroom>
- Mahzoon-Hagheghi, M., Yebra, R., Johnson, R. D., & Sohn, L. N. (2018). Fostering a Greater Understanding of Science in the Classroom through Children's Literature. *Texas Journal of Literacy Education*, 6(1), 41-50.

- Massey, S. R. (2015). *The multidimensionality of children's picture books for upper grades*. English Journal, 104(5), 45. <https://www.gcu.edu/blog/teaching-school-administration/teaching-tuesday-benefits-using-picture-books-science>
- Stewart, M., & Correia, M. P. (2022). *5 kinds of nonfiction: Enriching reading and writing instruction with children's books*. Hawker Brownlow Education.

### Web Resources

- Arobbin. (2024, January 22). *Announcing the 2024 Excellence in children's and Young Adult Science Fiction Notable lists*. News and Press Center. <https://www.ala.org/news/member-news/2024/01/announcing-2024-excellence-children-s-and-young-adult-science-fiction-notable>
- About | Leap into Science. <http://leap.fi.edu/about-leap>
- Library of Congress Science Through Pop Culture: A Research Guide <https://guides.loc.gov/science-through-pop-culture/comics>
- Mahzoon-Hagheghi, M., Yebra, R., Johnson, R. D., & Sohn, L. N. (2018). Fostering a Greater Understanding of Science in the Classroom through Children's Literature. *Texas Journal of Literacy Education*, 6(1), 41-50.
- *Picture-perfect science*. NSTA. <https://www.nsta.org/book-series/picture-perfect-science#tab>

### Checklist for Choosing children's literature to teach science

- ✓ Is the science concept recognizable?
- ✓ Is the story factual?
- ✓ Is fact discernible from fiction?
- ✓ Does the book contain misrepresentations?
- ✓ Are the illustrations accurate?
- ✓ Are characters portrayed with gender equity?
- ✓ Are animals portrayed realistically?
- ✓ Is the passage of time referenced adequately?
- ✓ Does the story promote a positive attitude toward science and technology?
- ✓ Will children read or listen to this book?

Checklist comes from: Mahzoon-Hagheghi, M., Yebra, R., Johnson, R. D., & Sohn, L. N. (2018). Fostering a Greater Understanding of Science in the Classroom through Children's Literature. *Texas Journal of Literacy Education*, 6(1), 41-50.

Books from Stewart, M., & Correia, M. P. (2022). *5 kinds of nonfiction: Enriching reading and writing instruction with children's books*. Hawker Brownlow Education.

Traditional Nonfiction, from 5 Kinds of Nonfiction by Melissa Stewart

- Behind the Scenes Gymnastics by Blythe Lawrence
- Coral Reefs by Gail Gibbons
- Exoplanets by Seymour Simon

- Golden Retrievers by Sarah Frank
- Monster Trucks by Matt Doeden
- Rivers and Streams by Cathryn Sills

Browseable Nonfiction, from 5 Kinds of Nonfiction by Melissa Stewart

- Big Book of WHY Revised and Updated by Editors of Time for Kids
- The Book of Queens by Stephanie Warren Drimmer
- Eye Spy: Wild Ways Animals See the World by Guillaume Duprat
- Guinness World Records 2019 by Guinness World Records
- North America: A Fold-Out Graphic History by Sarah Albee
- Ocean: Secrets of the Deep by Sabrina Weiss and Giulia De Amicis

Narrative Nonfiction, from 5 Kinds of Nonfiction by Melissa Stewart

- Joan Proctor, Dragon Doctor: The Woman Who Loved Reptiles by Patricia Valdez
- Karl's New Beak by Lela Nargi
- Planting Stories: The Life of Librarian and Storyteller Pura Belpré by Anika Aldamuy Denise
- Spooked! How a Radio Broadcast and The War of the Worlds Sparked the 1938 Invasion of America by Gail Jarrow
- Two Brothers, Four Hands: The Artists Alberto and Diego Giacometti by Jan Greenberg and Sandra Jordan
- You're Invited to a Moth Ball: A Nighttime Insect Celebration by Loree Griffin Burns

Expository Nonfiction, from 5 Kinds of Nonfiction by Melissa Stewart

- Homes in the Wild: Where Baby Animals and Their Parents Live by Lita Judge
- The Next President: The Unexpected Beginnings and Unwritten Future of America's Presidents by Kate Messner
- Rotten: Vultures, Beetles, Slime, and Nature's Other Decomposers by Anita Sanchez
- We Are Grateful: Otsaliheliga by Traci Sorell
- What If You Had T. rex Teeth? And Other Dinosaur Parts by Sandra Markle
- Women in Art: 50 Fearless Creatives Who Inspired the World by Rachel Ignotofsky

Active Nonfiction, from 5 Kinds of Nonfiction by Melissa Stewart

- National Geographic Kids Bird Guide of North America by Jonathan Alderfer
- Code This! Puzzles, Games, Challenges, and Computer Coding Concepts for the Problem Solver in You by Jennifer Szymanski
- Cooking Class Global Feast! 44 Recipes That Celebrate the World's Cultures by Deanna F. Cook
- Hair-Raising Hairstyles That Make a Statement by Rebecca Rissman
- Ralph Masiello's Alien Drawing Book by Ralph Masiello
- Wildlife Ranger Action Guide: Track, Spot & Provide Healthy Habitat for Creatures Close to Home by Mary Kay Carson