

Science, Technology, Engineering and Math (STEM)

Books for Children Nine and Older

A selected list from *The Bank Street Children's Book Committee's Best Books of the Year*

13 Planets: The Latest View of the Solar System

by David A. Aguilar, photos
(National Geographic, 2011)
The latest and greatest discoveries and theories about our universe is presented. Magnificent photos and paintings illustrate the text. (9-12)

Adventure Beneath the Sea: Living in an Underwater Science Station

by Kenneth Mallory, photos by Brian Skerry
(Boyd's Mills, 2010)
Go beneath the ocean near the Florida Keys and experience life studying sea creatures. Reference materials included. (9-12)

***Almost Astronauts: 13 Women Who Dared to Dream**

by Tanya Lee Stone
(Candlewick, 2009)
Thirteen women struggled to be accepted in the NASA Mercury space program in the 1960s. Archival photographs. (12-16)

Alex the Parrot: No Ordinary Bird; A True Story

written by Stephanie Spinner, illustrated by Meilo So
(Knopf/Random House, 2012)
A scientist trains a gray parrot to talk and comprehend. Colorful watercolor and gouache illustrations. (8-10)

The Animal Book: A Collection of the Fastest, Fiercest, Toughest, Cleverest, Shyest - and Most Surprising - Animals on Earth

by Steve Jenkins
(Houghton Mifflin Books for Children/HMH, 2013)
Describes 300 animals--exotic and everyday--and the amazing things they do. Stunning, detailed illustrations. (9-13)

Animal Tracks & Signs

by Jinny Johnson
(National Geographic, 2008)
Learn how to identify mammal, reptile, bird and invertebrate tracks in your own backyard and around the world. (10-14)

Be a Wilderness Detective

by Peggy Kochanoff
(Nimbus, 2013)
A guide to fields, woods, and coastlines has helpful descriptive illustrations (8-12)

Billions of Years, Amazing Changes: The Story of Evolution

by Laurence Pringle, illustrated by Steve Jenkins
(Boyd's Mills, 2011)
This engaging book presents the evidence for the theory of evolution and explains how new species appear and how genes cause change. Drawings and photographs illustrate the ideas. (11-16)

Biodiversity of Rain Forests

by Greg Pyers
(Marshall Cavendish, 2010)
Information on worldwide distribution of rain forests: tropical and temperate is explained along with websites, glossary, maps and graphs. (9-14)

Biomimicry: Inventions Inspired by Nature

by Dora Lee, illustrated by Margot Thompson
(Kids Can Press, 2011)
Discover how inventions such as Velcro, sharkskin-inspired swimsuits, biodegradable plastics and many more were created. (11-14)

Bizarre Dinosaurs: Some Very Strange Creatures and Why We Think They Got That Way

by Christopher Sloan
(National Geographic, 2009)
Unusual dinosaurs are described with the aid of photographs of fossils and computer graphics. Sidebars include valuable information. (8-12)

***A Black Hole Is Not a Hole**

by Carolyn Cinami DeCristofano, illustrated by Michael Carroll
(Charlesbridge, 2012)
Clear explanations and helpful diagrams introduce the creation of the "spaces with a powerful pull." Time-line, glossary, literary resources, and websites. (9-13)

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***Bones**

by Steve Jenkins
(Scholastic, 2010)
Fascinating facts about bones and skeletons are stunningly illustrated with cut paper collages. (8-11)

Breakfast in the Rainforest: A Visit with Mountain Gorillas

written and photographed by Richard Sobel
(Candlewick, 2008)
A photographer visits the endangered gorillas in the African rainforest. Outstanding photos. (9-12)

Brooklyn Bridge

by Lynn Curlee
(Atheneum, 2001)
Visual history of the design, construction and triumphant completion of this New York City landmark. (8-12)

Bugs (Scholastic Discover More series)

by Penelope Arlon and Tory Gordon-Harris
(Scholastic, 2012)
Bugs help us by spinning silk, making honey, and eating cow dung--but they also spread disease and sting. Meet every kind of bug, all presented with detailed color photographs. (7-10)

Bugs and Bugsicles: Insects in the Winter

by Amy S. Hansen, illustrated by Robert C. Kray
(Boyd's Mills, 2010)
How do insects survive the winter? Many different strategies are explained with instructive illustrations. (8-10)

***Building Big**

by David Macaulay
(HMC, 2004)
Technical and historical perspectives of bridges, dams and other large constructions. Clearly written with helpful illustrations. (11+)

Buried Alive!: How 33 Miners Survived 69 Days Deep Under the Chilean Desert

by Elaine Scott
(Clarion/HMH, 2012)
The drama of the actual event as well as much background information explores the miners' lives, mining operations, and the rescue process. Photographs, bibliography. (10-12)

Burp!: The Most Interesting Book You'll Ever Read about Eating

by Diane Swanson, illustrated by Rose Cowles
(Kids Can Press, 2001)
What happens to your food from the moment you bite into it to the moment it's eliminated as waste. (8-12)

***Buzz about Bees**

by Kari-Lynn Winters
(Fitzhenry & Whiteside, 2013)
An in-depth account of the history and social structure of bees with activities and clearly labeled drawings and photographs. (8-12)

Cars on Mars: Roving the Red Planet

by Alexandra Siy
(Charlesbridge, 2009)
Spirit and Opportunity, the robotic Rovers, have been exploring Mars and sending photographs and data to earth since 2004. (10-14)

***The Case of the Vanishing Golden Frogs: A Scientific Mystery**

by Sandra Markle
(Millbrook, 2011)
The story of an endangered amphibian is told as a page-turning mystery. Clear language defines scientific facts, while exquisite photographs support this important tale. (9-14)

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by Sandra Markle
(Millbrook/Lerner, 2013)

Why are so many honeybees dying? Scientists try to solve the mystery. Engaging, helpful photographs and illustrations. (8-12)

Catching Fire: The Story of Firefighting

by Gena K. Gorrell
(Tundra, 1999)
Informative sidebars, black-and-white photos and diagrams supplement fascinating details to make this a hot pick! Includes references, index. (10-14)

***Citizen Scientists: Be a Part of Scientific Discovery from Your Own Backyard**

by Loree Griffin Burns, photographs by Ellen Harasimowicz
(Henry Holt/Macmillan, 2012)
Fall butterflying, winter birding, spring frogging, summer ladybugging--the techniques and equipment needed to enjoy contributing to the advance of knowledge of the natural world. Useful glossary, resources, bibliography. (8-14)

City Critters: Wildlife in the Urban Jungle

by Nicholas Read
(Orca, 2012)
Learn about the surprising animals that share our cities and the mixed blessings they bring. Colorful photographs. (9-12)

Cyberbullying

by Heather E. Schwartz
(Capstone, 2013)
The very real dangers for young people in our technology-rich world are explained with advice for targets, bullies and parents. (9-14)

Cycle of Rice, Cycle of Life: A Story of Sustainable Farming

written and photographed by Jan Reynolds
(Lee & Low, P 2013)
The ancient system of rice farming is still used in Bali today, even though it conflicts with more modern techniques. Descriptive photographs. (8-11)

The Dolphins of Shark Bay

by Pamela S. Turner, photographed by Scott Tuason
(Houghton Mifflin/HMH, 2013)
Learn about dolphin behavior in Australia as scientists record their everyday activities and surprisingly intelligent behavior. Colorful photographs. (10-14)

Down Down Down: A Journey to the Bottom of the Sea

by Steve Jenkins
(HMH, 2009)
Many fascinating creatures live far below the ocean surface. Detailed collage illustrations. (8-10)

Eat Your Math Homework: Recipes for Hungry Minds

by Ann McCallum, illustrated by Leeza Hernandez
(Charlesbridge, 2011)
Playfully illustrated rabbits introduce math concepts through recipes. (8-10)

Earth-Friendly Buildings, Bridges and More: The Eco-Journal of Corry Lapont

by Etta Kaner, illustrated by Stephen MacEachern
(Kids Can Press, 2012)
Photographs, drawings, diagrams, and simple experiments explain earth-friendly constructions. Cleverly presented by an enthusiastic student narrator. (8-12)

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Eight Dolphins of Katrina: A True Tale of Survival

by Janet Wyman Coleman, illustrated by Yan Nascimbene

(Houghton Mifflin/HMH, 2013)

When Hurricane Katrina destroys the Marine Life Oceanarium, eight dolphins find themselves in the Gulf of Mexico. Can they be found? Simple watercolors. (6-8)

The Elements: The Building Blocks of the Universe

by Dan Green

(Scholastic, 2012)

The properties and uses of the basic substances from hydrogen to ununhexium, that everything on Earth is made of. Clear diagrams and photographs. (9-12)

***The Elephant Scientist (Scientists in the Field series)**

written by Caitlin O'Connell and Donna M. Jackson, photographs by Caitlin O'Connell and Timothy Rodwell

(Houghton Mifflin/HMH, 2011)

Magnificent, close-up photographs help to describe the communication, group behavior and more about African elephants in their native habitat. (9-12)

***Empire State Building: When New York Reached for the Skies**

by Elizabeth Mann, illustrated by Alan Witschonke, photos by Lewis Hine

(Mikaya, 2006)

Clear text, fascinating facts and captivating illustrations and photos. (9-13)

Eruption: Volcanoes and the Science of Saving Lives

by Elizabeth Rusch, photographed by Tom Uhlman (Houghton Mifflin/HMH, 2013)

These scientists work to protect the lives of people living in the danger zone when volcanoes erupt. Gorgeous photographs, (9-13)

***Every Bone Tells a Story: Hominin Discoveries, Deductions, and Debates**

by Jill Rubalcaba, and Peter Robertshaw

(Charlesbridge, 2010)

Four archeological discoveries reveal how scientists study the history of hominins, the impact of new scientific techniques, and controversies and questions still to be resolved. (12-16)

Far from Shore: Chronicles of an Open Ocean Voyage

by Sophie Webb

(Houghton Mifflin/HMH, 2011)

A day-to-day description of the ocean and its life during a Pacific voyage is enhanced with soft, skillful watercolors. (10-14)

For Good Measure: The Ways We Say How Much, How Far, How Heavy, How Big, How Old

written and photographed by Ken Robbins (Roaring Brook/Macmillan, 2010)

Puzzled by the meaning of a fathom, a league, a span? Find out the origin of these and other everyday measurements and their equivalent in the metric system. Spectacular photographs add to the explanations. (9-10)

Fourth Down and Inches: Concussions and Football's Make-or-Break Moment

by Carla Killough McClafferty

(Carolrhoda/Lerner, 2013)

Graphic technical details describe head and brain traumas that have plagued the game of football since the nineteenth century. Sources, web sites and bibliography. Photos and diagrams. (12-17)

Fractions, Decimals, and Percents

by David A. Adler, illustrated by Edward Miller

(Holiday House, 2010)

With colorful illustrations, simple text, and lots of examples, the author explains the relationship between these often tricky math concepts. (8-10)

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***The Great American Dust Bowl**

by Don Brown
(Houghton Mifflin/HMH, 2013)
Striking, evocative pen, ink, and digital drawings and engaging text explain the history and science of one of America's greatest environmental disasters. (11-15)

Growing Patterns: Fibonacci Numbers in Nature

by Sarah C. Campbell, photos by Sarah C. Campbell and Richard P. Campbell
(Boyd's Mills, 2010)
Can you discover mathematical patterns in flowers, fruits, and shells? Close-up photos demonstrate complex ideas. (7-10)

Honey Bees: Letter from the Hive: A History of Bees and Honey

by Stephen Buchmann
(Delacorte, 2010)
The "sisterhood" of the hive, ancient Mayan beekeeping, and the human craving for sugar comes buzzing to life in this sweet history complete with sources and recipes. (10-13)

***Hatch!**

by Roxie Munro
(Marshall Cavendish, 2011)
Read the hints and look at the eggs. Can you guess which bird laid them? (8-12)

Hooray for Inventors!

by Marcia Williams
(Candlewick, 2005)
The inside story, in comic strip style, of how some of the world's greatest inventions came to be. (8-12)

I Feel Better with a Frog in My Throat: History's Strangest Cures

by Carlyn Beccia
(Houghton Mifflin, 2010)
Earthworm necklaces, spider webs, frog soup--did any of these cure people? Quiz format and humorous illustrations about the history of medicine. (8-11)

I. M. Pei: Architect of Time, Place, and Purpose

by Jill Rubalcaba
(Marshall Cavendish, 2011)
This detailed account of how a great architect's masterpieces were planned and constructed is designed as elegantly as Pei's structures. Timeline, sources, bibliography. (13-17)

***An Inconvenient Truth: The Crisis Of Global Warming**

by Al Gore, adapted by Jane O'Connor
(Viking/Penguin, 2007)
Al Gore's famed bestseller is adapted for a younger audience with simple text and clear photographs and diagrams. (10-14)

***Invisible Enemies: Stories of Infectious Disease**

by Jeanette Farrell
(Farrar Straus Giroux/Macmillan, 2005)
Seven diseases that changed the course of human history. Archival illustrations. (10-13)

It's Probably Penny

by Loreen Leedy
(Henry Holt, 2010)
The concept of probability is explained, along with useful information about making predictions. (8-14)

Just A Second: A Different Way to Look at Time

by Steve Jenkins
(Houghton Mifflin/HMH, 2011)
An award-winning illustrator explores the relationship of time increments as he compares speed, amounts, and consumption. Exquisitely illustrated with graphic collages. (6-8)

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Just Fine the Way They Are: From Dirt Roads to Rail Roads to Interstates

by Connie Nordhielm Wooldridge, illustrated by Richard Walz
(Calkins Creek/Boyd's Mills, 2011)
The story of American transportation is accompanied by rich, engaging illustrations. Timeline, bibliography, and resources. (7-10)

Liberty Rising: The Story of the Statue of Liberty

by Pegi Deitz Shea, illustrated by Wade Zahares
(Square Fish/Henry Holt/Macmillan, P 2013)
History of the great statue's construction with vibrant pastels from many perspectives. (8-12)

***Locomotive**

by Brian Floca
(Richard Jackson/Atheneum/S&S, 2013)
Readers follow one family from Omaha, Nebraska, to Sacramento, California, and learn about the Transcontinental Railroad. Watercolor landscapes and close-up views of the train's inner workings heighten the experience. (6-10)

Making Cents: The Nuts and Bolts Of Money and a Whole Lot More!

by Elizabeth Keeler Robinson, illustrated by Bob McMahon
(Ten Speed/Tricycle, 2008)
In this creative introduction to United States currency, kids work hard to earn enough money to build a clubhouse. (6-10)

Mathemagic!: Number Tricks

by Lynda Colgan, illustrated by Jane Kurisu
(Kids Can Press, 2011)
Clever "magic tricks" illustrate the uses of ancient and modern number systems. (10-16)

***Mosque**

by David Macaulay
(HMC, 2008)
Clear text and detailed illustrations show the extensive construction process of this impressive structure while presenting its impact on a community. (11-14)

Mummy Math: An Adventure in Geometry

by Cindy Neuschwander, illustrated by Bryan Langdo
(Square Fish/Henry Holt/Macmillan, 2008)
Two children trapped in a pyramid use their knowledge of geometric shapes to find the way out. (8-10)

***The Mystery of Darwin's Frog**

by Marty Crump, illustrated by Steve Jenkins and Edel Rodriguez
(Boyd's Mills Press/Highlights, 2013)
Over a 175-year period, scientists made fascinating discoveries about the tiny frog that Darwin discovered in Chile in 1835. Drawings and photographs support the text. (9-12)

Octopuses (Animal Abilities series)

by Anna Claybourne
(Heinemann-Raintree/Capstone, 2013)
Learn all about these extremely intelligent aquatic invertebrates. Clear text and diagrams and striking photographs. (8-10)

Pedal It!: How Bicycles Are Changing the World

by Michelle Mulder
(Orca, 2013)
The history and uses of bicycles that have been around for nearly 200 years is depicted in engaging text and photographs. (8-11)

Primates: The Fearless Science of Jane Goodall, Dian Fossey, and Biruté Galdikas

by Jim Ottaviani, illustrated by Maris Wicks
(First Second/Roaring Brook Press/Macmillan, \$19.99) '13 978-1-59643-865-1
We are led through the jungle and are able to follow the careers of groundbreaking scientists who studied primates. Engaging graphic art and text. (8-12)

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***Scaly Spotted Feathered Frilled**

by Catherine Thimmesh
(Houghton Mifflin Harcourt, 2013)
How paleontologists and artists describe dinosaurs is presented in a well-researched study. Realistic illustrations (9-12)

Scorpions!: Strange and Wonderful

by Laurence Pringle, illustrated by Meryl Henderson
(Boyd's Mills/Highlights, 2013)
From the cephalothorax (head) to abdomen (end), this predator's world is revealed. Supportive paintings. (8-11)

Shaking the Foundation: Charles Darwin and the Theory of Evolution

by Sylvia Johnson
(Twenty-First Century/Lerner, 2013)
The nature of Darwin's theory and of its opposition are examined. Black-and-white photos and illustrations. Extensive back matter and references. (14+)

The Story of Silk: From Worm Spit to Woven Scarves

by Richard Sobol
(Candlewick, 2012)
Chinese legends, mulberries, worms, spit and poop unite to make beautiful silk clothing, providing Thai girls with a viable trade and proud heritage. Photo essay. (8-10)

Stronger than Steel: Spider Silk DNA and the Quest for Better Bulletproof Vests, Sutures, and Parachute Rope (Scientists in the Field series)

by Bridget Heos, photographs by Andy Comins
(Houghton Mifflin/HMH, 2013)
Imagine implanting goats, silkworms, and alfalfa with the DNA of golden orb weaver spiders to develop a more useful quality of silk. Photographs. References. (11-14)

***The Tapir Scientist (Scientists in the Field series)**

by Sy Montgomery, photographed by Nic Bishop
(Houghton Mifflin/HMH, 2013)
A team of scientists conduct meticulous field research to save the tapir from extinction. Lively narrative and stunning photographs convey their challenges and successes. (10-14)

***Team Moon: How 400,000 People Landed Apollo 11 on the Moon**

by Catherine Thimmesh
(HMC, 2006)
The spectacular first moon landing and the many, many people who made it possible. Photographs, sources, glossary. (11-14)

Technology (Scholastic Discover More series)

by Clive Gifford
(Scholastic, 2012)
Everything from space vehicles, cell phones and roller coasters can be explained. Young techies will love this information, photographs, and timelines. (9-14)

That's A Possibility!: A Book about What Might Happen

by Bruce Goldstone
(Henry Holt BFYR/Macmillan, 2013)
It is more certain than probable, with these fun photos and examples, that you will walk away with a better grasp and appreciation of probabilities. (7-11)

Toilet: How It Works

by David Macaulay, with Sheila Keenan
(David Macaulay Studio/Macmillan, 2013)
Explanations of how toilets, plumbing, sewers and treatment plants work. Clarifying drawings. (9-12)

Transformed: How Everyday Things Are Made

written by Bill Slavin with Jim Slavin, illustrated by Bill Slavin
(Kids Can, 2005)
From chewing gum and plastic wrap to rayon and licorice. Simple diagrams and step-by-step explanations. (8-14)

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***Trapped: How The World Rescued 33 Miners
from 2,000 Feet below the Chilean Desert**

by Marc Aronson
(Atheneum/S&S, 2011)

In August 2010, experts from around the world cooperated in a harrowing rescue of miners trapped in an unsafe mine. Includes source notes and suggestions for further reading. (9-12)

***Wheels of Change: How Women Rode the
Bicycle to Freedom (with a Few Flat Tires
along the Way)**

by Sue Macy
(National Geographic, 2011)

The creation of the bicycle in the late 1800s transformed transportation and dress and provided equal opportunity. Archival material and photographs. (10-14)

**Wild Animal Neighbors: Sharing Our Urban
World**

by Ann Downer
(Twenty-First Century/Lerner, 2013)

Nature strikes back as we push our urban landscapes further into the wild animals' habitats and the animals push back and inhabit ours. Photographs. (10-14)

***Wild Boy: The Real Life of the Savage of
Aveyron**

by Mary Losure, illustrated by Timothy Basil Ering
(Candlewick, 2013)

A feral child captured in late 1700s southern France deals with an alien civilization. Based on a true story. Illustrations rendered in charcoal. (9-12)