

Outstanding Science Trade Books for Students K–12: 2003 (Books published in 2002)

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Archaeology, Anthropology, and Paleontology

The 5,000-Year-Old Puzzle: Solving a Mystery of Ancient Egypt. Claudia Logan. Illustrated by Melissa Sweet. Farrar, Straus, and Giroux. 48pp. Trade ISBN 0-374-32335-6, \$17. (E, I) Written in diary form, this engaging narrative captures the imagination while exciting young readers to revel in the "you are there" glimpse of an archaeological dig and learn that excavation can some-times uncover more than just treasure. This lively presentation of information and color photographs highlights the adventure, frustration, and mystery of an archaeological investigation. Sidebars, Historical Fact Sheets. SYH (II, VII)

Fossil Fish Found Alive: Discovering the Coelacanth. Sally M. Walker. Illustrated with photographs. Carolrhoda. 64pp. Library ISBN 1-57505-536-8, \$17.95. (A) The coelacanth is a prehistoric fish that existed millions of years before dinosaurs walked the Earth. These fish have remained virtually unchanged over the millions of years of their existence. This is a story of the first discovery as well as subsequent discoveries of these ancient fish. It is about the author's quest to answer many questions, with each answer raising new questions. Bibliography, Glossary, Index, Major Coelacanth Discoveries (map), Timeline, Websites. LEO (II, IV, VIII)



Figure 1: Copyright © 2002, Lerner Publishing Group, from Fossil Fish Found Alive

Secrets from the Rocks: Dinosaur Hunting with Roy Chapman

Andrews. Albert Marrin. Illustrated with photographs. Dutton. 64pp. Trade ISBN 0-525-46743-2,



\$18.99. Paper ed. (F). (I, A) This eye-opening portrayal is an adventure in reading, offering thoughtprovoking insight into the constant shifting nature of scientific discovery. Presenting a colorful portrait of what it means to be an explorer, this well-written book details a team's discoveries of dinosaur eggs and more, changing the way we think about the great age of dinosaurs. Photo Chart, Websites, Some Other Books to Read. SYH (II, VIII)

SuperCroc and the Origin of Crocodiles. Christopher Sloan. Illustrated by Paul Martín and with photographs. National Geographic Society. 64pp. Trade ISBN 0-7922-6691-9, \$18.95. Paper ed. (F). (A) And you thought dinosaurs ruled. In this book students will learn about the origin of crocodiles, some of which were almost as large as *Tyrannosaurus rex*! Most books about the Mesozoic era (and paleontology in general) focus on dinosaurs, but in this book, crocodyliforms rule. With incredible illustrations and photographs, accompanied by very descriptive text, this book brings ancient crocodiles to life and compares them to today's crocodiles. Introduction, Glossary, Index. DW (VIII, V, II)

Biography

Copernicus: Founder of Modern Astronomy. Catherine M. Andronik. Illustrated with photographs. Enslow. 112pp. Library ISBN 0-7660-1755-9, \$20.95. (I) The idea of a moving Earth did not begin to gain serious recognition until the work of Copernicus in the fifteenth century. This book not only reviews the wonderful contributions to astronomy made by Copernicus, but also offers an exciting glimpse into his life that is so often missing from other biographies. Bibliography, Glossary, Index, Internet Resources, Chronology, Chapter Notes. TMC (VIII, V)

To Fly: The Story of the Wright Brothers. Wendie Old. Illustrated by Robert Andrew Parker. Clarion. 48pp. Trade ISBN 0-618-13347-X, \$16. (E) From kite building and gliders to airplanes, the reader is introduced to the Wright brothers as they attempt to solve the problem of manned flight. Far from an ordinary biography, this book gives the reader insight into the inquiry strategies modeled by the Wright brothers. Colorful illustrations help the reader visualize the various stages in the process. The epilogue reinforces the fact that inventions are often the result of the collaborative efforts of several individuals. Notes, Further Reading, Timeline, Index. CBR (VII, VIII, II)

C Dr. Jenner and the Speckled Monster: The Search for the Smallpox Vaccine. Albert Marrin. Illustrated with photographs. Dutton. 96pp. Trade ISBN 0-525-46922-2, \$17.99. Paper ed. (F). (E, I) The history of the deadly smallpox disease from earliest times to Jenner's incredible breakthrough vaccine will fascinate the reader. The origin of the disease and history of how it was eradicated is amazing. Ad-dressing its weapon potential and who stockpiles the virus creates a modern connection. Books to Read, Websites, Index. VDW (II, VIII)

Inventing the Future: A Photobiography of Thomas Alva Edison. Marfé Ferguson Delano. Illustrated with photographs. National Geographic Society. 64pp. Trade ISBN 0-7922-6721-4, \$18.95. (I, A) The author provides us with details of Edison the man as well as Edison the inventor. Wonderful historic photographs complement well-written text. A wonderful presentation of the life and work of America's premier inventor. Chronology, Book and Internet Resources, Index. TMC (VI, VII)

Environment and Ecology

Animals on the Trail with Lewis and Clark. Dorothy Hinshaw Patent. Illustrated with photographs by William Muñoz. Clarion. 128pp. Trade ISBN 0-618-91415-9, \$18. (A) A fascinating account of the expedition of Lewis and Clark, who observed, documented, and collected specimens of many unknown species during their travels. Several species were named after the explorers. The specimens they collected and their documentation would prove useful to scientists for many years to come. Author's Note, Bibliography, Chronology of Animal Discoveries New to Science, Map of Journey. LEO (VIII, IV, II)

Butterfly Count. Sneed B. Collard III. Illustrated by Paul Kratter. Holiday House. 32pp. Trade ISBN 0-8234-1607-0, \$16.95. Paper ed. (F). (E) An annual butterfly census takes on special meaning as young Amy looks for



Figure 2: Clarion Books, from Animals on the Trail with Lewis and Clark

a regal fritillary, the butterfly that encouraged great-great-grandmother Nora Belle to donate farmland to a prairie restoration project. Naturalistic watercolor illustrations and field notes add importance to this engaging story. Mini-Field Guide, Fourth of July Butterfly Count Information. VDW (IV, I)

Encantado: Pink Dolphin of the Amazon. Sy Montgomery. Illustrated with photographs by Dianne Taylor-Snow. Houghton Mifflin. 73pp. Trade ISBN 0-618-13103-5, \$18. (I, A) The world of freshwater dolphins is under-appreciated by most humans. This engaging work captures in detail the important role this mammal plays in its environment. The book is unique in exploring how humans and dolphins affect each other and in shedding light on how biologists do their work. Index, Supplemental Resources. MJL (IV, VII, VIII)

Life in a Grassland (Ecosystems in Action series). Dorothy Hinshaw Patent. Illustrated with photographs by William Muñoz. Lerner. 72pp. Library ISBN 0-8225-2139-3, \$26.60. (I) This book describes features of grasslands, including location, variety of grasses, climate, soil characteristics, and animal life. The impact of people on a prairie ecosystem is also discussed. The readable text is enhanced by colorful photographs and text boxes. This book on grasslands, a less familiar ecosystem to many people, will be an excellent addition to a classroom collection. Glossary, Websites, Activities, Further Readings, Index. CBR (IV, VII)

Wild Man Island. Will Hobbs. HarperCollins. 192pp. Trade ISBN 0-688-17473-6, \$15.95; Library ISBN 0-06-029810-3, \$15.89. Paper ed. (F). (A) A story about a boy's struggle with himself and nature. While on a kayaking trip, a boy becomes separated from the group by a storm off the coast of Alaska. He manages to reach a wilderness island, barefoot and without provisions. When he thinks he won't be found, he sets out walking to find help. His adventures lead him to an anthropological find of a lifetime. Author's Note. LEO (I, VII)

Life Science

*Butterflies in the Garde*n. Written and illustrated by Carol Lerner. HarperCollins. 32pp. Trade ISBN 0-688-17478-7, \$16.95; Library ISBN 0-688-17479-5, \$16.89. (P) "Butterflies, butterflies everywhere—why not plant a garden for them to enjoy?" This book describes various kinds of butterflies, what they

eat, and how they grow from caterpillars to adult fliers. It also vividly depicts flowers that attract butterflies and plants on which butterflies leave their eggs. Butterfly Key. ASM (IV, II)

Birds Build Nests. Yvonne Winer. Illustrated by Tony Oliver. Charles-bridge. 32pp. Trade ISBN 1-57091-500-8, \$16.95; Paperback ISBN 1-57091-501-6, \$6.95. (P) Beautiful full-page illustrations reveal the varied habitats in which different bird species build their unique nests. The rhyming prose will engage the young reader in observing and understanding those differences in nest building. Nest Identification Guide, References, Internet Resources. LNS (IV)

Field Trips: Bug Hunting, Animal Tracking, Bird-Watching, Shore Walking with Jim Arnosky. Written and illustrated by Jim Arnosky. HarperCollins. 96pp. Trade ISBN 0-688-15172-8, \$15.95; Library ISBN 0-688-15173-6, \$15.89. (I) Jim Arnosky opens our eyes to the natural world on field trips through a variety of habitats. Ideas and how-to tips include where to go, what to look for, equipment to take, and how to document what you discover. Appealing sketches illustrate the habitats and serve as excellent models of a naturalist's journal pages. Index. TH (II, IV, VIII)

Dolphins. Sylvia M. James. Illustrated with photographs. Mondo. 24pp. Paperback ISBN 1-59034-010-8, \$6.00. (E) Incredible photographs by talented cetacean photographer specialists such as Michael S. Nolan and Todd Pusser will be appreciated by both students and teachers. Photographs of over 16 species of dolphins and an easy-to-understand explanation of what a dolphin is make this book a wonderful introduction for younger students to an often misunderstood group of mammals. DW (IV)

From Egg to Butterfly. Shannon Zemlicka. Illustrated with photographs. Lerner. 24pp. Library ISBN 0-8225-0713-7, \$18.60. (E) From a recently hatched caterpillar's first meal (its egg), to the formation of the pupae within a jeweled chrysalis, culminating in the metamorphosis of an adult butterfly, readers will be transfixed by the incredibly crisp and clear photographs accompanying the text. This up-close and intimate look at the life stages of a monarch butterfly will be an asset to any young entomologist's library. DW (IV, I)

Giant Pandas. Written and illustrated by Gail Gibbons. Holiday House. 32pp. Trade ISBN 0-8234-1761-1, \$16.95. Paper ed. (F). (P, E) This fascinating book provides factual information about giant pandas. It is an introduction to the physical characteristics, behavior, life cycle, and habitat of these endangered animals. Colorful illustrations accompany the text. ASM (IV, II)

Growing Up Wild: Penguins. Sandra Markle. Illustrated with photographs. Atheneum. 32pp. Trade ISBN 0-689-81887-4, \$16. (P, E) This informative photo essay of the life cycle of Adelie penguins is sure to captivate curious young readers. Stunning color photographs and clear, accessible text flow in this special view of Adelie penguin chicks as they hatch and grow. A truly great invitation to learning. Author's Note, Glossary, Index. SYH (II, IV)

Human Body Revealed. Sue Davidson and Ben Morgan. Illustrated with prints and photographs. DK Publishing. 38pp. Trade ISBN 0-7894-8882-5. \$12.99. (I) Visual representations of the body are nothing new. This volume is unique in the spectacular quality and quantity of images displayed. The use of transparent templates allows the reader to "peel away" layers, revealing the interactions among bodily systems. Micrographs supplement the macroscopic descriptions to yield added dimension. Index. MJL (IV)

C Honeybees. Deborah Heligman. Illustrated by Carla Golembe. National Geographic Society. 32pp. Trade ISBN 0-7922-6678-1, \$16.95. (P, E) Captivating illustrations enhance this informative book about the life cycle, social organization, physical characteristics, and adaptations of the honeybee. The book's content is relevant to early elementary students (grades three or four) as well as the primary grades. A fun activity simulating honeybee communications is included at the end. Author's Note. LNS (IV)

Ladybugs: Red, Fiery, and Bright. Written and illustrated by Mia Posada. Carolrhoda. 32pp. Library ISBN 0-87614-334-6, \$15.95. (P) A colorful description of the ladybug's life cycle, depicted in beautiful illustrations and expressed in poetic verse. Additional information provides insight into the many variations among ladybugs—types, sizes, predator/prey concept, and their habits. Author's Note. ASM (IV, II)

Once I Knew a Spider. Jennifer Owings Dewey. Illustrated by Jean Cassels. Walker. 32pp. Trade ISBN 0-8027-8700-2, \$16.95; Library ISBN 0-8027-8701-0, \$17.85. (E) In midsummer, a mother-to-be begins observing an orb spider. In this true story, the author shares her observations of this remarkable survivor that lives through the winter. She details how the orb spider builds her web and egg sac and secures food. The author's notes provide additional information about the characteristics of the orb spider. Author's Notes. GJB (IV, II)

Paisano, the Roadrunner. Jennifer Owings Dewey. Illustrated with photographs by Wyman Meinzer. Millbrook. 48pp. Library ISBN 0-7613-1250-1, \$23.90. (E) Through the delightful true tale of a family of roadrunners nesting in the author's orchard—enhanced by photographs of the birds—we learn about the significant behaviors (mating, rearing of offspring, hunting, etc.) and characteristics (physical and social) of this unique bird species. Useful Facts, Index. LNS (IV)

Penguin Chick (Let's-Read-and-Find-Out Science series). Betty Tatham. Illustrated by Helen K. Davie. HarperCollins. 40pp. Trade ISBN 0-06-028594-X, \$15.95. Library ISBN 0-06-028595-8, \$15.89; Paperback ISBN 0-06-445206-9, HarperTrophy, \$4.95. (P) Antarctic light radiates through this delightfully illustrated account of a penguin chick's life. From nesting and egg laying to adulthood, where the cycle begins again, the author explores the life of a penguin chick in a harsh environment. A "More About Penguins" section at the back of the book describes different penguin species and suggests activities for the reader. TH (IV)

C Phineas Gage: A Gruesome but True Story about Brain Science. John Fleischman. Illustrated with photographs. Houghton Mifflin. 96pp. Trade ISBN 0-618-05252-6, \$16. (I, A) Once in a while an amazing accident occurs that leads to breakthroughs in scientific understanding. The bizarre tale documented in this book demonstrates how neuroscientists advanced our knowledge of the brain. With gripping narrative and effective visuals, the reader is taken on a journey into the workings of the mind. Glossary, Index, Web Resources. MJL (VIII, IV, I)

Pond. Written and illustrated by Gordon Morrison. Houghton Mifflin. 32pp. Trade ISBN 0-618-10271-X, \$16. (E) Changes and activities that occur over days and weeks throughout the seasons in, on, and around a pond are described. Through the narrative and illustrations the reader observes

interactions of thriving plants and animals. Insets provide additional details about these plants and animals, the seasons, and how a pond is formed. GJB (IV, V, I)

C Raptor! A Kid's Guide to Birds of Prey. Christyna M. Laubach and René Laubach and Charles W. G. Smith. Storey Kids. 128pp. Trade ISBN 1-58017-475-2, \$21.95; Paperback ISBN 1-58017-445-0, \$14.95. (I) Can't tell an accipiter from a buteo? A hawk from a falcon? Every science teacher interested in teaching about birds of prey should have this book in his or her classroom. In addition to the great photographs, maps, charts, and scientific information, *Raptor!* gives the reader a sense of responsibility for the continuation of this magnificent group of predators that soars above the rest. Author's Note, Glossary, Index. DW (IV, VII)

They Call Me Woolly: What Animal Names Can Tell Us. Written and illustrated by Keith DuQuette. G.P. Putnam's Sons. 32pp. Trade ISBN 0-399-23445-4, \$15.99; Paper ed. (F). (E) An animal's name can tell you where the animal is from, what the animal eats, what the animal looks like, or even what it sounds like! The author not only uses understandable language but also has beautifully illustrated this book to show us how many animals embody the evocative names given to them. Animal Facts. TMC (IV)

Water Hole Waiting. Jane Kurtz and Christopher Kurtz. Illustrations by Lee Christiansen. Greenwillow. 32pp. Trade ISBN 0-06-029850-2, \$15.95; Library ISBN 0-06-029851-0, \$15.89. (P) Dramatic illustrations and sensory-rich language enhance the suspense and awe encountered as animals living on the African savanna visit a water hole. To the observer, different groups of animals appear to "take turns" at the water hole. Text stimulates discussion on animal behavior. Author's Note. BBB (II, IV)

Physical Science

What Does a Wheel Do? Jim Pipe. Illustrated by Jo Moore. Copper Beech Books/Millbrook. 24pp. Library ISBN 0-7613-2722-3, \$21.90; Paperback ISBN 0-7613-1837-2, \$6.95. (P) A series of questions

are posed about how and why things move. Questions are answered by simple investigations of shapes, surfaces, and slopes using ordinary materials. Investigations are extended in the "Solve the Puzzle" question that follows each explanation of "Why It Works." Colorful illustrations clearly depict steps and materials. Index, Puzzle Answers. GJB (III, II, I)

Science-Related Careers

The Bug Scientists (Scientists in the Field series). Donna M. Jackson. Illustrated with photographs. Houghton Mifflin. 48pp. Trade ISBN 0-618-10868-8, \$16. (E, I) A lively portrayal of five entomologists whose research ranges from monarch butterfly migration and the use of insects in criminal investigations to insects in Hollywood productions and farmer ants. Bibliography with Websites, Glossary, Index, Amazing Facts. BBB (IV, II, VII)

C Looking for Life in the Universe (Scientists in the Field series). Ellen Jackson. Illustrated with photographs by Nic Bishop. Houghton Mifflin. 80pp.



Figure 3: The Bug Scientists, Copyright © 2002, written by Donna Jackson, Houghton Mifflin Co.

Trade ISBN 0-618-12894-8, \$16. (I) This inspirational book follows Jill Tartar of the Search for Extraterrestrial Intelligence (SETI) Institute as she and her colleagues search for extraterrestrial intelligence. This book discusses the science involved in the search and the day-to-day efforts of the team as well as the dreams of the young girl who became an astrophysicist. Author's Note, Bibliography, Glossary, Index, Websites for Kids. TH (II, V, VIII)

Project UltraSwan (Scientists in the Field series). Elinor Osborn. Illustrated with photographs. Houghton Mifflin. 64pp. Trade ISBN 0-618-14528-1, \$16. (E, I) Re-introduction of the trumpeter swan to the eastern United States is being facilitated using "ultralights" to teach migratory routes to the birds. This book clearly demonstrates science as inquiry and the scientific process through details of real scientists' work. Fascinating photographs help tell this story. Maps, Websites, Places to Visit. VDW (II, IV)

Secrets of Sound: Studying the Calls and Songs of Whales, Elephants and Birds (Scientists in the Field series). April Pulley Sayre. Illustrated with photographs. Houghton Mifflin. 64pp. Trade ISBN 0-618-01514-0, \$16. (E, I) Describes bioacoustic research and its contribution to animal behavioral science. A vivid portrayal of the ways of scientists: their zest for discovery; their collaborations with scientists in many disciplines; their awe and wonder of the natural world; and their recognition of problems that threaten populations and their efforts at conservation. Bibliography, Glossary, Index, Student Research Opportunities. BBB (IV, II, VI)

The Sky's the Limit: Stories of Discovery by Women and Girls. Catherine Thimmesh. Illustrated by Melissa Sweet. Houghton Mifflin. 80pp. Trade ISBN 0-618-07698-0, \$16. (I) This book describes discoveries made by women of all ages. While the author includes accounts of familiar scientists (Jane Goodall, Mary Leakey), most are stories of past and present women and school-age girls as they observe phenomena, gain knowledge, and design and conduct investigations. This book will inspire students of all ages with its emphasis on discoveries by ordinary people. Introduction, Timeline of Discoveries by Women, Further Reading, Your Turn, Index. CBR (VIII, II, VII)

Members of the Book Selection Panel

Trisha Herminghaus (TH) chairperson instructional support, science Anchorage (Alaska) School District

Bonnie Barr (BBB) professor, science education (retired) Cortland, New York

Gloria Bolton (GJB)

instructional supervisor Shelby County Schools Memphis, Tennessee

Timothy Cooney (TMC)

professor, Earth science University of Northern Iowa Cedar Falls, Iowa

Susan Hoffmire (SYH) teacher Phoenix High School Phoenix, New York

Michael Lowry (MJL)

faculty, class dean The McCallie School Chattanooga, Tennessee

Alma Miller (ASM)

educational consultant Washington, D.C.

Larry Olsen (LEO)

teacher Apopka High School Apopka, Florida

Cynthia Roepcke (CBR) science curriculum coordinator

Pickering Local Schools Pickering, Ohio

Linda Schoen (LNS)

science consultant Columbia, South Carolina

Vickie D. Weiss (VDW)

educational consultant Grand Blanc, Michigan

David Wojnowski (DW)

coordinator NCDENR/Division of Water Resources Stream Watch/Project Wet Raleigh, North Carolina

About the Books and the Selection Process

The books that appear in this annotated bibliography were selected as outstanding science trade books published in 2002. They are intended primarily for kindergarten through twelfth grade. 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 where the information is misleading;
- Generalizations are supported by facts and significant facts are not omitted; and
- Books are free of gender, ethnic, and socioeconomic bias.

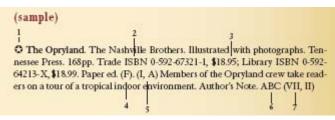
The panel also uses rigorous selection guidelines relating to the presentation of material, including the following: logical presentation and a clear sequence of ideas; appropriate content level for the intended audience; compatible text and illustrations; illustrations that are accurate representations 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 annotations reflect only the appraisal of the individual panelist whose initials follow at the end of each entry.

Publishers' names appear in abbreviated form; complete names and addresses are available from the Children's Book Council and in standard reference works such as Children's Books in Print. CBC's Members List is available from <u>www.cbcbooks.org</u>, or send \$2 and a self-addressed 6" x 9" envelope with 83¢ postage to the Children's Book Council, Attn: Publications, 12 West 37th Street, New York, NY 10018-7480.

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 *National Science Content Standards* (see explanation below) to which the books relate. Where more than one standard is listed, the most applicable standard is given first.

About the Annotations



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

- 1. Titles marked with 😳 are Selectors' Choices—books that individual panel members responded to with particular enthusiasm.
- 2. International Standard Book Numbers (ISBN) are included for all available editions (trade, library, and paperback).

- 3. The prices are current as of January 2005.
- 4. The notation Paper ed. (F) indicates that a paperback edition is forthcoming and whether the publisher is different from the hardcover edition.
- 5. Reading levels [P = Primary (K–2); E = Elementary (3–5); I = Intermediate (6–8); A = Advanced (9–12)] are provided by the reviewers. They are intended as guidelines and are not meant to limit the potential use of titles.
- 6. The reviewer's initials follow each description (see Members of the Book Selection Panel).
- 7. The most relevant National Science Content Standards are indicated by Roman numerals (see below).

National Science Content Standards

I Unifying Concepts and Processes II Science as Inquiry III Physical Science IV Life Science V Earth and Space Science VI Science and Technology VII Science in Personal and Social Perspectives VIII History and Nature of Science

About CBC and NSTA

The Children's Book Council (CBC) is the not-for-profit trade association of U.S. children's book publishers and packagers, and encourages the use and enjoyment of children's books and related literacy materials. CBC is the official sponsor of National Children's Book Week and Young People's Poetry Week. For more information, see www.cbcbooks.org.

The National Science Teachers Association (NSTA) is an organization of science education professionals and has as its purpose the stimulation, improvement, and coordination of science teaching and learning. For further information on NSTA membership and services, call 800-722-NSTA.

Single copies of this list are available for \$2.00 with a stamped (3 oz.) self-addressed 6" x 9" envelope with 83¢ postage to CBC at 12 West 37th St., 2nd fl, New York, NY 10018-7480. 10–24 copies, \$1.50 each; 25 or more copies, \$1.00 each. Payment must accompany order.