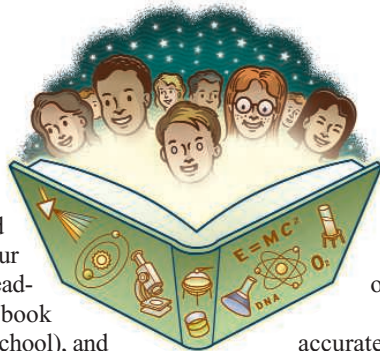


FOR YOUNGER READERS

Science Books for Fun and Learning— Some Recommendations from 2008

Are there children or young adults on your holiday gift list whose interest in science you are trying to encourage? If so, you may wish to consider the finalists for the 2009 *Science Books and Films* Prizes for Excellence in Science Books. These honor works that further the understanding and appreciation of science in younger readers. Sponsored by the AAAS and Subaru, they are awarded in four categories: children's science picture book (for readers in grades K to 4), middle grades science book (grades 5 to 8), young adult science book (high school), and hands-on science/activity book (any age). Again this year, the finalists for the young adult award are generally not books specifically intended for that age group—rather, they were written for the general



public. The titles considered for the 2009 prizes were published between September 2007 and August 2008.

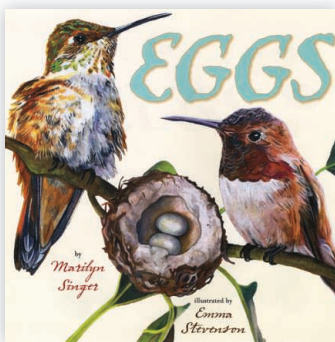
Here, we present our short descriptions of the 19 finalists chosen by panels of librarians, educators, and scientists. Full reviews of each book have been published or will appear in *Science Books and Films*, and AAAS members can read these reviews on the Web. The four winners will be announced in January and honored at the AAAS Annual Meeting in Chicago in February.

The criteria for evaluating the books include a clear and accurate presentation of scientific concepts. But we and the judges hope that the finalists will encourage young readers to turn to science books for pleasure as well as for information.

—Heather Malcomson,¹ Barbara Jasny, and Sherman Suter

Children's Science Picture Book

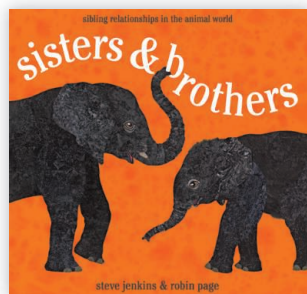
Eggs. Marilyn Singer, illustrated by Emma Stevenson. Holiday House, New York, 2008. 32 pp. \$16.95. ISBN 9780823417278.



Eggs provide a shelter in which a developing animal can breathe, be nourished with food and drink, and grow. They are laid by birds, invertebrates, fish, amphibians, reptiles, and even some mammals. Singer presents examples of their innumerable shapes, sizes, colors, and patterns. She also discusses how burial, brooding, and nests protect eggs, and she describes varieties of hatching. Stevenson's detailed gouache paintings convey the eggs' allure.

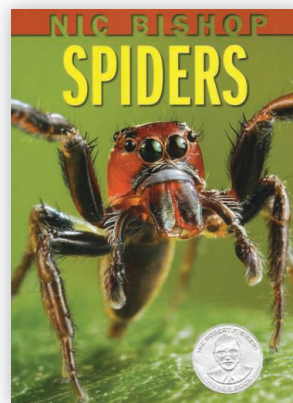
Sisters and Brothers: Sibling Relationships in the Animal World. Steve Jenkins (illustrator) and Robin Page. Houghton Mifflin, Boston, 2008. 32 pp. \$16. ISBN 9780618375967.

Animals and families always fascinate children, but the facts about siblings that fill this book will also engage adults. For example, young shrews line up holding each others' tails, with the mother leading the way. Female termites lay 30,000 eggs a day, whereas giant anteaters are always single offspring. Nile crocodiles cooperate even before they hatch, but hyena cubs can fight to the death. The authors' collages are sure to appeal to young readers.



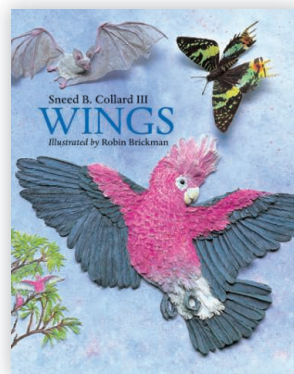
Spiders. Nic Bishop. Scholastic, New York, 2007. 48 pp. \$17.99, C\$19.99. ISBN 9780439877565.

Spider enthusiasts and arachnophobes alike will be drawn to the amazing, up-close photographs in this informative introduction to these eight-legged predators. The concise, well-written text offers numerous interesting facts about spiders. For example, they were among the earliest terrestrial predators, having arisen more than 350 million years ago. And although "silk is the secret of spider success," many of the more than 38,000 species do not use webs. Fishing spiders dart over the water's surface, and some jumping spiders can leap 20 times their body length to pounce on prey.



Wings. Sneed B. Collard III, illustrated by Robin Brickman. Charlesbridge, Watertown, MA, 2008. 32 pp. \$16.95. ISBN 9781570916113. Paper, \$7.95. ISBN 9781570916120.

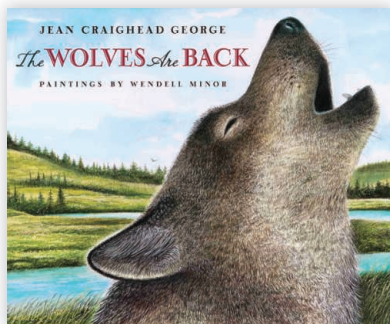
Insects, birds, and bats all move through the air on wings. Collard introduces the diversity of these appendages and their uses. Wings can be covered with scales, feathers, or bare skin. They allow peregrines to twist and turn in a dive, leaf-nosed bats to lazily flap over the ground, milkweed bugs to move short distances among patches, and Arctic terns to migrate between the polar regions. They help animals chase, catch, flee, and mate. To illustrate this variety, Brickman sculpted painted paper into colorful collages.



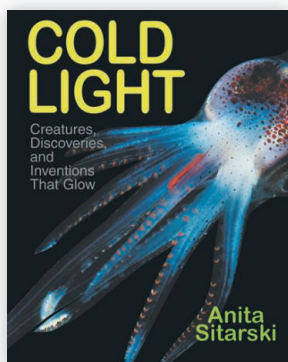
¹Science Books and Films, 1200 New York Avenue NW, Washington, DC 20005, USA. E-mail: hmalcoms@aaas.org

The Wolves Are Back. Jean Craighead George, illustrated by Wendell Minor. Dutton Children's, New York, 2008. 32 pp. \$16.99. ISBN 9780525479475.

Because "only the gentle animals should grace the beautiful wilderness," the wolves of Yellowstone were once shot until they were eliminated. However, with changed values and the yearning to again hear howls in the wild, wolves were reintroduced to the national park in 1995. As the wolves multiplied, wildflowers reappeared (wolves chased away the mountain sheep that had eaten them) and birds returned (wolves hunted bison and elk that had trampled young aspen needed for perches and grasses needed for food). By following along as a wolf pup wanders the Lamar Valley, readers learn how wolves are even important to halting river-bank erosion. George's simple text and landscape artist Minor's beautiful illustrations convey the importance of maintaining all parts of ecosystems.



Middle Grades Science Book



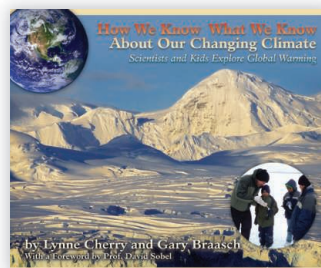
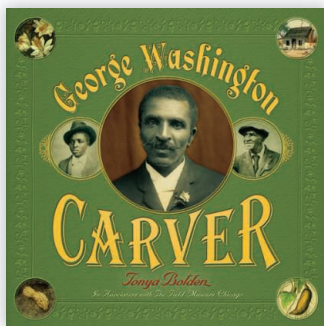
Cold Light: Creatures, Discoveries, and Inventions That Glow. Anita Sitarski. Boyd's Mills Press, Honesdale, PA, 2007. 48 pp. \$16.95. ISBN 9781590784686.

This book's theme can be described as make light, not heat. Sitarski offers an information-packed but reader-friendly account of chemical and biological sources of luminescence along with important discoveries from 1602 through to today's light-emitting diodes. Of course there are photos of fireflies and jellyfish, but the intriguing images also include a glowing chicken and art by Montana State

University students who covered the walls of a darkened gallery with dishes containing luminescent marine bacteria. Very cool indeed!

George Washington Carver. Tonya Bolden. Abrams Books for Young Readers (Abrams), New York, in association with the Field Museum, Chicago, 2008. 42 pp. \$18.95, C\$20.95, £9.95. ISBN 9780810993662.

Peanuts, sweet potatoes, and soybeans (and the products made from them) were key interests of horticulturist, educator, and inventor Carver. The ex-slave's research and teaching, which stressed scientific farming and soil conservation, helped improve agriculture in the South. Bolden's eloquent telling of Carter's life and accomplishments is enhanced with quotes from him and his contemporaries. The historical photos; evocative artifacts; and Carter's own drawings, paintings, and scientific illustrations will help captivate young readers.



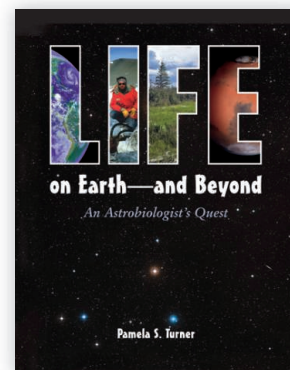
How We Know What We Know About Our Changing Climate: Scientists and Kids Explore Global Warming. Lynne Cherry and Gary Braasch. Dawn, Nevada City, CA, 2008. 66 pp. \$18.95. ISBN 9781584691037.

The title is accurate. The authors survey a wide range of indications that Earth's climate is changing. These clues include

the earlier spring arrivals of migrating birds, earlier blooming by wildflowers and Washington, DC's cherry trees, melting glaciers and icecaps, microfossils from cores of mud from the ocean floor, and bubbles of ancient air retrieved from cores of glacial ice. In his earlier *Earth Under Fire*, photojournalist Braasch visited climate researchers in the field to document their discoveries. Here he and Cherry (a seasoned author of environmental books for children) also spotlight citizen science and (especially) data that can be, and are, collected by children. They explain why data and computer models indicate that anthropogenic greenhouse gases are making our world warmer. Along the way, Cherry and Braasch remind readers of the importance of using data to test hypotheses. Reflecting the book's hopeful perspective, the authors suggest numerous things that kids and families can do to reduce their climatic footprint. An extensive list of Web sites and books offers additional "sources of information, inspiration, and action."

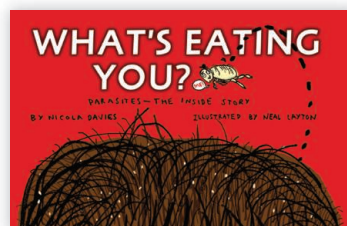
Life on Earth—And Beyond: An Astrobiologist's Quest. Pamela S. Turner. Charlesbridge, Watertown, MA, 2008. 108 pp. \$19.95. ISBN 9781580891332. Paper, \$11.95. ISBN 9781580891349.

Turner approaches astrobiology through the experiences of NASA scientist Chris McKay. Most chapters resemble a travelogue, as she describes his excursions around the world. He visits Antarctica's Dry Valleys, the Atacama and Sahara deserts, permafrost-covered tundra in Siberia, and the bottom of an Antarctic lake permanently capped by ice. Weaving the underlying science into her narrative, she explains how studying microbes from these extreme environments helps us understand whether life can exist in similar situations on Mars or another planet.

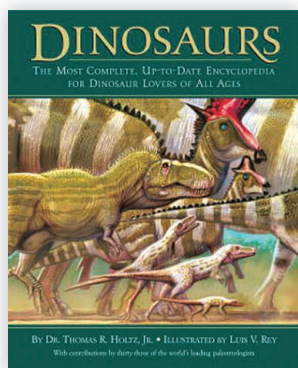


What's Eating You? Parasites—The Inside Story. Nicola Davies, illustrated by Neal Layton. Candlewick, Cambridge, MA, 2007. 60 pp. \$12.99, C\$16. ISBN 9780763634605.

This account of animals that live on or in other animals is more likely to delight than disgust. Zoologist Davies explains the advantages parasites find in being small and able to change body form during their lives. He describes the challenges they face in moving among hosts—a point reinforced in a playable "two-host tapeworm game." He also discusses parasites' amazing life cycles, their effects on hosts (including some benefits and examples of "mind control"), and some of the ways the hosts fight back. Layton's clever drawings complement the informative text.



Young Adult Science Book



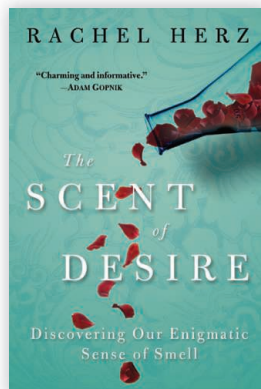
Dinosaurs: The Most Complete, Up-to-Date Encyclopedia for Dinosaur Lovers of All Ages. Thomas R. Holtz Jr., illustrated by Luis V. Rey. Random House, New York, 2007. 432 pp. \$34.99, C\$44. ISBN 9780375824197.

Anyone with even a passing interest in dinosaurs should not miss this journey into their diverse and strange world. Holtz and his colleagues fill the book with fascinating details ranging from discoveries of new species (e.g., a sauropod, *Amphicoelias*, with a mass of 18 elephants) to old favorites (e.g., *Tyrannosaurus rex*, which may have lived and hunted in

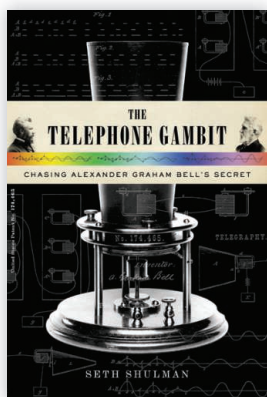
packs). They cover major and minor groups, predator-prey relations, social interactions within species, habitats and habits, and evolutionary trends. With its conversational tone and Rey's engaging illustrations, the book should appeal to young adults and a general audience alike.

The Scent of Desire: Discovering Our Enigmatic Sense of Smell. Rachel Herz. Morrow, New York, 2007. 288 pp. \$24.95. ISBN 9780060825379.

Far from a prissy survey of perfumes and odor—it starts with the suicide of a rock singer who had lost his sense of smell—this book explores how and why smell is such a central component of our lives. Explaining basic neurobiological principles in clear language, Herz intermixes them with stories and personal accounts of her research and experiences. She describes olfactory technologies, such as the development of electronic noses, that are already beginning to be used in the food industry and might even help diagnose diseases. She also dreams of a gel that would boost olfactory receptor function and restore sensation to older individuals. Her account will stimulate readers' interests in psychology and neuroscience.



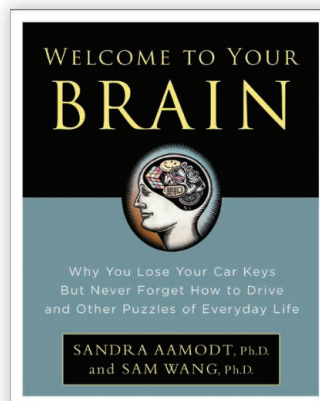
The Telephone Gambit: Chasing Alexander Graham Bell's Secret. Seth Shulman. Norton, New York, 2008. 256 pp. \$24.95, C\$27.50. ISBN 9780393062069.



Who invented the telephone? Most people would answer Alexander Graham Bell—recall “Mr. Watson, come here!” In this well-researched and well-written account, Shulman argues that Bell furtively copied crucial aspects of his device from a patent application by Elisha Gray. The author weaves science, intrigue, and romance into a fast-paced narrative. He lays his evidence out clearly while carrying readers through the steps he took to build his thought-provoking case. [For a full review, see D. L. Morton Jr., *Science* **319**, 1188 (2008).]

Welcome to Your Brain: Why You Lose Your Car Keys But Never Forget How to Drive and Other Puzzles of Everyday Life. Sandra Aamodt and Sam Wang. Bloomsbury, New York, 2008. 240 pp. \$24.95. ISBN 9781596912830.

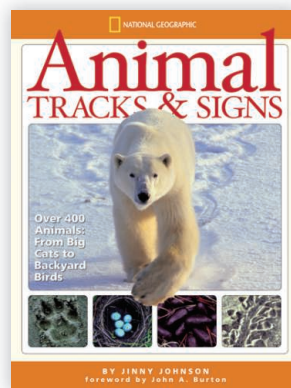
The neuroscientist authors offer a highly accessible and richly informative “user’s guide” to our brains. They cover a broad range of topics, offering up-to-date information directed to answering questions of the curious public. They supplement their narrative with frequent and quite extensive sidebars that debunk myths, focus on specific issues, and offer practical tips. Eschewing didactical lecturing, their friendly and informal writing effectively draws the reader into a comfortable, interesting, and informative dialogue.



Hands-On Science/Activity Book

Animal Tracks and Signs. Jinny Johnson. National Geographic, Washington, DC, 2008. 192 pp. \$24.95, C\$27.95. ISBN 9781426302534. Marshall (Quarto), London. £16.95. ISBN 9781845388904.

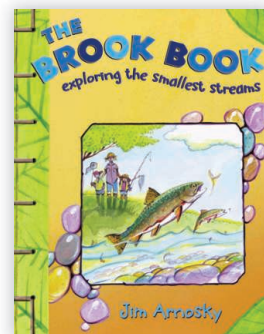
Whether they inhabit backyards, local fields or woods, or wilderness parklands, most animals can be hard to sight. But they do leave clues to their activities: tracks, nests, feeding remains, and dung. Johnson gives pointers on how to notice, record, and interpret such signs. In addition, she includes basic facts about the animals themselves. Mammals garner the most attention, while amphibians, reptiles, birds, insects, and other invertebrates are discussed in shorter sections. Although the book’s global scope limits its coverage to some 400 selected examples, the information can often also be applied to closely related species. This appealing introduction should



lead nature enthusiasts to seek additional details in field guides with a more restricted focus.

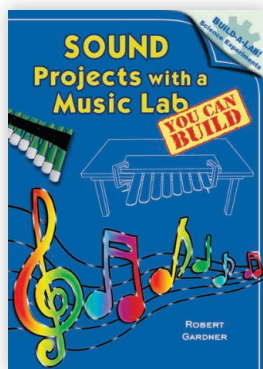
The Brook Book: Exploring the Smallest Streams. Jim Arnosky. Dutton Children's, New York, 2008. 28 pp. \$15.99, C\$19. ISBN 9780525477167.

Budding naturalists who have access to any narrow, shallow stream will find this an inviting guide to the variety of observations they can make. It begins with appropriately simple explanations of the sources and fates of the water in a brook. There are plenty of activities to satisfy young explorers, including sketching flowers, collecting smooth stones, examining aquatic insects, watching birds, and looking for animal tracks. Parents will appreciate the emphasis on safety, while children should be attracted by Arnosky's alluring text and charming illustrations (which feature flora and fauna of Vermont, where he farms).



Sound Projects with a Music Lab You Can Build. Robert Gardner. Enslow, Berkeley Heights, NJ, 2008. 128 pp. \$31.93. ISBN 9780766028098. Build-a-Lab! Science Experiments.

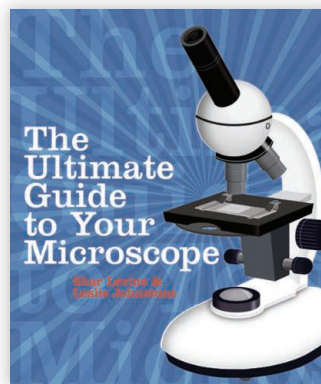
Gardner lays out hands-on experiments that explore such topics as how sounds form and travel; properties of standing waves and harmonics; and aspects of string, wind, and percussion instruments. He adroitly balances open-ended questions and necessary background information, thus enticing students to actually investigate phenomena to obtain answers. Many of the 35 experiments offer intriguing ideas for elementary or middle school science fairs. The book will reward self-motivated students who are seeking challenges in problem solving.



activities range from the obvious (use cloth bags, turn down your heat) to the creative and fun (set up a local carbon trading card system, help organize a trash-free lunch day at school). Each is described on a single page, which makes the book perfect for browsing. For those who want to do still more, the authors suggest ways to learn about jobs that will help our environment.

The Ultimate Guide to Your Microscope. Shar Levine and Leslie Johnstone. Sterling, New York, 2008. 144 pp. Paper, \$9.95, C\$11.95. ISBN 9781402743290.

Most students find their introduction to microscopes boring. They are shown a diagram of parts and given a couple of exercises that demonstrate the instruments' capabilities. The authors offer a lively alternative. After covering the basics and how to make various types of slides, they describe 41 projects involving easy-to-obtain objects such as pet hair, dead bugs, food molds, and clover. Their instructions, discussions of what is likely to be seen, and color photomicrographs should inspire readers to explore the tiny facets of our world.



10.1126/science.1167971



True Green Kids: 100 Things You Can Do to Save the Planet. Kim McKay and Jenny Bonnin. National Geographic, Washington, DC, 2008. 144 pp. \$27.90, C\$33. ISBN 9781426304439. Paper, \$15.95, C\$18. ISBN 9781426304422.

Youngsters who wish to join the green movement will enjoy this book. The 100

BROWSINGS

Physics: Why Matter Matters! Dan Green and Simon Basher (illustrator). Kingfisher, London, 2008. 128 pp. Paper, £6.99. ISBN 9780753416822. New York, \$8.95, C\$9.95. ISBN 9780753462140.

To introduce matter, energy, and their interactions, the authors present a cast of colorful characters. These range from classic members of our everyday world (such as force and inertia) to the flavorful quarks and the yet-to-be-found Higgs boson.

The Way We Work: Getting to Know the Amazing Human Body. David Macaulay, with Richard Walker. Houghton Mifflin, Boston, 2008. 336 pp. \$35. ISBN 9780618233786.

Renowned for his elaborately illustrated accounts of the hows and whys of buildings and machines, Macaulay here turns to human anatomy and physiology. After a brief introduction to biomolecules and cells, he leads readers from cells through organs to our body's complex, integrated systems for transporting oxygen, processing food, controlling actions, fighting infections, moving, and creating offspring. The detailed colored-pencil drawings and concise text both exhibit the authors' effective fusion of information and humor.

