

# Picture-Perfect SCIENCE

## ***Favorite Children's Picture Books for Teaching Science in Grades K-6***

The following books are a selection of our favorite science-related picture books aligned with the National Science Education Standards for kindergarten through grade six.

See also <http://www.nsta.org/ostbc> for the Outstanding Science Trade Books for Children (a cooperative project between the National Science Teachers Association and the Children's Book Council).

*\*Indicates titles featured in **Picture-Perfect Science Lessons: Using Children's Books to Guide Inquiry Grades 3-6, Revised Expanded 2<sup>nd</sup> Edition** by Karen Ansberry and Emily Morgan (published by NSTA Press).*

*\*\* Indicates titles featured in **More Picture-Perfect Science Lessons: Using Children's Books to Guide Inquiry Grades K-4** by Karen Ansberry and Emily Morgan (published by NSTA Press).*

### **SCIENCE AS INQUIRY**

***Big Tracks, Little Tracks: Following Animal Prints.*** Millicent E. Selsam. HarperTrophy (1999). This *Let's-Read-and-Find-Out Science* book (Stage 1) shows readers that keeping a sharp eye out for clues like animal tracks and odors can help them infer the identity of the animals that have passed through an area.

***Being a Scientist.*** Natalie Lunis and Nancy White. Newbridge Educational Publishing (1999). Children discover that they are already scientists when they explore some of the key science skills, such as observing, measuring, and recording data. Available in big book format.

***Counting on Frank.*** Rod Clement. Gareth Stevens Publishing (1991). This is a story about a boy who likes to ask questions about the ordinary things around us like ball-point pens, peas, and his dog Frank. The best and biggest question is of course, "What if...?" "What if I drew with this ball point pen until it ran out, how long would the line be? What if I ran this bath and the room filled up with water, how long would that take?" These are the sort of questions that all kids ask. The difference is that this kid has the answers. This is a great introduction to questioning, estimating, counting, and calculating in science.

***\*Dr. Xargle's Book of Earthlets.*** Jeanne Willis. Andersen Press (2003). This outrageously funny picture book features a green alien known as Dr. Xargle, who instructs his class on the appearance and habits of "Earthlets" (human babies) before embarking on a field trip to Earth. Bath-time, feeding and changing diapers are all given a new slant through Dr. Xargle's wildly incorrect inferences about human behavior. Use this book to spark discussion on the difference between observation and inference.

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**\*\* How Big is a Foot?** Rolf Myller. Young Yearling (1962). The King has a problem. He wants to give the Queen a bed for her birthday, but no one knows the answer to the question "How big is a bed?"

**How Many Seeds in a Pumpkin?** Margaret McNamara. Schwartz & Wade Books (2007). "How many seeds in a pumpkin?" Mr. Tiffin asks his class as they gather around the big, medium, and small pumpkins on his desk. Counting pumpkin seeds is messy business, but once the slimy job is done, to everyone's surprise, the smallest pumpkin has the most seeds! This book captures the fun and excitement of a math and science project that can be undertaken in your own classroom as you read along.

**\*\*How Tall, How Short, How Far Away.** David Adler. Holiday House (1999). This fun, cartoonishly-illustrated book explains how systems of measuring developed in ancient Egypt and Rome; how measurements became standardized; the origin of the metric system; and methods of measuring length, height, and distance. The text's simplicity makes the ideas clear and easy to follow. A good basic book for children who are learning measurement using either the customary or metric system or (more likely) both.

**In the Snow: Who's Been Here?** Lindsay Barrett George. Greenwillow Books (1995). Two children on their way to go sledding see evidence of a variety of animal life. The reader must infer from the evidence what animals had been in each location. Each time, the answers are revealed on the next page. Also by this author: **Around the Pond: Who's Been Here?** and **In the Woods: Who's Been Here?**

**Investigating Your Backyard.** Natalie Lunis. Newbridge Educational Publishing (1999). Children learn that nature is all around them. Whether their backyard is a park, a seashore, or a patch of grass, it is full of discoveries waiting to be made. Available in big book format.

**Is a Blue Whale the Biggest Thing There Is?** Robert E. Wells. Albert Whitman and Co. (1993). Relative sizes--of whales, mountains, planets, galaxies, etc.--illustrated with stacked bowls containing 100 whales, stacked Mt. Everests, bags holding 100 Earths next to the sun, 100 suns, etc. This book about numbers and size should foster an appreciation of scale and accuracy.

**Just a Little Bit.** Ann Tompert. Houghton Mifflin/Walter Lorraine Books. (1996). When an elephant and a mouse try to play on a seesaw, they need help from a vast number of animal friends to balance the scales.

**Let's Experiment.** Natalie Lunis and Nancy White. Newbridge Educational Publishing (1999). Questions, predictions, hypotheses, observations, records, conclusions – children get hands-on practice through a series of classroom experiments. Available in big book format.

**\*\*Lucas and His Loco Beans: A Bilingual Tale of the Mexican Jumping Bean.** Ramona Moreno Winner. Brainstorm 3000 (2003). With English as the main language, Lucas tells the story of a summertime visit to his grandfather's ranch, where he learns about the Mexican Jumping Bean and how his abuelo (grandfather) collected them to play with as a boy. Grandfather tells Lucas about the moth larva that inhabits the bean until it turns into a moth. In the back of the book there are four pages of diagrams explained in both Spanish and English. Makes a great follow-up to an inquiry activity with Mexican Jumping Beans.

**Me and My Senses.** Joan Sweeney. Crown Books for Young Readers (2003). Full of easy-to-understand text and bright corresponding illustrations Sweeney's readers have come to expect, *Me and My Senses* introduces children to the five senses and teaches the basics of how they work.

**My Five Senses.** Alikei. HarperCollins (1989). Sight, smell, taste, hearing, and touch – our senses teach us about the world. Children discover how they use their five senses.

**Measuring Penny.** Loreen Leedy. Henry Holt and Co. (1997). Lisa learns about measurement by measuring her dog Penny with all sorts of units, including pounds, inches, dog biscuits, and cotton swabs.

**\*Popcorn!** Elaine Landau. Charlesbridge (2003). Full of information about popcorn, including where it comes from, its history, and what makes it pop.

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***The Popcorn Book.*** Tomie de Paola. Holiday House (1978). Presents a variety of facts about popcorn and includes two recipes. Read to students before testing the question, "Which brand of popcorn pops the most kernels?"

***Popcorn Plants.*** Kathleen V. Kudlinski. Learner Publications Company (1998). With the help of detailed photographs, this book describes the life cycle of a popcorn plant. It begins with the farmer planting the seeds and ends with the kernel exploding.

***Science Tools.*** J.A. Randolph. Newbridge Educational Publishing (1999). Students learn how to measure, collect specimens, and gather data, and the importance of data to a scientist. Available in big book format.

***Scientists Ask Questions.*** Ginger Garrett. Children's Press (2004). This Rookie Read-About Science book introduces young readers to scientific investigation. Colorful photos and simple text encourage children to read on their own as they learn how scientists use tools and conduct experiments to answer questions.

***\*Seven Blind Mice.*** Ed Young. Philomel (1992). In this retelling of the classic fable, each of seven blind mice visits an elephant and infers that he has discovered a pillar, a snake, a cliff, a spear, a fan, or a rope. But the seventh mouse is the only one who investigates the whole object and through careful observations is able to discern that it is an elephant. Illustrates the importance of making careful observations and collecting evidence to develop explanations. Be sure to initiate a discussion on anthropomorphism after reading the book together.

***Tiger Math: Learning to Graph from a Baby Tiger.*** Ann Whitehead Nagda and Cindy Bickel. Henry Holt (2000). T.J., a tiger cub whose mother at the Denver Zoo died when he was only ten weeks old, was raised by the zoo hospital. Appropriate picture, bar, circle, and line graphs depict T.J.'s weight gain, his father's weight at the same age, and how much meat T.J. ate as he grew, while crisp color photos show the young tiger cub's antics. This is one of the few trade books available to supplement classroom units on graphing. Measure and chart a class pet's growth while reading the book.

***Weight.*** Henry Pluckrose. Children's Press (1995). Vibrantly colored photographs of familiar objects combine with informative text to teach children about weight.

***What's Smaller Than A Pygmy Shrew?*** Robert E. Wells. Albert Whitman and Co. (1995). Using humorous illustrations, this volume facilitates readers' understanding of the relative term "small". Beginning with the eight centimeter pygmy shrew, the author depicts a diminishing progression from ladybug to protozoa, bacteria, and finally to the atom and its constituent parts.

***Whose Tracks are These? A Clue Book of Familiar Forest Animals.*** Jim Nail. Roberts Rinehart Publishers (1994). Students look at illustrations and listen to text that give them clues about animals that live in the forest. The following page shows the animal. This book is a great way to introduce the fact that scientists use evidence to form their conclusions and explanations. After students guess the name of the creature, they can be asked to provide evidence to support their guesses before the creature is revealed.

***What is a Scientist?*** Barbara Lenn. Millbrook Press (1998). Simple text and photographs depict children engaged in various activities that make up the scientific process.

***You Can't Taste A Pickle With Your Ear.*** Harriet Ziefert. Handprint Books (2002). Using a combination of clear information and gentle humor, the book introduces children to their five senses. Written in playful verse, yet scientifically accurate, and illustrated with fresh art and simple diagrams.

***Zoom.*** Istvan Banyai. Puffin Books (1995). Nothing is ever as it seems in this wordless book of pictures within pictures. Gives students a fun way to practice the scientific skills of observation, inquiry, and prediction.

## **PHYSICAL SCIENCE**

***Amusement Park Science.*** Dan Greenberg. Newbridge (2002). Learn the role science plays in rides such as the bumper cars, carousels, roller coasters, and more.

***And Everyone Shouted “Pull!”: A First Look at Forces and Motion.*** Claire Llewellyn. Picture Window Books (2004). Hop on the cart and join the farm animals as they find out how to take their heavy load on the hilly journey to market.

***The Berenstain Bears Ride the Thunderbolt.*** Jan and Stan Berenstain. Random House Books for Young Readers (1998). Readers will love spending a day at the Bear Country Amusement Park, where they'll experience the stomach-dropping, heart-stopping thrills of a giant roller coaster right along with the Berenstain Bears.

***Bartholemew and the Oobleck.*** Dr. Seuss. Random House (1949). An ooey-gooley, green oobleck was not exactly what the king had in mind when he ordered something extra-special from his royal magicians. Great for an introduction to making polymers or cornstarch-and-water “oobleck.”

***\*\*Bubble, Bubble.*** Mercer Mayer. Gingham Dog Press (1973). With magic bubble solution, a boy discovers that he can blow any kind of bubble imaginable: a kangaroo, a bird, a car, or a boat.

***Day Light, Night Light.*** Franklyn M. Branley. Scott Foresman (Revised 1998). Branley offers an elementary explanation of properties of light: reflective light, speed of light, and what happens inside an electric light bulb. Sunlight, candlelight, flashlight, campfire, lanterns, and stars are discussed. Simple experiments, such as placing a white plate in a dark room, provide hands-on opportunities for young learners.

***A Drop of Water: A Book of Science and Wonder.*** Walter Wick. Scholastic Press (1997). Easy-to-read text and exquisite photographs explain the concepts of evaporation, condensation, capillary action, and surface tension. The camera halts and magnifies the action so all states of water can be observed. A collection of simple, exceptional experiments offers way to further investigate the principles of water transformation.

***\*Electrical Circuits.*** Lewis Parker. Perfection Learning (2005). This overview of electricity includes electricity in nature, current electricity, battery power, and how various types of electric circuits work.

***Electricity.*** Karen Bryant-Mole. Heinemann (1998). This non-fiction chapter book explains the basic principles of electricity by using everyday experiences. Includes simple, hands-on activities that children can do themselves.

***Energy: Heat, Light, and Fuel.*** Darlene Stille. Picture Window Books (2004). This nonfiction chapter book is a delightful introduction to energy resources – how energy gets things done, where energy comes from, and how to conserve energy. The cartoonish illustrations and “fun facts” sections enhance the simple, straightforward text.

***Essential Energy Series.*** Robert Snedden. Heinemann Library (2001). Through photographs, charts, captions, and fact boxes, this series looks at renewable and nonrenewable energy resources, how they are used, and how they impact the environment. Titles include: *Energy Alternatives*, *Energy from Fossil Fuels*, and *Energy Transfer*.

***Forces (Science All Around Me).*** Karen Bryant-Mole. Rigby Interactive Library (1997). Vivid photographs, clear text, and a variety of simple experiments help readers explore forces in the world around them. Includes table of contents, glossary, and index.

***Forces and Motion.*** Lisa Trumbauer. Newbridge Educational Publishing (1998). Through full-color photographs and examples from everyday life, this nonfiction book introduces basic concepts of motion. Available in big book format.

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**Forces and Motion: My World of Science.** Angela Royston. Heinemann (2003). Color photographs and simple text provide an explanation of forces and motion and examples from everyday life.

**Gerald McBoing Boing.** Dr. Seuss. Random House (reissued 2000). Based on Seuss's animated film of 1951, the tale involves Gerald, a young boy who makes not words but noises. He boings, honks, cuckoos, and booms, while his parents despair and his school expels him. He tries to run away, but at the last moment a voice calls his name. It is the owner of the "Bong Bong Bong Radio Station." He promptly hires Gerald for his noisemaking talent... for radio voiceovers! Children learn that it's OK to be different, and that everyone has special talents. Provides a fun introduction to a unit on sound.

**Freezing and Melting.** Robin Nelson. Lerner Publications (2003). Summarizes how water changes from a solid to a liquid and back again, and introduces related facts such as that water freezes at thirty-two degrees Fahrenheit and that ice floats.

**\*How People Learned to Fly.** Fran Hodgkins. HarperCollins (2007). Reveals the many obstacles that have been overcome in the history of human flight and explains the four forces of flight with simple text and illustrations.

**\*\*I Fall Down.** Vicki Cobb. HarperCollins (2004). Simple experiments introduce the concept of gravity and its relationship to weight.

**I Get Wet.** Vicki Cobb. HaperCollins Juvenile Books (2002). A boy learns some of the properties of water through pouring it into different containers, observing it drip and flow, and trying to absorb it with waxed paper and paper toweling. This book encourages children to experiment and provides well-written explanations.

**\*\*I See Myself.** Vicki Cobb. Harpercollins Juvenile Books (2002). A little girl finds out about vision, light, and reflection by playing with a mirror, a flashlight, and a bouncing ball. This book encourages children to experiment and provides well-written explanations even very young children will understand.

**Investigations series: Floating, Pulling, Pushing, Rolling, Sliding.** Patricia Whitehouse. Heinemann (2003). This series for primary students takes an inquiry-based approach to helping them make observations about force and motion. Each book consists of five separate experiments related to the titles and includes photographs and headings in the form of questions.

**\*Kids' Paper Airplane Book.** Ken Blackburn and Jeff Lammers. Workman (1996). This activity book provides information on the principles of aerodynamics, suggestions for designing airplanes, and instructions for folding paper planes and doing stunts.

**Let's Try it Out in the Water.** Seymour Simon. Aladdin Paperbacks (2001). Presents simple activities and experiments that demonstrate buoyancy by observing why some things sink and others float in water. Helps students learn to classify objects by their physical properties.

**The Magic School Bus in the Haunted Museum: A Book about Sound.** Linda Beech (1995). From an episode of the TV series The Magic School Bus, Ms. Frizzle's class visits a haunted museum where they learn about the science of sound.

**The Magic School Bus Plays Ball: A Book about Forces.** Joanna Cole. Scholastic (1998). On a field trip inside a physics book, Ms. Frizzle's class plays baseball in a world without friction and learns all about friction and forces.

**The Magic School Bus Taking Flight: A Book about Flight.** Gail Herman. Scholastic (1997). Ms. Frizzle and her class shrink to fit inside a model airplane and learn about how wings and moving air affect flight.

**The Magic Toolbox.** Mie Araki. Chronicle Books (2003). Fred the rabbit is having trouble building things, but with the help of a magic toolbox, he designs a house on paper and then successfully constructs it.

**\*\*Magnetic and Nonmagnetic.** Angela Royston. Heinemann (2003). This *Heinemann First Library* series introduces magnetism by way of everyday situations and objects. It contains colorful photos, as well as activities and questions to encourage further exploration.

**Magnets.** Karen Bryant-Mole. Heinemann (1998). This non-fiction chapter book explains the basic principles of magnetism by using everyday experiences. Includes simple, hands-on activities that children can do themselves.

**Materials: My World of Science.** Angela Royston. Heinemann (2003). Readers are introduced to materials by way of everyday situations and objects.

**Matter: See It, Touch It, Taste It, Smell It.** Darlene Stille. Picture Window Books (2004). This engaging nonfiction chapter book explores the kinds of matter, changing states of matter, and ways to describe matter. Cartoonish illustrations accompany the simple, straightforward text. Includes hands-on activities, fun facts, and a glossary.

**Meet the Orchestra.** Ann Hayes. Voyager Books (1995). This lyrical introduction to the orchestra begins with animal musicians slowly gathering for the evening performance. Each instrument of the orchestra—from oboes to timpani—is explained, with clear definitions as well as information on how each one sounds.

**Motion: Push and Pull, Fast and Slow.** Darlene Stille. Picture Window Books (2004). This engaging nonfiction chapter book explores how things move, inertia, gravity, and friction. Cartoonish illustrations and fun facts accompany the simple, straightforward text.

**Natural and Man-Made: My World of Science.** Angela Royston. Heinemann (2003). Color photographs and simple text provide an explanation of the differences between natural and man-made materials, including their uses in everyday life.

**Old MacDonald Had a Woodshop.** Lisa Shulman. Putnam Publishing (2002). This fun twist on a familiar song envisions Old MacDonald as a capable, bespectacled sheep, who's busy building something "in her shop." One by one her animal friends and neighbors drop by and take up various tools a hammer ("with a tap tap here/ and a tap tap there"), a file ("with a scritch scratch here/ and a scritch scratch there") and so on and join in on the project. Soon, the whole barnyard is busily employed until the very end when Old MacDonald unveils a scale replica masterpiece of their very own home ("and in her shop she had a farm!"). Helpful in teaching about types and uses of tools.

**Otto: The Story of a Mirror.** Ali Bahrapour. Farrar Strauss Giroux (2003). Otto is a mirror and he is tired of reflecting the customers at Mr. Topper's Hat Store. To make his job more fun, he begins distorting the reflections of the customers, making Mr. Topper very angry. Eventually, Otto manages to escape and have the adventures he had always dreamed of having. This quirky story is a fun introduction to a lesson about concave and convex mirrors.

**\*Pancakes, Pancakes!** Eric Carle. Aladdin Library (1998). Jack's mother is cooking pancakes for breakfast. But first, Jack's must get flour from the mill, an egg from the black hen, milk from the spotted cow, butter churned from fresh cream, and firewood for the stove. Students can identify the physical changes (cracking an egg, grinding the wheat) and chemical changes (burning wood, cooking the pancake) in the story.

**\*\*Pop! A Book About Bubbles.** Kimberly Brubaker Bradley (2001). Simple text explains how soap bubbles are made, why floating bubbles are always round, and what makes them pop.

**\*The Remarkable Farkle McBride.** John Lithgow. Simon & Schuster (2000). Young Farkle McBride is a musical genius: he plays the violin, the flute, the trombone, and the drums with incredible skill. Lithgow gives the reader a whimsical look at the sounds that different instruments make.

**\*\*Roller Coaster.** Marla Frazee (2003). Harcourt, Inc. The spare text and dynamic artwork of this picture book capture the anticipation and excitement a young girl experiences on her very first roller coaster ride. A delightful introduction to motion and forces.

**Roller Coaster!** Motion and Acceleration. Paul Mason. Raintree (2007). This exciting book puts the reader in the shoes of a roller coaster designer. Full-color photographs, bold print words, and insets reveal the forces that affect roller coaster motion.

**\*Sheep in a Jeep.** Nancy E. Shaw. Houghton Mifflin Company (1997). Five foolish sheep cram into one jeep, their high spirits and occasional lack of foresight combine to make a outrageous road trip. This cute rhyming book is ideal for simplifying the topic of force and motion.

**Snow is Falling.** Franklyn M. Branley. HarperCollins (2000). Describes snow's physical qualities and includes some easy investigations for students to conduct using snow.

**The Snowy Day.** Ezra Jack Keats. Viking Press (1962). This is the classic tale of a boy waking up to discover that snow has fallen during the night. The little boy celebrates the snow-draped city with a day of humble adventures – experimenting with footprints, knocking snow from a tree, creating snow angels, and trying to save a snowball for the next day. The concept of a solid to a liquid phase change can be introduced with this book.

**Solid, Liquid, or Gas?** Sally Hewitt. Children's Press (1998). Clear text and photographs and simple activities help children learn to classify objects according to the materials they are made of and their physical properties.

**Solids, Liquids, and Gases: My World of Science.** Angela Royston. Heinemann Library (2003). This *Heinemann First Library* series introduces the states of matter by way of everyday situations and objects. It contains colorful photos, as well as activities and questions to encourage further exploration.

**Sorting.** Henry Pluckrose. Children's Press (1995). Simple, colorful photographs of everyday objects show children different ways to sort items by their physical properties.

**Sound and Light.** Karen Bryant-Mole. Heinemann (1998). This engaging non-fiction chapter book explains the basic principles of sound and light by using everyday experiences. Includes simple, hands-on activities that children can do themselves.

**\*Sound (Energy Works! Series)** Jenny Karpelenia. Perfection Learning (2004). Explains that vibrations create sound, how high and low pitches are made, how the ear works, and how musical instruments make sound.

**Sounds All Around.** Wendy Pfeffer. HarperCollins (1999). This book provides a simple explanation of sounds and hearing. It describes how sound waves vibrate through the air, and how tiny bones in the ear vibrate. It also explains how animals hear, and notes that sound waves travel through the solid ground as well as through air and water.

**Switch On, Switch Off.** Melvin Berger. Thomas Crowell (1989). This book gives a clear introduction to electricity-what it is, what it does, and how it is made. The author explains circuits and generators, light bulbs, and plugs. He also shows how to make electricity using a magnet, a compass, and a piece of wire.

**Temperature: Heating Up and Cooling Down.** Darlene Stille. Picture Window Books (2004). A blanket isn't hot. So how does a blanket keep you warm? Find the answer to this and other hot facts in this simple introduction to temperature and thermal energy.

**\*\*That Magnetic Dog.** Bruce Whatley. Angus & Robertson (2001). Skitty is a dog with a "magnetic" personality. She doesn't attract metal. She attracts food. This clever book is a great way to introduce the concept of magnetism.

**\*Too Many Toys.** David Shannon. Scholastic (2008). Spencer has too many toys. The house is overflowing with them. Finally, Spencer's mom has had enough and she helps him pack a box of toys to give away. In the

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end, Spencer decides the one toy he can't part with is the box! A good book for introducing the Toy Take-Apart activity from PPS, revised 2<sup>nd</sup> edition.

**Toys.** Marvin Hackley. National Geographic. Shows toys that are made of different materials including plastic, wood, metal, and cloth. Available only in 6-pack.

**\*\*What Did They See?** John Schindel. Henry Holt and Company (2003). Raccoon hurries to show Beaver, Porcupine, and Otter the most amazing "thingamajig" that they have ever seen. The reader is kept guessing about the lovely "whatchamacallit" until finally it is revealed...it's a mirror! This book is a fun introduction to a lesson on reflection and makes a nice fiction companion to Vicki Cobb's *I See Myself*.

**What Makes a Magnet?** (*Let's-Read-And-Find-Out Science* series, Stage 2). Franklyn M. Branley. HarperCollins (1996). Branley explains how magnets work and includes instructions for making a magnet using a magnet and a compass.

**What Makes a Shadow?** Clyde Robert Bulla. HarperCollins (1994). With simple words and charming illustrations, this book explains how shadows are produced. Young readers will discover what makes the shadows they see and will be introduced to the fun of making shadows of their own.

**What is the World Made Of?** Kathleen Zoehfeld. HarperCollins (1998). This book explains the three states of matter. Solids, hard or soft, hold their shape. Liquids take on the shape of whatever they're in. Invisible gases spread out to fill any container they're in, too. Children are invited to make personal observations of water as it changes from one state to another.

**A World of Change.** Natalie Lunis and Nancy White. Newbridge Educational Publishing (1999). Students use science processes to answer questions about changes in size, color, shape, and temperature – both natural and man-made. Available in big book format.

**Zack's Alligator** Shirley Mozelle. HarperTrophy (1995). When Zack soaks his new alligator key chain in water, it grows into a full-sized and fun-loving alligator. Follow the reading with activities on "grow creatures" or polymers.

**Zin, Zin, Zin A Violin.** Lloyd Moss. Aladdin Paperbacks (1995). Clever, rhythmic verse echoes the sounds various instruments create in a playful introduction to musical instruments and groups that begin with a trombone-playing soloist and adds a different instrument on each spread until a full orchestra is assembled.

## **LIFE SCIENCE**

**Aliens from Earth: When Animals and Plants Invade Other Ecosystems.** Mary Batten. Peachtree Publishers (2003). Explores how and why plants and animals enter ecosystems to which they are not native, as well as the consequences of these invasions for other animals, plants, and humans.

**Animal Faces.** Akira Satoh and Kyoko Toda. Kane/Miller (1996). Shows 21 photos of each of 24 species of animal, each one showing a different face. Students can look at seemingly identical faces and then discover how they all differ from each other. Illustrates the tremendous diversity of individuals of the same species.

**Animal Lives: The Barn Owl.** Sally Tagholm. Houghton Mifflin (2003). This beautifully illustrated picture book describes the physical characteristics, hunting, feeding, nesting, mating, and molting of the barn owl. Includes information on owl pellets.

**Animals in Winter.** Henrietta Bancroft. HarperTrophy (1997). Brightly colored paintings bring the text to life through the realistic portrayal of animals, birds, and butterflies in their natural habitats. Readers learn about the variety of responses animals have to the coming of winter.

**\*Ant, Ant, Ant! An Insect Chant.** April Pulley Sayre. NorthWord Books for Young Readers (2005). An ant and 59 other American insects appear in a catchy chant. Although the bright, digitally produced caricatures are not always scientifically accurate, this book is a fun survey of insect names.

***Are You a Butterfly? Are You a Ladybug? Are You a Spider? Are You a Snail? (Backyard Books series).*** Judy Allen and Tudor Humphries. Larousse Kingfisher Chambers (2000). These charming and scientifically accurate books for younger readers document the adaptations and life cycles of some common Ohio animals. The clear, close-up illustrations and informative, conversational tone of the text are very engaging.

***Baby Animals Books: A Tiger Cub Grows Up, A Flamingo Chick Grows Up, A Harbor Seal Pup Grows Up, A Kangaroo Joey Grows Up.*** Joan and Richard Hewett. Carolrhoda Books (2001-2002). These books follow animals that live on nature preserves from birth to independence. They show how the different types of animal babies grow, change, and resemble their parents.

**\*\*Be a Friend to Trees: Let's-Read-and-Find-Out Science series (Stage 2).** Patricia Lauber. HarperCollins (1994). This book shows that trees are something we can't live without. It describes trees as home and food for various animals, as providers of fruits and nuts for humans, as sources of wood, paper, rubber, and turpentine. Then words and pictures demonstrate the process of photosynthesis, step-by-step: how trees make food in their leaves and how they release the oxygen we need to breathe. A final section gives hands-on examples for recycling paper and shows two youngsters planting a tree.

***Beaver at Long Pond.*** Lindsay Barret George. HarperCollins Juvenile Books (2000). Beautifully detailed illustrations combined with an educational, scientifically-accurate storyline about a beaver's adventures make a good introduction to this fascinating mammal. The Beaver was once extirpated from Ohio, but is now making a comeback and is an excellent example of an Ohio animal that depends on plants for food and shelter.

***Birds Build Nests.*** Yvonne Winer. Charlesbridge (2002). Poetic text accompanies lush illustrations of birds' nests, from delicate hidden pouches to vast tower-like structures. This book highlights 15 interesting nests. Includes a nest identification guide.

***Bug Books series: Ant, Bee, Cockroach, Head Louse, Pillbug,*** etc. Karen Hartley, Stephanie St. Pierre, Philip Taylor, etc. Heinemann Library (2002). This comprehensive series includes 24 books about various invertebrates. Close-up, colorful photographs and simple text demonstrate how these creatures grow, feed, move, and reproduce.

**\*Bugs are Insects.** Ann Rockwell. HarperCollins Juvenile Books (2001). This book introduces children to the world of insects and, in particular, bugs. Rockwell offers basic factual information in an interesting, easy-to-read format. Common insects are introduced, and the main differences between insects and spiders are explained as well as what makes a bug a bug. The collage illustrations are beautifully rendered with layered colored papers.

***Bugs For Lunch.*** Margery Facklam. Charlesbridge (1999). In snappy, lilting verse, Facklam lists a variety of creatures that feast on bugs, including bats and bears, toads and trout – and humans. Each double page spread showcases a beautifully rendered watercolor illustration, with equal attention to realistic detail and artistic composition. A section at the back supplies additional information about each featured eater.

***Butterflies Fly.*** Yvonne Winer. Charlesbridge Publishing (2001). This feast for the eyes presents a painting of a single butterfly species and accompanying verse on one page, with a full-page illustration on the facing page that shows the butterflies in their natural habitats. The pictures are strikingly detailed, and the poetry is a tribute to the insect's beauty. An identification guide at the end provides information about each butterfly and emphasizes that habitat destruction is the main threat to these lovely creatures.

**\*Butternut Hollow Pond.** Brian J. Heinz. Millbrook Press (2000). Daybreak at Butternut Hollow Pond looks peaceful, but there is much going on. The food chain, and the many close escapes involved in animals' attempts to eat one another, provide suspense. Two concepts are demonstrated in this picture book for older readers: the hunter invariably becomes the hunted, and all living things are players in a complex cycle of interdependence that is much more than a simple food chain.

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**Cells and Systems.** Holly Wallace. Heinemann Library (2001). *Cells and Systems* looks at how every living thing, no matter how big or how small, is made up of cells. It explains how the specialized cells make up the important tissues and organs like skin and bone, and how the heart and lungs keep us alive.

**Cells Are Us.** Fran Balkwill. Carolrhoda Books (1990). Amusing, fact-filled text and clever cartoons explain the functions of the cells in the human body.

**Chickens Aren't the Only Ones.** Ruth Heller. Paper Star (1999). Full-color illustrations and informative, rhyming verse show young readers that snakes, lizards, turtles, insects, and amphibians also lay eggs.

**Chirping Crickets.** Melvin Berger. HarperCollins (1998). Inside this book children will learn about crickets, and even how to tell the temperature by counting a cricket's chirps

**City Foxes.** Susan J. Tweit. Denver Museum of Natural History/Alaska Northwest (1997). During a walk through an old Denver cemetery one day, photographer Wendy Shattil discovered a den of newborn red foxes and their parents. With her camera and skilled eye she followed the story of the foxes as the kits grew up amidst the dangers of the city. Includes ecology notes and red fox facts for older readers.

**Clara Caterpillar.** Pamela Duncan Edwards. Harpercollins (2001). Clara is the plain Jane of the caterpillar set, which is fine with her. Predictably, she proves that colorless and clever is better than flashy and frivolous when she escapes the beak of a hungry bird. The text is a lesson in alliteration (" 'Catisha is conceited,' comforted Cornelius"), and the story emphasizes the idea that we all have our own special gifts, regardless of our looks. Although the animals are anthropomorphized, the author uses the correct scientific term for the butterfly chrysalis stage, and the book makes a good introduction to animal camouflage and insect life cycles.

**\*\*Coral Reef Animals.** Francine Galko. Heinemann (2003). Describes coral reefs, where they can be found, the animals that inhabit them, and how to protect them.

**Crab Moon.** Ruth Horowitz. Candlewick Press (2000). This story about a boy who helps save a stranded horseshoe crab invokes themes of environmentalism and respect for all creatures. One night in June, young Daniel and his mother go down to the beach to see the female horseshoe crabs digging holes in the sand for their eggs and then pulling the males across to fertilize them. The next day, the crabs are gone, but Daniel finds one turned upside down and immobile. He cautiously flips her over, and watches her scuttle back to the sea, "quiet as a queen." This book encourages readers to seek out the beauty and importance of creatures that might seem alien at first glance. Notes at the end give children more facts about horseshoe crabs.

**Crawdad Creek.** Scott Russell Sanders. National Geographic (1999). Exquisitely detailed paintings capture the beauty of the wild, natural world waiting to be discovered. The book encourages readers to go outside; find moving water; and open their eyes, ears, and hearts to the wilderness everywhere. A wonderful book to encourage young readers to observe all the details of the world around them.

**Creepy, Crawly Caterpillars.** Margery Facklam. Little, Brown, and Co. (1996). This strikingly-illustrated book begins by describing how caterpillars' bodies are structured and how the larval stage fits into moth and butterfly metamorphosis. Following is an in-depth look at 13 caterpillars found in various parts of the world, most of them native to North America. Each double-page spread displays a greatly enlarged, dramatically-colored caterpillar; along the bottom of the illustration runs a line of smaller drawings of the stages of growth -egg, caterpillar, pupa, and adult moth or butterfly. Each caterpillar's interesting, sometimes bizarre, behavior is discussed, thus showing the reader how fascinating these tiny creatures can be.

**Come to the Ocean's Edge: A Natural Cycle Book.** Laurence Pringle. Boyds Mills Press (2003). Poetic text and captivating watercolor illustrations take the reader through a 24 hour period of life at the ocean's edge.

**Diary of a Worm.** Doreen Cronin. Joanna Cotler Books (2003). A young worm discovers, day by day, that there are some very good and some not so very good things about being a worm in this great big world. A great introduction to a unit on soil. Also from this author and **Diary of a Fly** and **Diary of a Spider**.

***Dig, Wait, Listen: A Desert Toad's Tale.*** April Pulley Sayre. Greenwillow Books (2001). A spadefoot toad waits under the sand for rain, hears the sounds of the other desert animals, and eventually mates and spawns other toads.

***Dinosaur Valley.*** Mitsushiro Kurokawa. Chronicle Books (1997). Recreates the behavior and life cycles of several different kinds of dinosaurs. Uses a terrific fold-out of a dinosaur excavation that gives children an accurate idea of the work of paleontologists.

***Ducks Don't Get Wet.*** Augusta Goldin. HarperTrophy (1999). Why don't ducks get wet? This delightful Let's-Read-and-Find-Out Science book explains how ducks dip and dive, but they have special physical and behavioral adaptations to help them stay dry.

***An Earthworm's Life.*** John Himmelman. Children's Press (2001). Simple text and realistic illustrations describe the daily activities and life cycle of the earthworm. Makes a good nonfiction companion to ***Diary of a Worm.***

***An Egg is Quiet.*** Dianna Aston and Sylvia Long. Chronicle Books (2006). A beautiful and informative introduction to eggs. From tiny hummingbird eggs to giant ostrich eggs, oval ladybug eggs to tubular dogfish eggs, gooey frog eggs to fossilized dinosaur eggs, this book celebrates the variety of animals that lay eggs.

***Eliza and the Dragonfly.*** Suzy Caldwell Rinehart. Dawn Publications (2004). When a dragonfly flies through the window and lands on her toothbrush, Eliza takes it to a nearby pond to learn more about these remarkable insects. The last pages of the book provide additional information and resources about dragonflies.

***The Extinct Alphabet Book.*** Jerry Pallotta. Charlesbridge (1993). This book is filled with unusual and amazing creatures that are no longer on Earth. Have students point out the extinct animals that resemble organisms alive today.

***Fireflies in the Night.*** Judy Hawes and Ellen Alexander. HarperCollins (1991). Brief, clearly written text tells of a young girl who learns some interesting facts about fireflies from her grandfather. Alexander uses richly hued pastels for her illustrations of the young girl, her grandparents' farm, and the creatures of a summer night.

***First the Egg.*** Laura Vaccaro Seeger. Roaring Brook Press (2007). This award-winning picture book combines simple text ("First the egg...then the chicken") with cut-outs to allow readers to predict the next page. A great way to review the life cycles of chickens, frogs, butterflies, and more with very young children.

***Fish Faces.*** Norbert Wu. Henry Holt and Company (1993). Sparse, rhythmic text and sharply detailed full-color photos introduce over 70 of these intriguing creatures. Fascinating introduction to the variations that exist among individuals of the same kind of animal.

***From Chick to Chicken.*** Judith Powell. Raintree Steck-Vaughn (2001). Large photos and easy text follow a chick's growth and development to adulthood. Includes how chickens and eggs are raised for food.

***From Seed to Plant.*** Gail Gibbons. Holiday House (1993). Explores the intricate relationship between seeds and the plants that they produce.

***Forest Explorer: A Life-Size Field Guide.*** Nic Bishop. Scholastic Press (2004). Explore the mini-wilds of the forest with this unique photographic nature guide. This book features seven dramatic life-size habitat scenes capturing more than 130 tiny animals just as they appear in nature. Fascinating field notes help young naturalists identify commonly found animals and the tricks and habits they use to survive through the seasons.

***Fossils Tell of Long Ago.*** Aliki. HarperTrophy (1990). The imprint of an ancient leaf in a rock, the skeleton of a stegosaurus, or any object that has been preserved can tell us about life on Earth millions of years ago – every one is a fossil. Aliki discusses fossils that can be seen by children in museums.

***The Fungus that Ate My School.*** Arthur Dorros. Scholastic Press (2000). When the kids come back to school after a rainy spring vacation, they find that everything is covered with slimy green and purple fuzz. It's fungus!

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But where did it come from? And how on earth can they get rid of it? Wacky Dr. Seuss-type illustrations show the fungus impersonating various school employees (the principal, the cafeteria ladies) and irreverently destroying school property. An author's note on the copyright page reassures readers that a fungus can't really eat a school, but "every year, schools and other buildings develop fungus infestations." A hilarious example of how organisms cause changes in their ecosystems and how these changes can sometimes be detrimental.

***The Gift of the Tree.*** Alvin Tresselt. Lothrop, Lee, and Shepard Books (1972, 1992). This exceptionally beautiful book tells the life story of an old oak tree.

***Going Home: The Mystery of Animal Migration.*** Marianne Berkes. Dawn Publications (2010). A selection of animals that migrate by air, land, and sea represents the variety and mystery of why and how animals migrate.

***Great Migrations.*** Elizabeth Carney. National Geographic (2010). Based on the National Geographic Channel's special, this book follows the migrations of 8 different animals, this book is filled with stunning photographs, migration maps, and interesting facts.

***Growing Frogs.*** Vivian French. Candlewick Press (2000). Vivian French's simple, amusing text infuses life, humor, and plenty of personality into this environmentally sound, scientifically accurate introduction to frog metamorphosis.

***Guess Where I Live.*** Anni Axworthy. Candlewick Press (1999). Readers follow the clues and peep through the holes to find out where animals live. A fun introduction to habitats for very young children. Two other peep-hole books by this author are ***Guess What I Am*** and ***Guess What I'll Be***.

***A Handful of Dirt.*** Raymond Bial. Walker & Company (2000). Soil may not be alive, but amazingly, multitudes of microscopic creatures live there, battling it out in an eat-or-be-eaten world. This book reveals the tiny creatures, invisible to our eyes, that provide food for the insects that in turn feed the animals that live in and above the soil. Also explains how to make compost and the importance of preserving Earth's soil.

***Hello, Fish! Visiting the Coral Reef.*** Sylvia A. Earle. National Geographic (1999). In poetic yet fact-filled text accompanied by eye-catching, large-format photographs, the young reader is given an up-close-and-personal view of a variety of funny, unusual, and beautiful fish, all residents of various coral reefs around the world. Useful for exploring the different kinds of organisms that a coral reef supports.

***Honeybees.*** Deborah Heiligman. National Geographic (2002). Children follow the life of a busy worker bee as she moves from job to job in the hive, helping the community in various ways. As a nurse bee, the worker feeds the larvae, nourishing the young into adulthood. As a forager bee, she flies long distances in search of nectar, pollinating plants as she moves from flower to flower. And as a guard bee, the worker warns the hive of intruders and battles honey-stealing robber bees from other hives. The fact-filled text and vibrant art highlight the many activities of these busy insects and their amazing sense of community, while a special experiment encourages kids to dance like a honeybee to learn about bee communication.

***Honk, Honk Goose! Canada Geese Start a Family.*** April Pulley Sayre. Henry Holt (2009). This fun read-aloud, follows the mating, nesting, and nurturing rituals of a family of Canada Geese.

***\*A House for Hermit Crab.*** Eric Carle. Simon & Schuster (1988). Eric Carle's magnificent collage illustrations invite readers and viewers on a breathtaking underwater tour where brilliantly-colored sea creatures dazzle and delight the eye. Although the animals are somewhat anthropomorphized, the story is based on the true habits of the hermit crab.

***How Do Animals Adapt?*** Bobbie Kalman. Crabtree (2000). This book examines the ever-changing world of animal adaptations. It explains why animals need to adapt; how animals use camouflage and mimicry to protect themselves; and how wild animals have adapted to habitat loss and learned to live in cities.

**How a Seed Grows.** Helene Jordan. HarperCollins (1992). Accompanied by step-by-step directions on how to plant a seed and care for it as it grows, a simple text and detailed artwork reveal how seeds are transformed into plants and discusses the importance of sunlight, water, and other nutrients.

**How to Hide a Meadow Frog and Other Amphibians.** Ruth Heller. Grossett and Dunlap (1995). There are lots of amphibians to discover in this vibrantly colored nature book of hide-and-peek. Ruth Heller shows how toads, salamanders, and other interesting amphibians are experts at camouflage.

**I Know How My Cells Make Me Grow.** Kate Rowan. Walker Books (1999). Sam and his mother talk about the different kinds of cells in his body, how they grow, and how in doing so they help him grow. Simple, accurate text combined with colorful cartoons make this a fun introduction to the cells of the human body.

**I Took a Walk.** Henry Cole. Greenwillow (1998). This richly illustrated read-aloud book takes young listeners through woods and meadows and beside streams and ponds, where they discover, in vibrant, fold-out panoramas, butterflies and box turtles, wildflowers and water birds. After reading, take students on their own walk, as the author suggests, and "find a place to sit and watch and listen."

**If I Had a Tail.** Karen Clemens Warrick. Rising Moon (2001). The reader is asked to guess what a creature is by the appearance and use of its tail.

**If You Hopped Like A Frog.** David Schwarz. Scholastic (1999). A fun look at ratio and proportion as it applies to the animal world reveals that a kid with the strength of an ant could lift a car over her head, and a kid who could eat like a shrew could pack away seven hundred plus hamburgers each day. Playful illustrations show what such feats might look like, while an afterword explains the nitty-gritty of the math.

**In the Snow: Who's Been Here?** Lindsay Barrett George. Greenwillow Books (1995). Two children on their way to go sledding see evidence of a variety of animal life. The reader must infer from the evidence what animals had been in each location. Each time, the answers are revealed on the next page. Also by this author: **Around the Pond: Who's Been Here?** and **In the Woods: Who's Been Here?**

**Insectlopedia.** Douglas Florian. Harcourt (2000). This book for emerging entomologists combines clever wordplay with delightful watercolor and collage illustrations of insects. Other animal poetry books by this author: **Beast Feast; In the Swim; Lizards, Frogs, and Polliwogs; Mammabilia** and **On the Wing.**

**Insects Are My Life.** Megan McDonald. Orchard Books (1995). Amanda's passionate interest in insects, not shared by family and schoolmates, causes problems as other class members begin to ostracize her. All ends well, though, when she finds herself sitting next to Maggie – who loves reptiles. Also by this author: **Reptiles are My Life** (2001).

**Interview with Harry the Tarantula.** Leigh Ann Taylor and Henrick Drescher. National Geographic (2003). Talk-show host Katy Did interviews Harry the Tarantula, a furry spider recently recovered from a hair-raising adventure. Through this clever interview, the audience finds out all about the fascinating tarantula. Initiate a discussion on anthropomorphism after reading this book (can tarantulas and katydid really talk?)

**Into the Sea.** Brenda Guiberson. Henry Holt (1996). Recounts the life of a sea turtle from its days as a hatchling on a sandy beach through its return to the same island as an egg-laying adult many years later. Using vivid prose, the author describes the creature's initial journey into the sea, its growth and travels throughout the ocean, and its narrow escape from a fishing net.

**Is Your Mama a Llama?** Deborah Guarino. Scholastic (1989). In this enchanting animal guessing book for very young children, Lloyd, a baby llama, asks each of his friends, "Is your mama a llama?," and all respond in turn with a rhyming description of their mother that is answered on the following page. A clever way to introduce the concept that animals resemble their parents.

**Ladybug at Orchard Avenue.** Kathleen Weidner Zoehfeld. Soundprints (2002). The Smithsonian's Backyard series features the beautifully illustrated adventures of a variety of backyard creatures, including **Bumblebee at**

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**Apple Tree Lane, Raccoon at Clear Creek Road, Mallard Duck at Meadow View Pond, and Box Turtle at Silver Pond Lane.** In *Ladybug at Orchard Avenue*, readers learn the characteristics, adaptations, and life cycle of ladybugs as Ladybug rambles through the garden in search of aphids, instinctively using her natural defenses to escape from threats.

**Lifetimes.** David L. Rice. Dawn Publications (1997). This book emphasizes learning lessons from nature by focusing on the lifespans of individual animals, plants, and astronomical bodies. Each page or two introduces a new subject, tells its life span, discusses its characteristics, defines what it can teach us, and suggests related ideas for readers to tell about, think about, and look up.

**A Log's Life.** Wendy Pfeffer. Simon & Schuster Books for Young Readers (1997). Through stunning cut-paper collages and lyrical descriptive text, young readers are introduced to the life cycle of a tree. Children will be fascinated as they learn about the many animals that depend upon the tree for food and shelter, as well as assist in the decay process.

**Make Way for Ducklings.** Robert McCloskey. Viking Press (1941). This charming classic tells the tale of Mr. and Mrs. Mallard's search for a safe place to bring up their ducklings. During a rest stop in Boston's Public Garden, they think they just might have found the perfect spot--no foxes or turtles in sight, plenty of peanuts from pleasant passers-by, and the help of a kindly police officer. Makes a nice fiction companion to **Ducks Don't Get Wet** by Augusta Goldin.

**Milk: From Cow to Carton.** Alike. HarperCollins (1992). This *Let's-Read-and-Find-Out* selection describes how a cow produces milk, how the milk is processed in a dairy, and how various other dairy products are made from milk. Make butter as a fun activity to accompany this book.

**My Pet Hamster.** Anne Rockwell. HarperCollins (2002). Describes what hamsters are like, what they eat, how the act, and explains the difference between domestic and wild animals. A good introduction to the needs of living things.

**One Bean.** Ann Rockwell. Walker and Company (1998). This simple science book about planting and observation takes young readers step-by-step through a plant's growth cycle, from planting the bean in a paper cup to the tasty results.

**Out of the Ocean.** Debra Frasier. Voyager Books (1998). This award-winning book combines cut-paper shapes, full-color seashore photographs, and poetic text to pay homage to the ocean's precious treasures that can be so easily taken for granted if we are not careful to notice them. As a mother and daughter walk the beach, the child is fascinated by collecting material things such as shells, beach glass, a wooden shoe, and shark's eggs. The mother takes in bigger things: the sun, sea turtle tracks, and the wash of waves on the beach. When the little girl protests that those things are always there, her mom explains her secret: "the bigger the thing, the easier it is to forget to see it." A photographic afterword explains the significance of the beachcombing finds that are pictured. The lesson learned: The real "treasure" is in the looking. A delightful introduction to observing nature.

**Magnificent Monarchs.** Linda Glaser. Millbrook Press (2000). Contains colorful, realistic illustrations accompany the simple, sometimes rhyming text.

**Mouths and Teeth.** Elizabeth Miles. Heinemann (2002). Briefly describes how animals of the land, sea, and air use their different kinds of mouths and teeth for eating, drinking, and other purposes.

**Munching, Crunching, Sniffing, and Snooping.** Brian Moses. DK Publishing (1999). This engaging nonfiction book uses simple text and color photographs to describe various ways animals use their mouths and noses.

**My Favorite Tree: Terrific Trees of North America.** Diane Iverson. Dawn Publications (1999). Arranged alphabetically, twenty-six native North American tree species are cataloged by listing a set of standard facts including size, habitat, animal "companions", and characteristics such as bark and leaves. Each description is accompanied by a full-page colored pencil illustration featuring children playing on or around the tree.

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**A Nest Full of Eggs.** Priscilla Belz Jenkins. HarperTrophy (1995). From the Let's-Read-and-Find-Out Science series, this book follows a nest of robin eggs through their development.

**\*Oil Spill!** Melvin Berger. HarperTrophy (1994). This *Let's-Read-and-Find-Out Science* book focuses on one of the worst spills in history--the Exxon Valdez oil tanker spill--to explain in simple terms and with bold, full-color illustrations why oil spills happen, how they are cleaned up and what effects spilled oil has on ocean plants and animals. Helps readers understand how changes in an organism's habitat are sometimes harmful.

**Once I Knew a Spider.** Jennifer Owings Dewey. Walker and Company (2002). This is an inspiring true story about an expectant mother who develops an unusual relationship with the common orb weaver that makes a home outside her window. As the mother's pregnancy progresses and her child is born, the spider is creating its own circle of life as it spins a web and creates a delicate egg sac for its offspring. By a small miracle of mother nature, the orb weaver uncharacteristically survives the snow and the winter, and stays with her eggs until spring. Includes an author's note describing facts about spiders, and orb weavers in particular.

**One Less Fish.** Kim Michelle Toft and Allan Sheather. Charlesbridge Publishing (1998). A counting rhyme in reverse, this picture book starts with 12 fish, then counts down 1 by 1 to 0, as they succumb to manmade perils under the sea. Rhymed couplets make up the text for young children. Older students will want to hear the dangers described in greater detail in accompanying paragraphs of information. Useful for teaching about the many threats to ocean ecosystems.

**One Tiny Turtle.** Nicola Davies. Candlewick Press (2001). Davies' dramatic rendering of the life cycle of the Loggerhead turtle draws readers into the mysteries of this reclusive deep-sea creature, while full-spread illustrations bring the ocean world to life in all its majestic beauty. Loggerhead swims alone in the vastness of the water, munches on crabs, floats over coral reefs and crawls with slow, heavy steps across the beach to lay her eggs. By the time Loggerhead's hatchlings race for their lives across the beach, under threat of attack, readers will be emotionally invested in their plight.

**\*\*Our Tree Named Steve.** Alan Zweibel. G. P. Putnam's Sons (2005). In a letter to his children that is both humorous and poignant, a father recounts memories of the role that Steve, the tree in their front yard, has played in their lives.

**\*\*Over in the Ocean: In a Coral Reef.** Marianne Berkes. Dawn Publications (2004). This coral reef is a marine nursery, teeming with mamas and babies. Children can count and clap to the rhythm of *Over in the Meadow* while puffer fish "puff," gruntfish "grunt" and seahorses "flutter." The colorful art is fresh and fun - constructed entirely from clay-like material - and invites young fingers to fashion fishy forms. Helps children identify that there are many distinct environments that support different kinds of organisms.

**Parasites and Partners Series.** Heinemann (2003). This series for grades 5-7 introduces unique symbiotic relationships to readers. Each book takes one broad relationship type and discusses it in an easy to understand way within a framework packed with full-color photographs and fascinating examples.

**Pass the Energy, Please!** Barbara Shaw McKinney. Dawn Publications (1999). Each of nature's creatures "passes the energy" in its own unique way. In this upbeat rhyming story, the food chain connects herbivores, carnivores, decomposers, and plants together in a fascinating circle of players. "Passing the energy needed to live/Is a difficult gift for a creature to give./But a chain unbroken along the way/Links plants and animals from day to day." **A Teacher's Guide to Nature's Food Chains** by Carol Malnor uses the book as an introduction.

**\*The Perfect Pet.** Margie Palatini. Katherine Tegen Books (2009). Elizabeth really wants a pet, but her parents do not. After all of her suggestions are vetoed, she finds just the right one: an insect.

**Pie in the Sky.** Lois Ehlert. Do pies grow on trees? Join a father and child as they watch over their backyard cherry tree--and all the colorful living things surrounding it--throughout the seasons. At the end of the summer, they harvest the cherries together and make a delicious pie for the whole family to enjoy. Includes a recipe for making cherry pie.

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***Pick, Pull, Snap! Where Once a Flower Bloomed.*** Lola Shaeffer. Greenwillow Books (2003). In this engaging fold-out book, children can predict the food that will grow “where once a flower bloomed”. This book describes how raspberries, peanuts, corn and other foods are produced as various plants flower, create seeds, and finally bear fruit.

***A Pill Bug’s Life.*** John Himmelman. Children’s Press (1999). On a spring morning, a young pill bug and her many siblings hatch out of their mother’s underbelly pouch. Feeding; growing; shedding and eating her old skin; and facing dangers from insects, spiders, humans, and so on are portrayed. Finally, she finds a dead log to sleep under during the winter. Spring comes, she finds a mate, and the process begins again. An introductory sidebar explains that pill bugs are actually crustaceans, not insects. A nice companion to activities in ***The Pillbug Project*** by Robin Burnett (1999). (Some other books in this series are ***An Earthworm’s Life, A Slug’s Life, A Monarch Butterfly’s Life, A House Spider’s Life, A Wood Frog’s Life,*** and ***A Luna Moth’s Life.***)

***The Popcorn Book.*** Tomie DePaola. Holiday House (1978). This skillful blend of humor and information helps students understand where one of their favorite foods comes from. Presents a variety of facts about the types, history, and science of popping popcorn.

***\*Prince William.*** Gloria Rand. Henry Holt & Company (1992). This fictional story is based on the 1989 Exxon Valdez oil spill. Readers will learn about the massive volunteer efforts that go into cleaning the beaches and saving the animals after oil spills.

***Pumpkin Circle: The Story of a Garden.*** George Levenson. Tricycle Press (1999). Rhyming text and photographs follow a pumpkin patch as it grows and changes, from seeds to plants to pumpkins ready to harvest, to jack-o-lanterns, and then to seeds again.

***Pumpkin Pumpkin.*** Jeanne Titherington. Greenwillow Books (1986). Jamie plants a pumpkin seed and after watching it grow, carves it and saves some seeds to plant in the spring. A delightfully simple introduction to pumpkin life cycles.

***Pumpkins.*** Ken Robbins. Roaring Brook Press (2006). Spectacular color photographs and clear, simple text document the different varieties and sizes of pumpkins as well as their life cycle.

***Red-Eyed Tree Frog.*** Joy Cowley. Scholastic Press (1999). Through engaging and informative text and outstanding photography, this book is an exciting new way to look at nature. It provides students with a unique way to see the natural world through the adventures of a red-eyed tree frog: searching for food, avoiding the dangers of the rain forest, and trying to survive attacks from poisonous caterpillars and hungry boa constrictors.

***Red Leaf, Yellow Leaf.*** Lois Ehlert. Harcourt Brace (1991). A simple story celebrating a child’s pleasure in a sugar maple—its history, its changing appearance during the year, planting, growth—is extended with excellent notes on the tree’s parts as well as clear instructions for planting and caring for it. In her picture collages, Ehlert blends bold graphics, vibrant colors, and informative, accurate details of tree parts.

***\*Rice.*** Louise Spilsbury. Heinemann (2001). Explores where rice comes from, how it is grown and harvested, the difference between brown and white rice, the history of rice farming, and the anatomy of a rice plant.

***\*Rice is Life.*** Rita Golden Gelman. Henry Holt & Company (2000). Set in Bali, each double-page spread contains framed illustration of the life cycle of growing rice. Within the frames are poems, which capture the essence of the farming families and the beauty of their environment. Outside of the frames are prose paragraphs that compliment the poems and paintings by giving more information about growing rice.

***A Salamander’s Life.*** John Himmelman. Children’s Press (1998). Illustrations and simple text follow a salamander through its life cycle, from larva in a pond through winter hibernation and spring mating. A lovely non-fiction companion reading to ***The Salamander Room.*** Have students look for the page with a scientific error (the text tells about the salamander eating insects, but none of the animals shown on the page are actually insects).

**The Salamander Room.** Anne Mazer. Knopf (1994). *From Horn Book:* A boy wants to keep an appealing orange salamander in his room and imagines how he can keep the animal happy by planting trees, encouraging insects and birds to enter, and finally removing the roof to let in the rain.

**Sea Turtles.** Gail Gibbons. Holiday House (1995). Colorful, labeled illustrations and simple text describe the characteristics and life cycles of eight kinds of sea turtles. Also includes information on threats to sea turtles and how people can help protect them.

**\*Seashells by the Seashore.** Marianne Collins Berkes. Dawn Publications (2002). A counting book in which a girl and her companions collect a variety of seashells. This book would be a nice introduction to a seashell classification activity.

**The Seasons of Arnold's Apple Tree.** Gail Gibbons. Voyager Books (1984). As the seasons pass, Arnold enjoys a variety of activities as a result of the changes in his apple tree.

**The Shell Book.** Barbara Hirsch Lember. Houghton Mifflin (1997). Hand-tinted photographs taken with black-and-white infrared film illustrate this book of common American shells. The beauty of each shell is revealed in each still-life photograph, and the text gives details of the characteristics of the creature who inhabits the shell. Without being aware of it, students will naturally observe shape, size, color, and other characteristics of shells as they look at the photographs. Makes a good introduction to an activity on sorting and classifying seashells.

**Shelterwood.** Susan Hand Shetterly. Tilbury House (1999). In this picture book set in Maine, a woman recalls the time spent with her grandfather as a girl, when she learned about nature and the proper stewardship of the land. At the end of the book, the girl learns how proper care of the land can lead to the regeneration of the forest, even after logging.

**Sky Tree: Seeing Science through Art.** Thomas Locker with Candace Christiansen. HarperCollins (1995). A tree stands on a hill by a river. As the sky changes, so does the tree, its branches filling with clouds, stars, snow, birds, mists, and eventually, the golden spring sun. This book demonstrates how art and science are linked, and invites children to experience the life of a tree and its relationship with the sky.

**Snailology.** Michael Elsohn Ross. First Avenue Editions (2000). Describes how to collect, house, and care for snails. Includes several hands-on investigations with snails.

**Some Smug Slug.** Pamela Duncan Edwards. HarperCollins (1996). A smug slug that will not listen to the animals around it comes to an unexpected end. Be sure to initiate a discussion on anthropomorphism after reading the book together. This makes a fun fiction companion to **A Slug's Life** by John Himmelman.

**Spiders.** Gail Gibbons. Holiday House (1993). Bright illustrations and simple text, including labeled diagrams, describe types and characteristics of many common spiders.

**Spiders Spin Webs.** Yvonne Winder and Karen Lloyd-Jones. Charlesbridge Publishing (1998). This beautifully illustrated book introduces 15 kinds of arachnid. A close-up of a spider, accompanied by brief text, appears on the left side of each double-spread illustration, with a realistic illustration of the spider in its natural environment on the right side.

**Spinning Spiders.** Melvin Berger. HarperCollins (2003). The fascinating book from the *Let's-Read-and-Find-Out* Series describes the characteristics of spiders and the methods they use to trap their prey in webs.

**Sweet Magnolia.** Virginia Kroll. Charlesbridge (1995). Denise visits her grandmother in the Louisiana bayou for a school vacation she'll never forget. Grandma, a wildlife rehabilitator, shares her knowledge with Denise as they explore the mysterious bayou. After learning the valuable lesson that wild animals must be free, Denise returns to the city with a new-found knowledge of the importance of ecological stewardship.

***Sky Tree: Seeing Science through Art.*** Thomas Locker with Candace Christiansen. HarperCollins (1995). A tree stands on a hill by a river. As the sky changes, so does the tree, its branches filling with clouds, stars, snow, birds, mists, and eventually, the golden spring sun. This book demonstrates how art and science are linked, and invites children to experience the life of a tree and its relationship with the sky.

***Summer Sun Risin'.*** W. Nikola-Lisa. Lee & Low Books (2002). From sunrise to sunset, an African American boy spends an activity-filled summer day helping his family on their farm. Feeding animals, mowing hay, picking vegetables, and eating freshly caught fish fill the hours. Don Tate's sun-drenched paintings depict the family's daily activities and trace the sun as it travels across the sky. Useful in teaching students about where food comes from (other than the grocery store).

***A Swim Through the Sea.*** Kristin Joy Pratt. Dawn Publications (1994). Also available is a teacher's guide by Bruce and Carol Malnor. A beautifully-illustrated alphabet book that includes alliteration for each letter. Each page spotlights a new sea creature framed by a colorful border featuring other organisms. Smaller print text below the main story gives scientifically-accurate details of the organisms.

***Tale of a Tadpole.*** Karen Wallace. DK Publishing (1998). Full-color photographs and simple text give the reader a very close look at the development from egg to tadpole to frog. Although written for beginning readers, third grade students will be fascinated by the amazing close-up photographs.

***Tell Me Tree: All About Trees for Kids.*** Gail Gibbons. Little Brown (2002). In this inviting, oversized book Gibbons discusses the parts of the tree and their functions, types of fruits and seeds, kinds of bark, and uses for trees. She includes a discussion of photosynthesis and gives directions for students to make their own tree identification books. Relevant terms are highlighted in the text and identified in the illustrations.

***A Tree for All Seasons.*** Robin Bernard. National Geographic Society (2001). This book of beautiful photographs and simple clear text examines the changes that occur in a Sugar Maple tree as the seasons change. Excellent for showing a common Ohio plant responding to changing seasons.

***Trout are Made of Trees.*** April Pulley Sayre. Charlesbridge (2008). Energetic collage art and simple, lyrical text depict the ways plants and animals are connected in the food web. Back matter provides information about the trout life cycle as well as conservation efforts that kids can do themselves.

***Turtle Summer: A Journal for My Daughter.*** Mary Alice Monroe. Sylvan Dell Publishing (2007). Using original photographs, this scrapbook journal explains the nesting cycle of sea turtles and the natural life along the southeastern coast, including local shore birds, shells, and the sea turtle hospital. Includes information about the many dangers sea turtle hatchlings face during their journey to the sea. *This book can be used in place of Turtle, Turtle, Watch Out (out of print, see below) for the Turtle Hurdles lesson.*

***\*Turtle, Turtle, Watch Out!*** April Pulley Sayre. Orchard Books (2000). This dramatic sea adventure details the life cycle of a female sea turtle and describes how she is helped to escape from danger many times by different human hands. Helps readers understand how changes in an organism's habitat are sometimes beneficial and sometimes harmful.

***\*Turtle Watch.*** Saviour Pirotta. Farrar Straus & Giroux (1997). A beautifully illustrated story about a young Japanese boy, his sister, and their friendship with a wise old man who awaits the return of the loggerhead turtles. After the mother turtles lay their leathery eggs in holes in the sand; they witness the nocturnal emergence of hundreds of baby sea turtles scuttling seaward. Readers learn about the characteristics, behavior, and life cycle of the loggerhead turtle.

***Unbeatable Beaks.*** Stephen R. Swinburne. Henry Holt and Company, Inc. (1999). Rhyming verses describe many types of bird beaks. This is a great resource for learning about animal adaptations for finding and eating food. Includes factual information about thirty-nine birds.

***The Very Hungry Caterpillar.*** Eric Carle. Carle's classic tale of a voracious caterpillar who eats his way through the days of the week and then changes into a beautiful butterfly can be used after studying caterpillar life cycles.

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Have students point out the scientific accuracies: an egg being laid on a leaf, a caterpillar hatching from the egg; and inaccuracies: the caterpillar's diet, the butterfly chrysalis being termed a "cocoon", and so on. Also a good opportunity to discuss how stories sometimes give plants and animals characteristics they do not have.

**Vulture View.** April Pulley Sayre. Henry Holt & Company (2007). In her signature poetic, energetic style, acclaimed nature writer April Pulley Sayre introduces young readers to the world of the turkey vulture. These surprisingly majestic birds don't hunt—they like their food to be already dead, and their eating habits serve a very important ecological role as part of nature's clean-up crew.

**Way Out in the Desert.** T.J. Marsh and Jennifer Ward. Rising Moon (1998). This rhyming counting book about the Sonoran desert introduces readers to both local fauna (such as the horned toad, javelinas, tarantulas, Gila monsters, roadrunners, and scorpions) and flora.

**\*Weird Friends: Unlikely Allies in the Animal Kingdom.** Jose Aruego and Ariane Dewey. Gulliver Books (2002). This book explores the strange-but-true symbiotic relationships that form in the animal kingdom, from a "seeing-eye fish" who helps a blind shrimp to a "burglar alarm bird" who lives with a crocodile. Helps readers understand how an organism's patterns of behavior are closely linked to its ecosystem, the other organisms present, and the availability of food and resources

**What are Food Chains and Webs?** Bobbie Kalman. Crabtree (1998). Clear photographs, illustrations, charts, and short chapters introduce students to food chains and webs.

**What Did I Look Like When I was a Baby?** Jeanne Willis. Putnam (2000). A little boy asks his mother what he looked like as a baby. His mother responds that he looked like his grandfather, "bald and wrinkly." At the same time, young animals in the jungle are asking their mothers the same question. They all get the same answer (a smaller version of their parents) with the exception of the young bullfrog who is shocked to learn, through a funny song (music included) of his slimy origins. Makes a clever introduction to life cycles, but be sure to initiate a discussion on anthropomorphism after reading the book together.

**What Do You Do When Something Wants to Eat You?** Steve Jenkins. Houghton Mifflin (2001). Young children will delight in first guessing, then seeing, how each of fourteen unusual animals, depicted in layered cut-paper collage, avoid becoming someone else's dinner.

**What Do You Do With a Tail Like This?** Steve Jenkins and Robin Page. Houghton Mifflin (2003). Explore the many amazing things animals can do with their eyes, ears, mouths, noses, feet, and tails in this beautifully illustrated interactive guessing book.

**What is a Life Cycle?** Bobbie Kalman. Crabtree (1998). Introduces the life cycles of plants, insects, amphibians, reptiles, fish, birds, mammals, including humans, and discusses birth, growth, parental care, and reproduction.

**What Lives in a Shell?** Kathleen Zoehfeld. HarperCollins (1994). This selection from the excellent *Let's-Read-and-Find-Out Science* series provides a simple introduction to crustaceans -- snails, turtles, crabs, sea-snails, clams, oysters, and scallops -- with general explanations in clear, informative text illustrated in attractive watercolors. Makes a good companion reading to **The Shell Book**.

**What Planet Are You From, Clarice Bean?** Lauren Child. Candlewick Press (2001). When Clarice learns that a tree on her street is going to be cut down, she and her quirky family become ecowarriors and save the day. A hilarious introduction to preserving our natural world.

**When the Bees Fly Home.** Andrea Cheng. Tilbury House (2002). The son of a beekeeper, Jonathan is not sturdy enough to do some of the work, but with the help of his mother, he finds a way to help the family and form a bond with his father. He puts his own artistic skill to work modeling small wax animals to decorate beeswax candles – which prove so popular that they come home from the local market with orders for more. This book helps children see that artistic and sensitive boys have their own special place. The dual purpose format includes facts about bees at the bottom of some pages.

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**Why Frogs are Wet.** Judy Hawes. HarperTrophy (2000). This *Let's-Read-and-Find-Out* book is full of information on frogs, such as the facts that they can jump thirty times their own body length, catch insects on the wing, breathe underwater or on land and they must always keep their skins wet.

**\*\*Wiggling Worms at Work.** Wendy Pfeffer. HarperCollins (2003). This charming book explains how earthworms eat, move, and reproduce and how they help plants to grow.

**Wonderful Nature, Wonderful You.** Karin Ireland. Dawn Publications (1996). Nature can be a great teacher, reminding us to do things at our own pace and to bloom where we are planted. With a light touch especially suited for children, the author explores the lessons of nature and finds their relevance to all of us. She shapes the qualities of nature into a metaphor for positive values, gracefully interweaving inspiration and fascinating fact. The striking illustrations by Christopher Canyon depict the beauty and diversity of nature.

**Welcome to the River of Grass.** Jane Yolen. G.P. Putnam's Sons (2001). This poetic look at the endangered Everglades ecosystem invites readers into a world of rare beauty ("Welcome to the river of grass,/ running green/ from side to side,/ a river that is inches deep/ and miles wide"). A Did You Know? Section at the end gives more information. Other environmentally-themed books by this author: **Welcome to the Ice House**, **Welcome to the Sea of Sand**, and **Welcome to the Green House**.

**What Did I Look Like When I was a Baby?** Jeanne Willis. Putnam (2000). A little boy asks his mother what he looked like as a baby. His mother responds that he looked like his grandfather, "bald and wrinkly." At the same time, young animals in the jungle are asking their mothers the same question. They all get the same answer (a smaller version of their parents) with the exception of the young bullfrog who is shocked to learn, through a funny song (music included) of his slimy origins. A fun introduction to the concept of heredity.

**What's Alive?** Kathleen Weidner Zoefeld. HarperCollins (1995). People, plants, and animals are all alive, but is a doll alive? This book shows children how to determine if something is living or nonliving by discussing the characteristics and needs of living things.

**\*What's Eating You?** Nicola Davies. Candlewick (2009). Explores the weird and wonderful world of parasites, from tiny ticks to terrible tapeworms.

**What's It Like to Be a Fish?** Wendy Pfeffer. HarperCollins (1996). You can't breathe underwater, but a fish can. You can't eat underwater, but fish do it every day. A fish's body is designed for life underwater. Read this book to find out how a fish's sleek body, fins, scales, and gills keep him in the swim. Then read on to learn how to set up your own goldfish bowl.

**When Autumn Comes.** Robert Maas. Henry Holt and Company (1990). Spare text and beautiful photos capture the activities of people and animals in response to changing seasons.

**When the Bees Fly Home.** Andrea Cheng. Tilbury House (2002). The son of a beekeeper, Jonathan is not sturdy enough to do some of the work, but with the help of his mother, he finds a way to help the family and form a bond with his father. He puts his own artistic skill to work modeling small wax animals to decorate beeswax candles – which prove so popular that they come home from the local market with orders for more. This book helps children see that artistic and sensitive boys have their own special place. The dual purpose format includes facts about bees at the bottom of some pages.

**\*White Owl, Barn Owl.** Nicola Davies. Candlewick (2009). A young girl and her grandfather look for a barn owl night after night.

**Who Eats What? Food Chains and Food Webs.** Patricia Lauber. This Stage 2 Let's-Read-and-Find-Out Science book presents food chains and food webs on land and under water. Besides showing who eats what in the wild, it brings the food chain idea closer to home with the suggestion that children draw pictures showing the chains for the things they eat, such as their milk, which came from a cow, which ate grass. Simple ink-and-watercolor drawings illustrate the clear, simple text.

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**Who Will Plant a Tree?** Jerry Pallotta. Sleeping Bear Press (2010). With a touch of humor, this book presents the many ways that seeds are dispersed...a squirrel buries an acorn, ants march a pine nut into their tunnel, a dolphin playfully pushes a coconut onto the beach...and so on.

See More

**Who's Home? An Animal Lift-the-Flap Book.** Neecy Twinem. Grossett and Dunlap (2003). Lift-the-flap illustrations and simple text describe the habitats of many familiar woodland creatures.

**Whose Baby is This?** Wayne Lynch. Whitecap Books (2000). Using color photographs and descriptions of animal babies, the reader must guess what kind of animal each one is. The answer is revealed on the page following the photo and description.

**Whose Feet Are These?** Wayne Lynch. Whitecap Books (1999). This collection features the feet of 14 creatures. Children can guess whose feet they see before turning the page to discover a photograph of the complete animal, along with more facts about the animal. A fun introduction to animal adaptations for primary students.

**Whose Nose is This?** Wayne Lynch. Whitecap Books (2001). Asks the reader to identify various animals from photographs and descriptions of their noses and provides information about the physical characteristics and behavior of each animal. Another fun introduction to animal adaptations for primary students.

**Why Do Leaves Change Color?** Betsy Maestro. HarperCollins (1994). This Stage 2 Let's-Read-and-Find-Out book includes colorful, detailed illustrations of a variety of tree leaves that might be found in Ohio, such as the Red Maple, White Oak, Sassafras, and Elm, and describes their responses to the changing seasons. Explains the concepts of photosynthesis, pigments, and chlorophyll in terms children can understand, and includes simple instructions for making a leaf rubbing and for pressing leaves

**Wish for a Fish.** Bonnie Worth. Random House (1999). From the tiniest krill to the large gray whale, ocean creatures swim madly through this clever Dr. Seuss-style rhyming book. Cat in the Hat, aboard the S.S. *Undersea Glubber*, narrates this fact-filled story of life under the sea, along with sidekicks Thing One and Thing Two. Readers learn all about the ocean's food chain, different light zones, and fascinating information about the large mammals that live there.

**You're Aboard Spaceship Earth.** Patricia Lauber. HarperTrophy (1996). This *Let's-Read-and-Find-Out* Science book explains how the Earth is like a spaceship in orbit – it has everything onboard that we need to survive: water, food, and oxygen. The book illustrates the water, mineral, and oxygen cycles, showing that Earth makes a great spaceship, but tells readers that “our job is to keep it that way”.

## **EARTH AND SPACE SCIENCE**

**\*\*Be a Friend to Trees.** Patricia Lauber. HarperCollins (1994). This book shows that trees are a natural resource we can't live without. It describes trees as home and food for various animals, as providers of fruits and nuts for humans, as sources of wood, paper, rubber, and turpentine. Then words and pictures demonstrate the process of photosynthesis, step-by-step: how trees make food in their leaves and how they release the oxygen we need to breathe. A final section gives hands-on examples for recycling paper and shows two youngsters planting a tree.

**The Cloud Book.** Tomie de Paola. Holiday House (1985). Introduces the ten most common types of clouds, the myths that have been inspired by their shapes, and what they can tell about coming weather changes.

**Cloud Dance.** Thomas Locker. Silver Whistle (2000). This masterful blending of art and science takes readers on a journey up to the heavens, through thick cumulous clouds that bring snow, wispy cirrus clouds that flutter in the wind, and wide stratus clouds that blanket the sky. Basic scientific information sheds light on the altitude, shape, and color of clouds, and Thomas Locker's luminous paintings and poetic text create an inspiring and enlightening book for everyone to enjoy.

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***Cloudy with a Chance of Meatballs.*** Judi Barrett. Aladdin (1982). In the town of Chewandswallow, meals rain from the sky at appropriate times of the day, but a change in the weather blows in massive problems. Provides a zany introduction to the study of weather.

***Come on Rain.*** Karen Hesse. Scholastic Press (1999). Hesse explores the anticipation and joy of a summer storm following weeks without rain in an urban neighborhood. In their bathing suits, four friends stand outside as the rain descends, and their infectious joy quickly spreads to their mothers, who come out and dance with their daughters. Beautifully drafted watercolor paintings illustrate the lyrical text, creating a wonderful sense of atmosphere. Have students write a descriptive piece about a weather event they have experienced.

***\*A Cool Drink of Water.*** Barbara Kerley. National Geographic (2002). This striking picture book combines National Geographic photographs with poetic text to show that people all around the world are unified by their common need to use and conserve water.

***\*\*Diary of a Worm.*** Doreen Cronin. Joanna Cotler Books (2003). A young worm discovers, day by day, that there are some very good and some not so very good things about being a worm in this great big world. Makes an amusing introduction to a lesson on worms or soil, but be sure to initiate a discussion on anthropomorphism after reading the book together.

***Dirt.*** Steve Tomecek. National Geographic (2002). Informative text and playful illustrations explain how soil is made, how soil changes if you dig deep enough, what each layer of soil is called and its importance as a natural resource that living things need to survive.

***Down Comes the Rain.*** Franklyn M. Branley. HarperTrophy (1997). How do raindrops get inside clouds? What is water vapor? What does the inside of a hailstone look like? These questions about Earth's water cycle are answered in this title from the *Let's-Read-And-Find-Out -Science* series. Included are hands-on activities that children can do themselves in the classroom or at home.

***\*Down the Drain: Conserving Water.*** Anita Ganeri and Chris Oxlade. Heinemann-Raintree (2005). Explains why we need water, how much water we use, where water comes from, how we can save water, and why clean water is so important.

***Drip! Drop! How Water Gets to Your Tap.*** Barbara Seuling. Holiday House (2000). JoJo and her zany dog, Willy, explain the water cycle and the water treatment process. In the back of the book there are simple experiments about filtration, evaporation, and condensation.

***A Drop Around the World.*** Barbara Shaw McKinney. Dawn Publications (1998). A clever poem follows a drop of water on the "Jet Stream Express" from a cloud near Maine. Symbols appearing throughout the book illustrate the different phases and transformations that the drop goes through on its journey. Also available is the teacher's guide by Bruce and Carol Malnor.

***Earth: Our Planet in Space.*** Seymour Simon. Simon and Schuster (2003). Stunning color photographs of Earth in space highlight the text which details how Earth's unique position in relation to the sun makes it hospitable to life.

***Earthquakes.*** Ellen Prager. National Geographic (2002). From the Jump into Science series, this colorful book provides basic information about earthquakes: what they are, why and where they occur, how they affect buildings, and what children should do when they feel the earth shake. The scientific facts are well focused and simply explained. The last double-page spread presents a simple activity simulating an earthquake with a pan of sand and a brick or rock.

***Earthquakes.*** Franklyn M. Branley. HarperTrophy (1994). This *Let's-Read-and-Find-Out Science* book includes information about how earthquakes occur, what happens during an earthquake, how it feels to be in an earthquake, and what safety measures to take.

**Energy: Heat, Light, and Fuel.** Darlene Stille. Picture Window Books (2004). This nonfiction chapter book is a delightful introduction to energy resources – how energy gets things done, where energy comes from, and how to conserve energy. The cartoonish illustrations and “fun facts” sections enhance the simple, straightforward text.

**\*Erosion (The Weather Report Series).** Virginia Castleman. Perfection Learning (2004). This nonfiction chapter book tells how water, wind, and ice change the surface of the Earth through erosion.

**Everybody Needs a Rock.** Byrd Baylor. Aladdin Paperbacks (1985). Everybody needs a rock -- at least that's the way this particular rock hound feels about it in presenting her own highly individualistic rules for finding just the right rock for you. Not just any rock, Baylor is careful to note, but “a special rock that you find yourself and keep as long as you can--maybe forever.” Follow the reading by asking students to find their own rocks and then observe, describe, measure, sort, and classify the rocks.

**Feel the Wind.** Arthur Dorros. HarperCollins (1989). This *Let's-Read-and-Find-Out* book explains what causes wind and how it affects our environment. It also includes instructions for making a weather vane.

**Flash, Crash, Rumble and Roll.** Franklyn M. Branley. HarperTrophy (1999). This *Let's-Read-and-Find-Out Science* book (Stage 2) explains how and why a thunderstorm occurs and gives safety steps to follow when lightning is flashing.

**Fossil.** Claire Ewart. Walker and Company (2004). Claire Ewart's inviting text and dramatic artwork transport readers back to the age of the dinosaurs to take flight with a majestic pterosaur that once soared through North American skies. The rich, rhyming text lyrically describes a typical day for the female pterosaur, following it from sunup to sunup. And when the pterosaur finally lives out its natural life, layers of Earth and layers of time work to transform this creature into a fossil-an amazing transformation that happens over millions of years.

**\*Grand Canyon: A Trail Through Time.** Linda Vieira. Walker and Company (1997). The wonders of the Grand Canyon are depicted in detailed illustrations by Christopher Canyon that feature fluorescent shades of pink, orange, and purple. The text reveals the history in each boulder and butte and how numerous species thrive in this harsh terrain. The author makes it clear that the canyon continues to change, day by day and over millions of years. Endpapers give names and dates of rock layers and a timeline provides an additional frame of reference. A good general introduction to the subject.

**The Great Trash Bash.** Loreen Leedy. Holiday House (1991). Cartoonish illustrations and simple text reveal how the animal citizens of Beaston discover better ways to recycle and control their trash.

**I Face the Wind.** Vicki Cobb. HarperCollins (2003). From the Science Play series, this engaging book encourages children to observe, experiment, and learn about wind and air. The illustrations are eye-catching, and the combination of information and experimentation is appealing. This book from the *Let's-Read-and-Find-Out Science* series explains how and why a thunderstorm occurs and gives safety steps to follow when lightning is flashing.

**I Have a Friend.** Keiko Narahashi. Aladdin (1998). A small boy tells about his friend who lives with him, who follows him, who sometimes is very tall, but who disappears when the sun goes down – his shadow.

**\*\*If You Find a Rock.** Peggy Christian. Harcourt Brace (2000). Poetic text and thoughtfully composed, hand-tinted photographs combine to explore the variety and purposes of rocks. A good selection for introducing primary geology units or setting the mood for creative writing.

**Let's Go Rock Collecting.** Roma Gans. Harper Collins (1997). Children collect rocks and learn about the formation and characteristics of igneous, metamorphic, and sedimentary rocks in this *Let's-Read-and-Find-Out Science* book.

**Me and My Place in Space.** Joan Sweeney. Dragonfly (1999). Where is the earth? Where is the sun? Where are the stars? This book takes on the simplest questions about the universe and gives answers that young

children can easily understand. Using clear language, drawings, and diagrams, space unfolds before a child's eyes. With our world as the starting point, we are taken on a tour past each planet and on to the stars--all through the eyes of a young girl. A glossary, included for further information, helps to provide an enjoyable, easy-to-read, and easy-to-use introduction to the universe.

***Mighty Tree.*** Dick Gackenbach. Voyager Books (1996). In simple text, Gackenbach tells how three wind-blown seeds take root in the forest, where they grow into mature trees. One is cut down and taken to a paper mill, where it is turned into a variety of products. The second becomes the beautiful centerpiece for a big city's Christmas celebration. The third remains in the forest and becomes "the most important tree of all" because it offers food and shelter to a variety of insects, birds, and other small animals. A great explanation of the use and management of this precious natural resource.

***\*The Moon Book.*** Gail Gibbons. Holiday House (1998). The concise text describes lunar phases, eclipses, tides, and a brief history of lunar exploration. The illustrations offer effective and accessible depictions of the phases of the moon and eclipses.

***The Moon Seems to Change.*** Franklyn Branley. HarperTrophy (1987). Because the moon revolves around the Earth, it seems to grow and shrink. Children can read this *Let's-Read-and-Find-Out Science* book about the phenomena of the moon's phases and can model with an orange, a pencil, and a flashlight how the moon looks different at different times of the month.

***Moonbear's Shadow.*** Frank Asch. Aladdin (1985). Bear tries everything he can think of to get rid of his shadow. His shadow changes size throughout the day. A great way to get kids to notice the position of the Sun in the sky at various times of the day.

***My Place in Space.*** Robin Hirst. Orchard Books (1992). When a bus driver asks Henry and his sister if they know where they live, Henry responds with a detailed description, locating their house by street, town, country, planet, solar system, galaxy, and universe.

***Ohio Thunder.*** Denise Dowling Mortensen. Clarion Books (2006). Lyrical verse and stunning illustrations vividly bring to life the speed and drama of a summer storm on a midwestern farm. This remarkable pairing of word and pictures conveys a sense of wonder about the natural world and makes for a picture book any child who has ever been frightened by a storm will respond to.

***On the Day You Were Born.*** Debra Frasier. Harcourt Brace (1997). This book celebrates the cycle of birth and the human connection to the earth. In the final pages, each illustration and theme in the book (migrating animals, gravity, glowing moon, rising tide, etc.) is explained in simple and direct language that can be used to teach older children how nature works on our planet, and how Earth works in the universe.

***\*Papa, Please Get the Moon For Me.*** Eric Carle. Little Simon (1991). Monica wants the moon to play with, so her Papa sets out to get it for her. It isn't easy to climb all the way up to the moon, but he finally succeeds -- only to find that the moon is too big to carry home. The book depicts the waxing and waning of the moon, but contains pictures and concepts that could lead to misconceptions. Have students make their own moon journals to compare to the moon phases in the book.

***Planet Earth, Inside Out.*** Gail Gibbons. Morrow Junior Books (1998). From its red-hot core to the highest mountain peak, come see Earth as you've never seen it before in a colorful introduction to the powerful forces shaping our home.

***Postcards From Pluto: A Tour of the Solar System.*** Loreen Leedy. Holiday House (1993). A group of young students is given a guided tour of the solar system by a robot. After each stop, the explorers write postcards back home that contain information about each planet. The text is accompanied by paintings that portray realistic images of each planet.

***Rain.*** Manya Stojic. Crown Books for Young Readers (2000). When rain comes to the parched African savanna, the animals use all their senses to track the storm. The porcupine smells rain in the air. The zebras see

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lightning. The baboons hear thunder. The rhino feels the first drops. And the lion tastes the cool water. For a time, the grasslands abound with new green leaves, juicy fruits, and fresh pools of water. But soon the hot sun dries out the land, and the animals must again wait for the next big rain.

**Recycle! A Handbook for Kids.** Gail Gibbons. Little, Brown, and Company (1992). This NSTA-CBC Outstanding Science Trade Book for Children selection illustrates the contents of a landfill and how to recycle various products to cut down on the need for landfills--for which space is already in short supply. Describes how to recycle, why it's necessary, and its benefits. The plea is to make our planet a safer and healthier place to live with a habit that is fun and easy--recycling.

**\*Rise the Moon.** Eileen Spinelli. Dial Books for Young Readers (2003). A variety of people and animals are touched by an enchanting moonlit night. Sharing this beautifully illustrated book is a great way to get young children thinking about the moon and they changes the observe in the moon's appearance throughout the month.

**\*\*Rocks: Hard, Soft, Smooth, and Rough.** Natalie Rosinsky. Picture Window Books (2003). Simple text and cartoonish illustrations provide information on igneous, sedimentary, and metamorphic rocks.

**Rocks and Minerals Series.** Melissa Stewart. Heinemann Library (2002). This seven book series includes rock types, mineral composition, and fossil fuels. Includes titles such as: *Igneous Rocks, Metamorphic Rocks, Sedimentary Rocks, and Minerals.*

**Seasons series: Fall, Spring, Summer, Winter, Seasons 123, Seasons ABC.** Patricia Whitehouse. Heinemann (2003). This series examines seasonal changes from a child-centered point of view. Each book focuses on things that children notice in their environment, including the sights, sounds, smells, and tastes of each season.

**Snow.** Manya Stojic. Crown Books for Young Readers (2002). As autumn blends into winter, and then snow begins to fall, Moose, Bear, Fox, and other forest creatures prepare for the long winter ahead. A gentle story describing how animals adapt to changing seasons.

**Soil.** Chris Oxlade. Heinemann (2002). A simple presentation of information about soil, including its composition, properties, and some of its uses. It includes fascinating photographs and a helpful glossary.

**Soil: A True Book.** Christin Ditchfield. Children's Press (2002). Labeled pictures, clear text, and full-color photographs describe properties, soil types, uses, conservation, and fun facts. Includes a glossary, additional resources, index, and meet the author.

**\*Somewhere in the World Right Now.** Stacey Schuett. Dragonfly (1997). Maps, paintings, and text chronicle simultaneous activities around the world as one child goes to bed in Boston. The book makes a charming introduction to the concepts of day/night, time zones, and rotation of the earth.

**\*\*Spots of Light: A Book About Stars.** Dana Meachen Rau. Picture Window Books (2006). Simple text and digitally generated illustrations explains the "birth" of stars, star colors, constellations, and galaxies.

**Stars.** Steve Tomecek. National Geographic (2003). Offers basic concepts about stars are carefully explained – why they seem to rise and set, what one actually looks like, distance from the sun, etc. Vivid artwork and clearly labeled diagrams help to extend the text.

**Sun.** Steve Tomecek. National Geographic (2001). This fun, fact-filled book answers many questions about the sun. Colorful artwork and engaging hosts – two kids and a purple cat - help children learn about our nearest star.

**The Sun is My Favorite Star.** Frank Asch. Harcourt (2000). This book for very young children uses colorful computer-enhanced watercolor illustrations and simple text to teach about our sun. Children learn that the sun is a star that illuminates the moon, dries up the morning dew, and causes shadows and rainbows.

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***Sun Up, Sun Down: The Story of Day and Night.*** Jacqui Bailey. Picture Window Books (2004). This amusing title guides readers through a day on Earth, clearly explaining the effect of Earth's rotation and orbit. Colorful cartoons and insets keep the book lively and engaging. End matter includes "More Great Stuff to Know," "Try It and See," a "Fact Hound" website, and a small trivia section.

***Stargazers.*** Gail Gibbons. Holiday House (1992). Simple text and illustrations tell what stars are, why they twinkle, how constellations were named, and how telescopes are used to study stars.

***Sun.*** Steve Tomecek. National Geographic (2001). This fun, fact-filled book answers many questions about the sun. Colorful artwork and engaging hosts – two kids and a purple cat - help children learn about our nearest star.

***\*\*Sunshine on My Shoulders.*** John Denver. Dawn Publications (2003). John Denver's song Sunshine on My Shoulders, which celebrates the simple things in life such as sunshine, nature, and loving relationships.

***There's No Place Like Space (Cat in the Hat's Learning Library).*** Tish Rabe. Random House (1999). The perfect first space book for early readers, *There's No Place Like Space* takes young children on a whirlwind tour of the solar system, with a few constellations thrown in for good measure. Cat in the Hat straps on his space suit and rhymes his way among the nine planets, presenting important information along the way. Even older children will be engaged by the abundance of space facts presented in entertaining, Dr. Seuss-style rhymes.

***Thundercake.*** Patricia Polacco. The Putnam and Grossett Group (1990). When the air get heavy and dark clouds drift low over the fields of Grandma's farm, her frightened granddaughter hides under the bed. But Grandma insists that this is Thunder Cake baking weather and the two are soon scrambling to gather the ingredients to bake a cake – and get it into the oven before the storm arrives. Includes the formula for determining the distance of a storm.

***Twilight Comes Twice.*** Ralph Fletcher. Clarion Books (1997). The eloquent text and lush paintings evoke the magic of twilight. In the morning it arrives as dawn easing the world awake with light. In the evening, twilight falls as dusk giving everything a special luster.

***Volcanoes.*** Ellen Prager. National Geographic (2001). A fire-breathing dragon takes children on a grand adventure to learn more about volcanoes in this colorful book from the Jump into Science series. Venturing into an active volcano, kids discover how magma inside the Earth begins to bubble and push its way upward, causing steam to escape through cracks overhead. Young readers will travel to active volcano sites around the world to discover the different characteristics and behavior of various volcanoes.

***Water.*** Frank Asch. Voyager Books (2000). This books points out to very young students that water is everywhere on earth from high in the sky to deep in the ground.

***Water Dance.*** Thomas Locker. Harcourt Brace & Company (1997). This poetic, artistic, and unusual introduction to the water cycle features a free-verse narrative illustrated by landscape and seascape paintings that show water in various forms referred to in the text: "I am the waterfall," "I am the clouds," or "I am the thunderhead." At the end of the book each picture appears in miniature accompanied by a paragraph explaining that particular phase of the water cycle.

***We Use Water.*** Robin Nelson. Lerner Publications (2003). This non-fiction book for very young readers shows the many ways people use water. Children will see themselves making ice cubes, washing their hands, fighting fires, and running on the beach.

***Weather series: A Cloudy Day, A Rainy Day, A Snowy Day, A Sunny Day, A Windy Day.*** Robin Nelson. Lerner Classroom. Focusing on five different kinds of weather, this engaging series show emergent readers the basics of weather using short, simple, repetitive sentences.

***Weather Words and What They Mean.*** Gail Gibbons. Scholastic (1990). This book offers simple explanations and colorful illustrations that teach children key words involved in weather forecasting.

***What the Animals Were Waiting For.*** Jonathan London. Scholastic Press (2001). In simple, stirring verse, this stunningly illustrated picture book tells the story of how important rainfall is to the cycle of life on the African savannah.

***What Makes Day and Night?*** Franklyn M. Branley. HarperCollins (1986). Branley offers a simple explanation of how the rotation of the earth causes day and night in this *Let's-Read-and-Find-Out Science* book.

***What Shapes the Land?*** Bobbie Kalman. Crabtree (2009). Presents various landforms and the processes that shape them, some rapid like volcanic eruptions, and some slow, like erosion and weathering. Includes labeled photographs, glossary, table of contents, and index.

***What Will the Weather Be?*** Lynda Dewitt. Scott Foresman (1993). Clear prose and brightly-colored, cartoonish illustrations explain how forecasters predict the weather. Includes many vocabulary terms such as meteorology, barometer, anemometer, wind vane, and hygrometer. A good introduction to a complex topic.

***\*\*When I Heard the Learn'd Astronomer.*** Walt Whitman and Loren Long. Walt Whitman's poem "When I Heard the Learn'd Astronomer" is an enduring celebration of the imagination. Here, Whitman's wise words are beautifully recast by *New York Times* #1 best-selling illustrator Loren Long to tell the story of a boy's fascination with the heavens. A thought-provoking and imaginative introduction to a unit on astronomy.

***When the Moon is Full: A Lunar Year.*** Penny Pollack. Little, Brown, and Company (2001). Hand-colored woodcuts and lyrical poems portray the twelve full moons of the year. Traditional Native American names, from the Wolf Moon in January to the Long Night Moon in December, follow the monthly path of the moon throughout the year. A question-and-answer section at the end provides information about the moon's surface, lunar eclipses, the true meaning of a blue moon, etc.

***Where Does the Garbage Go?*** Paul Showers. HarperCollins (1994). Explains how people create too much waste, and how waste is recycled or put into landfills.

***\*\*Wiggling Worms at Work.*** Wendy Pfeffer. HarperCollins (2003). This charming book explains how earthworms eat, move, and reproduce and how they help plants to grow.

***Wonderful Worms.*** Linda Glaser. Millbrook Press (1992). Simple text and colorful illustrations explore how earthworms cause changes to their surroundings by digging burrows in the ground. Encourages an appreciation for these small creatures by explaining the vital role that earthworms play in the planet's ecosystem. Includes cross-section illustrations of the worm's underground environment and informative charts.

***Wood: A True Book.*** Christin Ditchfield. Children's Press (2002). This informative non-fiction chapter book describes different types of wood, how it is processed and used, and how to conserve this valuable natural resource. Full-color photographs with captions, a "find out more" section, table of contents, glossary, and index make this a good choice to introduce features of non-fiction.

## **SCIENCE AND TECHNOLOGY**

***Brainstorm! The Stories of Twenty American Kid Inventors.*** Tom Tucker. Sunburst (1998). This inspiring book features young inventors from colonial to modern times. Black-and-white photographs and pen-and-ink drawings accompany the stories describing the invention of earmuffs, the Popsicle, the resealable cereal box, and many more. Many inventors in this book started their careers as children and some held patents while still in their teens. Others did not receive their first patent until they were older and were able to raise the money necessary to fund the patenting process. The last chapter explains that process and gives advice on ways to save money on searches.

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***Bridges are to Cross.*** Philemon Sturges. This beautifully-illustrated and informative picture book explores different kinds of bridges, from a simple log to train bridges to fortified castle bridges. Readers will feast their eyes on these bridges from around the world, all painstakingly created with intricately cut paper.

***The Busy Building Book.*** Sue Tarsky. Puffin (2001). Young engineers will be hooked by this basic introduction to what happens at a construction site. Opening with an empty city lot, the book shows the many steps involved in erecting a new building. Children will learn how tools are helpful when making things and that there are usually several steps needed to build something.

***Close, Closer, Closest.*** Shelley Rotner and Richard Olivo. Atheneum (1997). Rotner's clear, detailed photographs of common objects introduce concepts of perspective and scale. Each object is photographed in glorious color from three different distances. Good for very young scientists learning about observation and magnification.

***The Crow and the Pitcher.*** Stephanie Gwyn Brown. Tricycle Press (2003). We all know Aesop's classic fable of the Crow and the Pitcher, but Stephanie Gwyn Brown uses this story to guide readers through six steps of the scientific method—from question to communication—with Crow as the model scientist. Be sure to initiate a discussion on anthropomorphism after reading the book together.

***A Day in the Life of a Builder.*** Linda Hayward. Turtle Books (2001). This book follows builder Jack Dale from home to office to several job sites and back home again. Engaging photographs and simple sentences describe tools, safety equipment, and heavy machinery used by construction workers.

***Energy Makes Things Happen.*** Kimberly Brubaker Bradley. HarperTrophy (2002). This *Let's Read-and-Find-Out* (Stage 2) book provides a very general introduction to the sources and uses of energy.

***The Great Kapok Tree.*** Lynne Cherry. Voyager Picture Book (1990). The many different animals that live in the Great Kapok Tree in the Brazilian rainforest try to convince a man with an ax of the importance of not cutting down their home. The book focuses only on the needs of the animals living in the tree and does not consider the needs of people. Have students point out that the tree could also be used for firewood, building materials, or space to farm in order to present a balanced view of nature and the choices that are involved with the extraction of natural resources from the forest. ***A Guide for Using The Great Kapok Tree in the Classroom*** by Lynn DiDominicis is also available.

***The Great Trash Bash.*** Loreen Leedy. Holiday House (1991). Cartoonish illustrations and simple text reveal how the animal citizens of Beaston discover better ways to recycle and control their trash.

***Here's What You Do When You Can't Find Your Shoe (Ingenious Inventions for Pesky Problems).*** Andrea Perry. Atheneum (2003). Short whimsical poems describe crazy inventions, like footsie floss, hotels for bugs, and a super spider spotter for Miss Muffet.

***The House in the Meadow.*** Shutta Crum. Albert Whitman & Company (2003). Over in the meadow there's a spring wedding, with the couple's 10 best friends to celebrate. What's next? A house! 9 diggers, 8 masons, 7 carpenters, 6 well diggers, 5 roofers, 4 plumbers, 3 electricians, 2 painters and 1 inspector show up with all their trucks and tools to build a new house. Provides a good example of how several steps are needed when building something, and that the appropriate materials must be used.

***How Do You Lift a Lion?*** Robert E. Wells. Albert Whitman and Co. (1996). Have you ever tried to lift a lion? Gravity makes it difficult, but you could do it with a lever. Lively text and watercolors engage readers while they learn the function of levers, wheels, and pulleys.

***How a House is Built.*** Gail Gibbons. Holiday House (1996). Describes how the surveyor, heavy machinery operators, carpenter crew, plumbers, and other workers build a house.

***\*If I Built a Car.*** Chris Van Dusen. Puffin (2007). Jack has designed the ultimate fantasy car. This whimsical take on the car of the future will ignite the imaginations of inventors of all ages.

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***Iggy Peck, Architect.*** Andrea Beaty. Abrams Books for Young Readers (2007). Every since he was a baby, Iggy Peck has built towers, bridges, and buildings, which comes in handy when his second grade class is stranded on an island during a picnic.

***\*\*Imaginative Inventions.*** Charise Mericle Harper. Little, Brown & Company (2001). The who, what, where, when, and why of inventions like roller skates, potato chips, marbles, and pie told in rhymes and whimsical illustrations.

***\*Inventing the Automobile.*** Erin Banting. Crabtree (2006). From the horse-drawn carriage to cars of the future, this book details the evolution of the automobile.

***\*\*Leo Cockroach: Toy Tester.*** Kevin O'Malley. Walker & Company (2001). This quirky tale about a cockroach who works for a toy company is a fun way to introduce the research and development process.

***Let's Try it Out With Towers and Bridges.*** Seymour Simon and Nicole Fauteux. Simon & Schuster (2003). This book contains fun-filled activities that encourage young children to use familiar and safe objects found in their homes or classrooms to make observations about how things work.

***Magic Toolbox.*** Mie Araki. Chronicle Books (2003). Fred the rabbit is having trouble building things, but with the help of a magic toolbox, he designs a house on paper and then successfully constructs it.

***Marvelous Mattie: How Margaret E. Knight Became an Inventor.*** Emily Arnold McCully. Farrar, Straus, Giroux (2006). With her sketchbook labeled My Inventions and her father's toolbox, Mattie could make almost anything – toys, sleds, and a foot warmer. When she was just twelve years old, Mattie designed a metal guard to prevent shuttles from shooting off textile looms and injuring workers. As an adult, Mattie invented the machine that makes the square-bottom paper bags we still use today. With charming pen-and-ink and watercolor illustrations, this introduction to one of the most prolific female inventors will leave readers inspired.

***Neo Leo: The Ageless Ideas of Leonardo da Vinci.*** Gene Beretta. Henry Holt and Company (2009). This clever book shows how daVinci's ideas – many inspired by his study of nature – foreshadowed modern inventions, offering a window into the future.

***Now and Ben: The Modern Inventions of Benjamin Franklin.*** Henry Holt and Company (2006). This clever, introduction to the contributions of Ben Franklin brings his genius to life. Each spread features a "Now" description of a modern concept or convenience facing an early "Ben" idea. Engaging and humorous watercolor cartoons depict just how Franklin's inventions were conceived and developed.

***Raise the Roof.*** Anastasia Suen. Viking Children's Books (2003). It starts with drawing up the floor plans and ends with laying down a welcome mat, but in between there are lots of things to do. Children will love following all the steps as bulldozers clear the land and cement mixers pour the foundation. Then it's time to put up the walls, install the plumbing, nail down the roof shingles, and hang the doors. Bright, humorous illustrations capture all the details around the construction site as a busy family lends a hand (and sometimes a paw!) to build their dream house.

***The Three Little Pigs.*** James Marshall. Puffin Books (1989). This charming version of the classic fairy tale helps students explore that some kinds of materials are better suited than others for making something new.

***Those Building Men.*** Angela Johnson. Blue Sky Press (2001). This poetic book describes the men who moved the earth for canals, laid steel for rail tracks, and cut down trees for building during the last century. A plank road, a railway survey, and a cabled bridge show the fruits of these men's labors. A note at the end pays tribute to the builders. Helps students understand how technology can extend human abilities and affect the individual, family, and community.

**Using Electricity.** Angela Royston. Heinemann Library (2003). This *Heinemann First Library* series introduces electricity by way of everyday situations and objects. It contains colorful photos, as well as activities and questions to encourage further exploration.

**Where the Forest Meets the Sea.** Jeannie Baker. Scholastic Big Books (1987). Lifelike collage illustrations capture an extraordinary visual journey through a tropical rain forest in North Queensland, Australia, following a young boy as he wonders about the survival of his primeval wilderness that is now threatened by civilization. Readers can predict how development might affect the rain forest.

**Where Does the Garbage Go?** Paul Showers. HarperCollins (1994). Explains how people create too much waste, and how waste is recycled or put into landfills. Contains clear charts, graphs, and diagrams the children can analyze with the teacher's help.

**Where Once There Was a Wood.** Henry Holt and Company (1996). This eloquent book shows young readers how people and animals can live side by side - starting in our own backyards. It examines the many forms of wildlife that can be displaced if their environment is destroyed by development and discusses how communities and schools can provide spaces for them to live.

## **SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES**

**\*\*The Busy Body Book: A Kid's Guide to Fitness.** Lizzy Rockwell. Crown (2004). This action-packed introduction to the human body combines colorful illustrations of active kids with detailed information about how the body works.

**Garbage.** Robert Maass. Henry Holt and Company (2000). An informative photo-essay about the ways in which we dispose of garbage, and about the benefits of recycling. The last two pages contain a longer text, which discusses disposal of hazardous waste and creating compost heaps. An attractive book that will be useful for introductory units on garbage and recycling.

**\*Girls Think of Everything.** Catherine Thimmish. Houghton Mifflin (2000). An outstanding collective biography of women and girls who changed the world with their inventions.

**\*\*Hear Your Heart.** Paul Showers. HarperCollins (2001). This Let's-Read-and-Find-Out Science book provides a simple explanation of the structure of the heart and how it works. Includes diagrams and a few hands-on activities.

**Hey Little Ant!** Phillip Hoose and Hannah Hoose. Tricycle Press (1998). A bespectacled ant loaded down with two shopping bags is confronted by a boy who threatens to step on him. The ant pleads that he has a family and community dependent upon him and argues that he shouldn't be stepped upon. At the end, the reader decides whether or not the boy should step on the ant. The story can be used to encourage children to interact with living things in ways that promote respect. This rhyming book is set to a simple tune (sheet music included).

**Just a Dream.** Chris Van Allsburg. Houghton Mifflin (1990). Young Walter is a litterbug who believes sorting trash is a big waste of time. What's more, he thinks his friend's birthday present, a tree, is the most ridiculous gift he's ever seen. When he has a dream about a future Earth devastated by pollution, Walter begins to understand the importance of taking care of the environment.

**The Lorax.** Dr. Seuss. Random House (1971). Published in 1971, *The Lorax* is an ecological warning that still rings true today amidst the dangers of clear-cutting, pollution, and disregard for the earth's environment. Seuss' brilliantly whimsical rhymes and delightfully original creatures tell the cautionary tale of the Once-ler's greedy harvesting of Truffula Trees against the warnings of the Lorax (who speaks for the trees "for the trees have no tongues").

**\*\*Lucas and His Loco Beans: A Bilingual Tale of the Mexican Jumping Bean.** Ramona Moreno Winner. Brainstorm 3000 (2003). With English as the main language, Lucas tells the story of a summertime visit to his

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grandfather's ranch, where he learns about the Mexican Jumping Bean and how his abuelo (grandfather) collected them to play with as a boy. Lucas can hear a clicking noise coming from the bean and can see that the seed itself moves. Grandfather tells Lucas about the moth larva that inhabits the bean until it turns into a moth. In the back of the book there are four pages of diagrams explained in both Spanish and English. Great follow-up to an inquiry activity with Mexican Jumping Beans.

**Michael Recycle.** Ellie Bethel. Worthwhile Books (2010). Recycling super hero, Michael Recycle saves the town of Abberdoo-Rimey. This fun, rhyming book is entertaining and delivers an important message about environmental awareness.

**Michael Recycle Meets Litterbug Doug.** Ellie Bethel. Worthwhile Books (2009). Michael Recycle teaches Litterbug Doug to waste less and recycle more.

**Mistakes That Worked.** Charlotte Foltz Jones. Doubleday (1994). Cartoons illustrate the stories behind inventions such as Silly Putty, Coca Cola, Popsicles, penicillin, and bricks. None of the inventions described in these pages were planned; in fact, some of the inventors had no idea they'd stumbled on something useful until years later, when their works became popular.

**\*Oil Spill!** Melvin Berger. HarperTrophy (1994). This *Let's-Read-and-Find-Out Science* book focuses on one of the worst spills in history--the Exxon Valdez oil tanker spill--to explain in simple terms and with bold, full-color illustrations why oil spills happen, how they are cleaned up and what effects spilled oil has on ocean plants and animals. Helps readers understand how changes in an organism's habitat are sometimes harmful.

**One Less Fish.** Kim Michelle Toft and Allan Sheather. Charlesbridge Publishing (1998). A counting rhyme in reverse, this picture book starts with 12 fish, then counts down 1 by 1 to 0, as they succumb to manmade perils under the sea. Rhymed couplets make up the text for young children. Older students will want to hear the dangers described in greater detail in accompanying paragraphs of information. Useful for teaching about the many threats to ocean ecosystems.

**\*Prince William.** Gloria Rand. Henry Holt & Company (1992). This fictional story is based on the 1989 Exxon Valdez oil spill. Readers will learn about the massive volunteer efforts that go into cleaning the beaches and saving the animals after oil spills.

**Recycle Every Day!** Nancy Elizabeth Wallace. Marshall Cavendish (2003). Minna decides to enter a poster contest for the Community Recycling Calendar. If her poster is picked, it will be printed in the calendar. She is so excited! She wants to come up with a really different idea. Her family reduces, reuses, and recycles. They give her lots of ideas.

**A River Ran Wild.** Lynne Cherry. Houghton Mifflin (1992). This book follows the story of the polluting of the Nashua River to its cleanup, brought about by the determination of a local woman. Each double spread examines one period or topic in the life of the river and includes a brief, informative text, attractively bordered with miniature illustrations of significant wildlife, artifacts, and events. This book can inspire children to take part in environmental stewardship- they really can make a difference.

**Shelterwood.** Susan Hand Shetterly. Tilbury House (1999). In this picture book set in Maine, a woman recalls the time spent with her grandfather as a girl, when she learned about nature and the proper stewardship of the land. At the end of the book, the girl learns how proper care of the land can lead to the regeneration of the forest, even after logging. This book can lead to a discussion of how renewable energy resources can be managed.

**Saguaro Moon.** Kristin Joy Pratt-Sarafini. Dawn Publications (2002). A young narrator explores the Sonoran desert, recording her wonderings, scientific facts, and accounts of her experiences in a nature journal decorated by her paintings of desert plants and animals. This book will inspire a love of nature in young readers and serve to show how keeping records of observations and investigations is important.

***Salamander Rain: A Lake and Pond Journal.*** Kristin Joy Pratt-Sarafini. Dawn Publications (2001). Journal notes, maps, illustrations, newspaper clippings, and text provide a rich description of seasonal changes that occur in a temperate pond community. The book acts as an invitation for readers to explore and learn more about wetlands, and provides a wonderful model for student journaling.

***The Tiger Has A Toothache: Helping Animals at the Zoo.*** Patricia Lauber. National Geographic (2002). This delightfully informative book takes children behind the scenes to show how zookeepers and veterinarians take care of animals. Illustrations show a zoo staff diverse in gender and ethnicity.

***The Wartville Wizard.*** Don Madden. Aladdin Paperbacks (1993). This humorous tale is about a tidy old man who spends his time cleaning up the litter that the thoughtless slob of Wartville leave behind. One day Mother Nature gives him "power over trash." He then commands that litter "go back and stick to the person who threw you." The results are hilarious, the lesson is learned, and Wartville is cleaned up once and for all.

***The Whales' Song.*** Dyan Sheldon. Dial Books (1991). Entranced by her grandma's stories of the mysterious singing whales she loved as a child, Lilly longs to see them herself. But her grumpy great-uncle counters such fantasies and says to the grandmother: "Whales were important for their meat, and for their bones, and for their blubber. Don't fill her head with nonsense." That evening, the whales fill Lilly's dreams as they leap and dance in the moonlight. She believes they will come, if only she can let them know how to find her.

***What is a Scientist?*** Barbara Lehn. Millbrook Press (1998). Simple text and photographs depict children engaged in various activities that make up the scientific process.

***What Planet Are You From, Clarice Bean?*** Lauren Child. Candlewick Press (2001). When Clarice learns that a tree on her street is going to be cut down, she and her quirky family become ecowarriors and save the day. A hilarious introduction to preserving our natural world.

***The Wildlife Detectives: How Forensic Scientists Fight Crimes Against Nature.*** Donna M. Jackson. Houghton Mifflin Company (2000). This book of case files describes how the wildlife detectives at the National Fish and Wildlife Forensics Laboratory analyze clues to catch and convict people responsible for crimes against animals.

## **HISTORY AND NATURE OF SCIENCE**

***Being a Scientist.*** Natalie Lunis and Nancy White. Newbridge Educational Publishing (1999). Children discover that they are already scientists when they explore some of the key science skills, such as observing, measuring, and recording data. Available in big book format.

***The Boy Who Drew Birds: A Story of John James Audubon.*** Jacqueline Davies. Houghton Mifflin Company (2004). This book reveals how the youthful Audubon pioneered observational techniques essential to our understanding of the habits and migration patterns of birds. The young John James grew to be the greatest painter of birds of all time.

***\*Girls Think of Everything.*** Catherine Thimmish. Houghton Mifflin (2000). An outstanding collective biography of women and girls who changed the world with their inventions.

***Girls Who Looked Under Rocks: The Lives of Six Pioneering Naturalists.*** Jeannine Atkinds. Dawn Publications (2000). Six women whose interest in nature began as young girls are profiled in short biographies that are interesting and easy to read. The book highlights each woman's fundamental understanding of the connections between all living things. An excellent resource for middle school students.

***Great Black Heroes: Five Brilliant Scientists.*** Lynda Jones. Cartwheel Books (2000). This easy-reader provides short, concise biographical sketches of the early lives and major accomplishments five African-American scientists.

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***Hidden Worlds: Looking Through a Scientist's Microscope.*** Stephen Kramer. Houghton Mifflin Company (2001). This book provides a wealth of information about how scientists study the world using powerful electron microscopes. The book features the work of microscopist Dennis Kunkel, who has examined and photographed objects ranging from a mosquito's foot to a crystal of sugar to the delicate hairs on a blade of grass. *Hidden Worlds* details how he became interested in microscopes as a boy, how he prepares specimens for study, and how different kinds of microscopes work. Other books in the excellent Scientists in the Field series are ***The Wildlife Detectives: How Scientists Fight Crimes Against Nature*** by Donna Jackson, ***Digging for Bird Dinosaurs: An Expedition to Madagascar*** by Nic Bishop, ***The Bug Scientists*** by Donna Jackson, ***The Woods Scientist*** by Stephen Swinburne, ***Swimming With Hammerhead Sharks*** by Kenneth Mallory, ***The Snake Scientist*** by Sy Montgomery, and ***The Tarantula Scientist*** by Sy Montgomery.

**\*\**The Important Book.*** Margaret Wise Brown. HarperCollins (1977). Simple poems describe everyday objects and the important thing about each of those objects.

***In the Snow: Who's Been Here?*** Lindsay Barrett George. Greenwillow Books (1995). Two children on their way to go sledding see evidence of a variety of animal life. The reader must infer from the evidence what animals visited each location. Each time, the answers are revealed on the next page. Also by this author: ***Around the Pond: Who's Been Here?*** and ***In the Woods: Who's Been Here?***

**\*\**John Muir: America's Naturalist.*** Thomas Locker. Fulcrum Publications (2003). Locker's exquisite watercolor paintings illustrate the story of John Muir, who pioneered the preservationist movement in the United States.

***Leonardo: Beautiful Dreamer.*** Robert Byrd. Dutton Books (2003). Famous in his time as a painter, prankster, and philosopher, Leonardo da Vinci was also a musician, sculptor, and engineer for dukes, popes, and kings. From his futuristic designs to scientific inquiry to artwork of ethereal beauty, this glowing picture book reveals the richness and imagination of Leonardo's own notebooks. Side drawings, supplemental texts, and quotes from Leonardo's writings highlight distinct periods and make the master's art, jokes, explorations, and inventions wonderfully vivid and accessible for readers. This book helps students understand how science and technology have been shaped through the centuries through the contributions of many different people and cultures.

***Nibbling on Einstein's Brain: The Good the Bad & the Bogus in Science.*** Diane Swanson. Annick Press (2001). This fascinating book makes a good introduction to "bad" science. It offers many examples of scientific frauds, poorly designed experiments, irresponsible journalism, scientific half-truths, wild advertising claims, and faulty logic. Also includes a "good" science checklist. Amusing black and white cartoon illustrations. Helps students understand that good scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.

***Odd Boy Out: Young Albert Einstein.*** Don Brown. Houghton Mifflin Company (2004). This book introduces us to the less than magnificent beginnings of one of the most important thinkers of the twentieth century. The spare, precise text, accompanied by sometimes humorous, sometimes lonely portraits, gives the reader a fascinating glimpse of Einstein's strange childhood.

**\*\**Rachel Carson: Preserving a Sense of Wonder.*** Joseph Bruchac. Fulcrum Publishing (2004). This beautifully-illustrated picture book biography presents the life and accomplishments of Rachel Carson. After telling about Carson's childhood, her education, and her career as a writer, Bruchac writes lyrically about her love of nature, particularly the ocean, and concludes with an appreciation of her impact on the environment. Illustrated by Thomas Locker, the paintings are dramatically lit scenes that capture the beauty and majesty of nature. The last page includes excerpts from Carson's writings about the natural world and a paragraph giving some specific biographical information, such as birth and death dates and the titles of her most famous books.

***Rachel: The Story of Rachel Carson.*** Amy Ehrlich. Silver Whistle (2003). Rachel Carson was always curious about the world around her. As a girl she loved being outside, always exploring and wanting to know more about the universe. As an adult Rachel wrote books about what she loved--including *Silent Spring*, a book that brought to the world an awareness of the dangers of pesticides.

***Starry Messenger.*** Peter Sis. Farrar, Straus, and Giroux (1996). Help students understand how science and technology have advanced through the contributions of many different people, cultures and times in history with this lushly-illustrated Caldecott Award-winner. Galileo Galilei courageously broke with tradition to explore new ideas and challenge accepted truths. He offered objective evidence that the earth was not the fixed center of the universe but that it and all the other planets revolved around the sun. Galileo kept careful notes and made beautiful drawings of all that he observed. This book tells the story of his discoveries, rise to prominence and final days as a prisoner of the Church.

***Stickeen: John Muir and the Brave Little Dog.*** John Muir as retold by Donnell Rubay. Dawn Publications (1998). This is a captivating introduction to the life and values of famous environmentalist John Muir. The text is adapted from Muir's original account and the grand illustrations by Christopher Canyon evoke the glacial wilderness of southeastern Alaska. The book relates an incident that occurred when Muir was exploring Alaska. Trapped on a glacier, he made his way across a dangerous ice bridge, followed by an independent-minded dog named Stickeen.

***What is a Scientist?*** Barbara Lenn. Millbrook Press (1998). Simple text and photographs depict children engaged in various activities that make up the scientific process.