

2020 INDIANA SCIENCE TRADE BOOK ANNUAL READING LIST (IN-STAR): THE BEST NEW LITERATURE TO TEACH INDIANA SCIENCE STANDARDS

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The 2020 Indiana Science Trade Book Annual Reading List (IN-STAR) has some visually stunning and content rich resources.

The criteria and process to identify books has been previously described (Thomas et al., 2012). The selections meet the following criteria.

1. The book has substantial science content;
2. Information is clear, accurate, and up to date;
3. Theories and facts are clearly distinguished;
4. Facts are not oversimplified to the point where the information is misleading;
5. Generalizations are supported by facts and significant facts are not omitted;

6. Books are free of gender, ethnic, and socioeconomic bias;
7. Information can be connected to an Indiana Core Standard in Science for grades K-6;
8. Books are readily available in public libraries or bookstores; and
9. Books have received at least one positive review in one of the identified professional journals: *Booklist*, *Bulletin of the Center for Children's Books*, *Horn Book*, *Kirkus Reviews*, *Publishers Weekly*, *School Library Journal*, and *Science and Children*.

The 2020 INSTAR selections are books that teachers can use across grade

levels to teach science standards and to integrate science with other content areas.

Below are overviews of this year's titles.

Young readers and the adults guiding them will be enthralled by the charming watercolor illustrations and the informative text in Lita Judge's latest science book, *Homes in the wild: Where baby animals and their parents live.* The book features twenty animals – some common like squirrels and rabbits and some unusual like jerboas and dik-diks– that live in diverse habitats around the globe. Whether the homes are hidden underground, or high in treetops, or spread out in the open range, adult animals create homes for their young for the same reason humans do, to keep their babies safe, fed, and sheltered. The animals are grouped according to the types of homes they construct, and illustrated vignettes describes how the homes are built and how the animal families utilize their space. Whether it is learning that baby porcupines are called porcupettes or discovering that orangutan mothers

sometimes build bunkbeds for their young, naturalists of all ages are likely to discover new vocabulary and astonishing facts about how animals care for their families.

Additional information about each animal is included in the back matter.

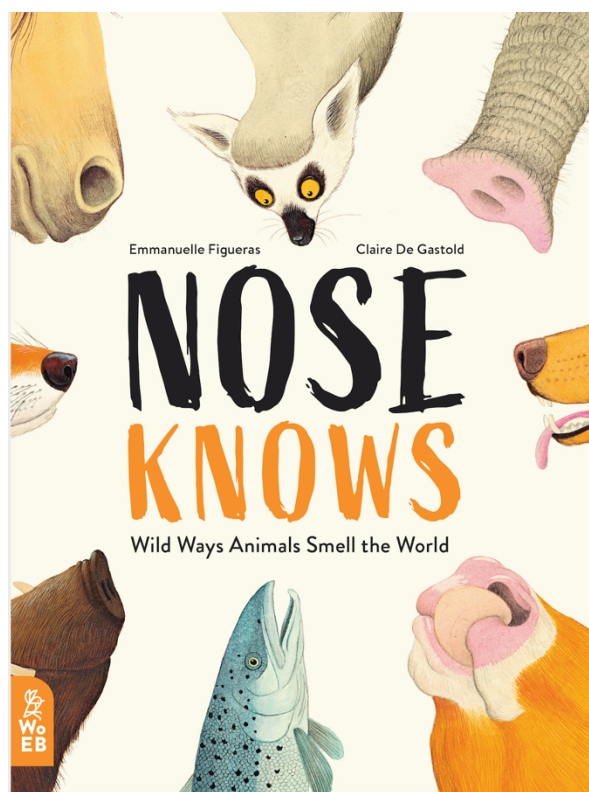
More jaw-dropping facts about animals' remarkable instincts are revealed in *Nose knows: Wild ways animals smell the world.* This international book, first published in France, will delight young scientists with its oversized format, detailed illustrations, and lift-the-flap engineering. Features such as the table of contents, index, and captions will reinforce young readers' understanding of text structures. The vocabulary is sophisticated, but the facts about the animals will make new concepts memorable. Readers are not likely to forget that great white sharks have two nostrils that operate independently from each other or that giraffes send coded scent messages to their prospective mates through their urine. Every page of the book

contains facts sure to astonish young zoologists.

For intermediate students, this year’s selections offer a wide variety of content areas and genres. Continuing her books with an animal rescue theme, Sandra Markle’s *The woolly monkey mysteries: The quest to save a rainforest species* captures the problem-solving component of science with the compelling story of how field-based scientists are trying to learn about – and save – this Peruvian monkey species. Maps and captioned photos support the text, and end notes include additional information such as a glossary and author’s note.

For a book that shows a real-world example of how curiosity can lead to a career, Jennifer Berne’s *Look up with me: Neil deGrasse Tyson: Life among the stars* offers readers an engaging glimpse into the early experiences of this famous astrophysicist. Filled with bright cartoon-style illustrations and varied font styles, the

book highlights Tyson’s personal attributes of curiosity and wonder while also incorporating astronomy content. A page spread of “mind blowing” facts, such the number of stars and attributes of black holes, will spark readers’ curiosity and may even lead them to want to learn more about the wonders of the universe.



The 2020 Indiana Science Trade Book

Annual Reading List (IN-STAR)

Kindergarten

[BLOOM BOOM!](#) 2019. April Sayre. Beach Lane Books. 40 pp. ISBN 13: 9781481494731. Rhyme and rhythm along with close-up imagery make this a wonderful springtime read as plants begin to paint our world with color. STANDARD 3: LIFE SCIENCE.

[SNACK, SNOOZE, SKEDADDLE: HOW ANIMALS GET READY FOR WINTER.](#) 2019. Laura Purdie Salas. Illus. Claudine Gévry. Millbrook Press. 32 pp. ISBN 13: 9781541529007. Rhyming couplets explain how a variety of animals use one of three survival strategies – migrate, hibernate, or tolerate – to prepare themselves for winter. Additional information about each animal and the strategies they employ is included in the back of the book along with a helpful glossary. STANDARD 3: LIFE SCIENCE.

First Grade

[HOMES IN THE WILD: WHERE BABY ANIMALS AND THEIR PARENTS LIVE.](#) 2019. Lita Judge. Roaring Brook Press. 48 pp. ISBN 13: 9781626727243. Engaging full-spread watercolor illustrations showcase twenty animals and the types of homes in which they live. End matter extends the learning with information about each animal and additional resources for curious young

scientists. STANDARD 3: LIFE SCIENCE.

[IF I WAS THE SUNSHINE.](#) 2019. Julie Fogliana. Illus. Loren Long. Atheneum. 48 pp. ISBN 13: 9781481472432. Beautiful poetry reveals the relationships among animals, nature, and the seasons. STANDARD 1: PHYSICAL SCIENCE.

Second Grade

[HOW TO CODE A SANDCASTLE.](#) 2018. Josh Funk. Illus. Sara Palacios. Viking. 44 pp. ISBN 13: 9780425291986. The analogous relationship between coding and building a sandcastle, complete with mistakes and breaking problems into smaller steps, provides a solid read for students learning computational thinking skills and content. STANDARD 5: COMPUTER SCIENCE.

[NOSE KNOWS: WILD WAYS ANIMALS SMELL THE WORLD.](#) 2019. Emmanuelle Figueras. Illus. Claire De Gastold. What On Earth Books. 38 pp. ISBN: 978-1912920075. This international book, first published in France, will delight young scientists with its oversized and lift-the-flap formatting. The extensive text explains how a variety of animals use the sense of smell to find food, find their way, or to locate their mates. STANDARD 3: LIFE SCIENCE.

Third Grade

[THE SHORTEST DAY](#). 2019. Susan Cooper. Illus. by Carson Ellis. Candlewick. 32 pp. ISBN 13: 9780763686987. Beautiful illustrations accompany this title showing how the changing light (photoperiod) in winter impacts our society across generations. STANDARD 2: EARTH AND SPACE SCIENCE

[TITANOSAUR: DISCOVERING THE WORLD'S LARGEST DINOSAUR](#). 2019. José Luis Carballido & Diego Pol. Illus. Florencia Gigena. Orchard Books. 40 pp. ISBN 13: 9781338207392. Written by the paleontologists who discovered this Titanosaur in the deserts of Argentina, this book will inspire young scientists to start digging. Illustrations help readers understand the scope of the project and the size of this creature. Tips for successful fossil hunting are included as well. STANDARD 2: EARTH AND SPACE SCIENCE.

Fourth Grade

[THE FROG BOOK](#). 2019. Steve Jenkins & Robin Page. Houghton Mifflin Harcourt. 40 pp. ISBN 13: 978-0544387607. The duo of Jenkins and Page has created another captivating science picture book, this time focused on the amazing and diverse frog.

Torn and cut paper collages accompanied by hand-lettered text give readers an inside look at frogs from around the globe – their habitats, their life cycle, and the things that threaten their existence. STANDARD 3: LIFE SCIENCE.

[THE WOOLLY MONKEY MYSTERIES: THE QUEST TO SAVE A RAIN FOREST SPECIES](#). 2019. Sandra Markle. Millbrook Press. 40 pp. ISBN 13: 978-1512458688. Woolly monkeys live in remote and inaccessible areas of the rain forest, so little was known about them until scientists adopted new strategies and technologies to observe these creatures. Their survival is essential to the survival of other plants and animals in this habitat. Back matter provides helpful tips for middle grade readers to start their own observation projects. STANDARD 3: LIFE SCIENCE.

Fifth Grade

[BEYOND WORDS: WHAT ELEPHANTS AND WHALES THINK AND FEEL](#). 2019. Carl Safina. Roaring Brook Press. 165 pp. ISBN 13: 9781250144638. Researcher and author Carl Safina takes readers from Kenya to the Pacific Northwest to have an intimate look at the behaviors and habits of elephants and killer whales. Black and

<p>white photographs add visual interest to this narrative nonfiction that makes the case that we are more like animals than different. STANDARD 3: LIFE SCIENCE.</p>
<p><u>LOOK UP WITH ME: NEIL DEGRASSE TYSON: A LIFE AMONG STARS.</u> 2019. Kathrine Tegen Books. 40 pp. ISBN 13: 978-0062844941. This picture book biography of astrophysicist Neil deGrasse Tyson would make an enticing read aloud to begin a unit on astronomy as it introduces vocabulary related to the galaxy, and equally important, it encourages middle grade students to feed their child-like curiosity. STANDARD 2: EARTH AND SPACE SCIENCE.</p>
<p style="text-align: center;">Primary Honorable Mention</p>
<p><u>BIRD COUNT.</u> 2019. Susan Edwards Richmond. Illus. by Stephanie Fizer Coleman. Peachtree. 32 pp. ISBN 13: 9781561459544. Follow Ava along on how to prepare for citizen science and birding like Cornell’s Great Backyard Bird Count in February. STANDARD 3: LIFE SCIENCE.</p>
<p><u>SNOWMAN – COLD = PUDDLE: SPRING EQUATIONS.</u> 2019. Laura Purdie Salas. Illus. Micha Archer. Charlesbridge. 32 pp. ISBN-13: 9781580897983. When poetry, math, and science combine, delightful equations</p>

<p>present a surprising new look at spring. Sidebars explain scientific content and lush collages fill the pages with the colors of spring. STANDARD 2: EARTH AND SPACE SCIENCE and STANDARD 3: LIFE SCIENCE.</p>
<p><u>WAIT, PAUSE, REST.</u> 2019. Marcie Atkins. Millbrook Press. 32 pp. ISBN 13: 9781541561922. Many plants and animals take “timeouts” during their lives. Read about the various terms used to describe dormancy in the flora and fauna world. STANDARD 3: LIFE SCIENCE.</p>
<p style="text-align: center;">Intermediate Honorable Mention</p>
<p><u>DON’T LET THEM DISAPPEAR: 12 ENDANGERED SPECIES ACROSS THE GLOBE.</u> 2019. Chelsea Clinton. Illus. Gianna Marino. Philomel Books. 40 pp. ISBN 13: 978-0525514329. Each fully illustrated doublespread highlights an endangered species, its habitat, and the threats to its existence. Some simple tips for would-be conservationists are found in the back matter. STANDARD 3: LIFE SCIENCE.</p>
<p><u>HEDY LAMARR’S DOUBLE LIFE: HOLLYWOOD LEGEND AND BRILLIANT INVENTOR.</u> 2019. Laurie Wallmark. Illus. Katy Wu. Sterling Children’s Books. 48 pp. ISBN 13: 78-1454926917. To the public, Hedy Lamarr</p>

was a glamorous movie star of the 1940's and '50's. Behind the scenes, she was a tireless inventor who is credited with the scientific breakthrough known as "frequency hopping spread spectrum" which helps prevent computer hacking and keeps our cell phone conversations private. STANDARD 5: COMPUTER SCIENCE.

**MARIO AND THE HOLE IN THE SKY:
HOW A CHEMIST SAVED OUR**

PLANET. 2019. Elizabeth Rusch. Illus. Teresa Martnez. Charlesbridge. 40 pp. ISBN 13: 9781580895811. Mario Molina grew up in Mexico and then moved to the United States. This picture shares his discover of how chlorofluorocarbons (CFSs) impact on

Earth's protective ozone layer and how that discovery led to environmental change across the world. STANDARD 2: EARTH AND SPACE SCIENCE.

Authors' Contact Information

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References

Thomas, J.A., Gulley, J., Rearden, K., Broemmel, A. (2012). Spotlight on science: Introducing the Indiana science trade book annual reading list. *The Indiana Reading Journal*, 45(1), 31-35.

Resources

<http://www.usi.edu/science/southwest-indiana-stem/instar/>