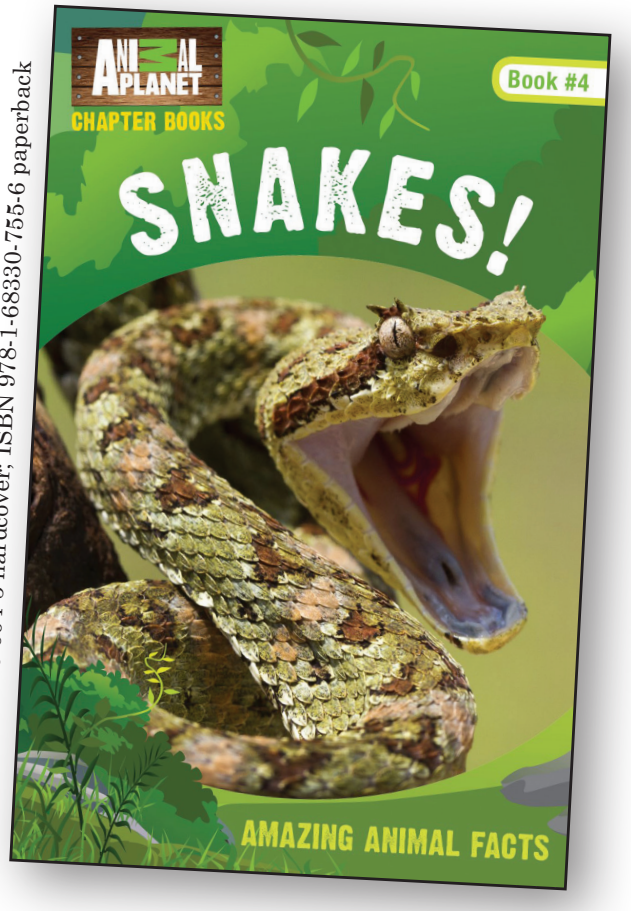
ANIMAL PLANET CHAPTER BOOKS CURRICULUM GUIDE

ISBN 978-1-68330-005-2 hardcover; ISBN 978-1-68330-756-3 paperback



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See the world from a bug's eye view and slither about with snakes in the newest books from Animal Planet's information-packed, hot topic nonfiction chapter book series for readers ages 6–10!

Bugs! features familiar and exotic insects—from grasshoppers and butterflies to assassin bugs and giraffe weevils—with mind-boggling insights into behavior, feeding, mobility, and body structure. *Snakes!* invites readers to put aside their ophidiophobia, or the fear of snakes, to meet amazing species, from the common garter snake to the deadly cobra, up close and personal!

The Animal Planet Chapter Book series features narratives packed with fascinating facts and engaging full-color photographs. "In Your Newsfeed" sidebars highlight recent news in the field and "Fact File" features go in-depth with important details of animal biology.

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The Common Core State Standards addressed by the discussion questions, activities, and worksheets in this guide are noted throughout. For more information on the Common Core, visit corestandards.org. Next Generation Science Standards are also listed where applicable. For more information on NGSS, visit nextgenscience.org.

DISCUSSION QUESTIONS

All discussion questions meet the following standards:
CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

- Though there are more than a million different species of insects in the world, what do all members of this big bug club have in common?
- Insects outnumber humans by 1 trillion to one. Luckily, insects contribute to life on our planet in several ways. Describe the positive role that insects play in our world.
- Most insects begin life as eggs. How do insect moms make sure that their eggs will be safe?
- Insects change over time through one of two different processes. Describe the difference between simple and complete metamorphosis.
- Which insect is the senior citizen of the bug club, having lived on Earth for more than 300 million years? What one part of this insect has not evolved like other insects?
- What special features of the dragonfly's body enable it to be a swift and effective hunter?
- Insects don't have teeth, but they still need to eat to survive. What are some of the different ways that insects eat?
- Mantids are masters of disguise. Give some examples of how these insects use their environment to help them hunt prey and to avoid predators.
- What unique body parts allow some insects to live in or to move across water?
- In what ways are insects' antennae helpful in gathering information?
- Mosquitoes can be quite small but are considered to be one of the most dangerous insects. Why do mosquitoes pose a threat to humans?
- Why are ants and bees considered to be "social insects?"

The discussion questions, activities, and worksheets in this guide were created by Leigh Courtney, Ph.D. She teaches in the Global Education program at a public elementary school in San Diego, California. She holds both master's and doctoral degrees in education, with an emphasis on curriculum and instruction.

ACTIVITIES FOR STUDENTS

Fact File-orama!

Create your own Fact File about an interesting insect. Select one insect described in the book and learn all you can about it. On a piece of construction paper cut to resemble a tabbed top file folder, draw a picture of your selected insect and write a paragraph about it—be sure to include fascinating facts from your research. Combine your Fact File with those made by your classmates to create a nifty collection of insect info. CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.RI.4.1; CCSS.ELA-LITERACY.W.4.2

Wing Patterns

Butterflies have distinct colors and patterns on their wings. The two sides of the wings in some butterflies are different colors to help them avoid predators. The peacock butterfly has bright colors and spots when its wings are open, but when closed, the underside of the wings are brown to help it blend into its environment. Create a butterfly on construction paper that has a symmetrical design in both color and pattern on its open wings. Cut out your butterfly so that you can color the underside of the wings in a way that would help it blend into its surroundings. Display your classroom collection of symmetrical butterflies. CCSS.MATH.CONTENT.4.G.A.3

Help Wanted

In every ant colony, there are different types of ants that do different jobs. Create a job announcement for one type of ant—a queen, worker, drone, or soldier. Include a job description and skills that are needed for the job in your Help Wanted ad.
CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

Dinner Is Served

Create a bug café to observe what different types of insects in your environment like to eat. Set paper plates outside with small amounts of fruit, leaves, dry cereal, and cheese. Let the café sit for a while until it attracts some buggy customers. Record on paper what insects were drawn to your café. What was the most popular item on your menu? Were there any foods that the insects ignored? Write a paragraph about your observations and findings.
NGSS 2-LS4-1; CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.W.4.2

Build a Bug

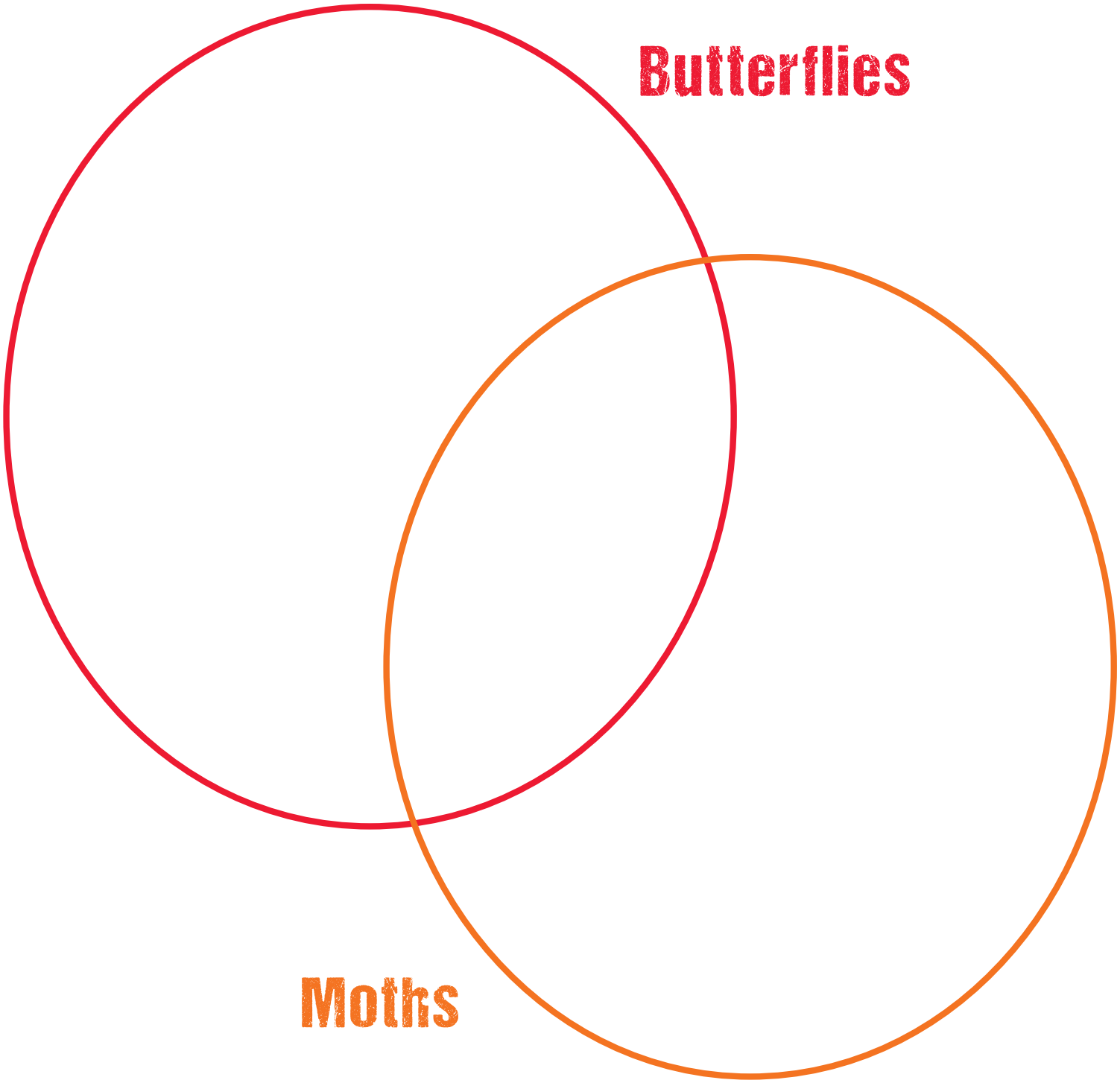
Build a model of an insect. Reread chapter 1 and study the labeled photo of an insect in the Bug Bite feature on pages 4–5. Use modeling clay to make the three main body parts and pipe cleaners to make the six legs and antennae. Remember that the legs are attached to the thorax. Add eyes to your insect. What other features might you add to your bug?
CCSS.ELA-LITERACY.RI.2.5; CCSS.ELA-LITERACY.RI.3.5; CCSS.ELA-LITERACY.RI.4.5

NAME: _____

BUTTERFLIES VERSUS MOTHS

Butterflies and moths share much in common, but they are different from one another in key ways. Look at the facts about moths and butterflies found in chapter 10. Use this information to complete a Venn diagram showing the ways in which butterflies and moths are similar to and different from one another.

CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1



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INSECT MEASUREMENTS

Insects come in all sizes. Some are as short as 6/1000 of an inch, and some are as long as 22 inches. The rhinoceros beetle is 6 inches in length. Using a ruler and the length of the rhinoceros beetle as your guide, find and measure things in your classroom that are shorter and longer than the beetle. Measure to the nearest inch and record your figures in the chart below. Calculate the difference in length between the beetle and the school items you measure. CCSS.MATH.CONTENT.2.MD.A.1

Item measured	Length in inches	Difference between the length of the item and the length of a rhinoceros beetle *(show your equation)*

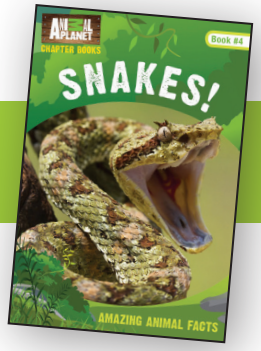
NAME: _____

CREEPY CRAWLY PARTS OF SPEECH

Hunt back through BUGS! and look for words that describe bugs (adjectives), words that name the body parts of insects (nouns), and action words that show how insects move (verbs). List the words in the chart.

CCSS.ELA-LITERACY.L.3.1.A; CCSS.ELA-LITERACY.L.4.1

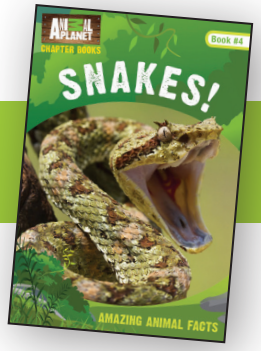
INSECTS . . .		
ARE (adjectives)	HAVE [A/AN] (nouns)	CAN (verbs)
Example: fast	*Example:* antennae	*Example:* fly



DISCUSSION QUESTIONS

All discussion questions meet the following standards:
CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

- Snakes do not have arms or legs, yet they are able to easily get around. What important part of a snake's body makes it flexible enough to move? How does this body part give a snake its shape?
- The snake's outer body is covered in scales. Why is the snake's scaly skin so important to its survival?
- Snakes are cold-blooded. What does this mean and how do snakes deal with being cold-blooded animals?
- What is ophidiophobia? What do experts say people should do when they encounter a snake?
- Though snakes are classified as predators, they have to make sure that they don't become prey to other animals. What are some of the ways snakes defend themselves against animals that might want to attack them?
- A snake's diet is connected to where it lives (its habitat). What are some examples of things found on a snake's menu?
- Rattlesnakes are built for both defending and attacking. Describe how the rattlesnake uses both ends of its body to defend against predators and to attack its prey.
- While rattlesnakes use their fangs and venom to capture prey, snakes such as boas and pythons use constriction to kill their prey. How does constriction work?
- Describe the process of sloughing and why and how snakes undergo this process several times a year.
- Explain how a snake's coloring and pattern help it to survive in its habitat.
- Scientists used to group snakes into families by the way they look. The scientific name of the largest family of snakes is colubrid, but it's often referred to as the "junk drawer" of snakes. Why? What kinds of snakes are members of this group and what do many of them have in common?



ACTIVITIES FOR STUDENTS

Snake Neighbors

Research the types of snakes that live in your area. How are they adapted to the place where you live in terms of their prey, coloring, and living habits? Write an informative paragraph describing one of your local snakes.
CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.W.4.2

And the Award Goes to . . .

Study the unusual snakes described in Chapter 10: "Weird Snakes of the World." Make a list of awards for the types of snakes in this chapter and select specific snakes as winners of each prize. For example, the award for "sparkliest snake" could be given to the sunbeam snake. CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

Beware!

Design a wanted poster for one of the world's deadliest snakes. Include a description and drawing of the snake, why it is considered dangerous, and where this snake might be found.
CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

Compare and Contrast

Create a poster comparing the life cycles of two snakes—one that lays eggs and another that gives birth to live babies. Create one labeled circle for each snake and draw pictures of the various parts of the snake's life cycle within it. Write a paragraph describing how the two snakes' life cycles are similar and how they are different.
CCSS.ELA-LITERACY.RI.2.3; CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.RI.3.3; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.RI.4.3; CCSS.ELA-LITERACY.W.4.2

Which Is Longest?

Hunt through *Snakes!* to find information about the length of the following snakes: black mamba, reticulated python, Barbados thread snake, coachwhip, and anaconda. Create a bar graph to organize your data. Give your graph a title and label one axis with the names of the snakes and the other axis with their lengths in feet. Write three math statements describing the data on your graph.
CCSS.MATH.CONTENT.2.MD.D.10;
CCSS.MATH.CONTENT.3.MD.B.3;
CCSS.MATH.CONTENT.4.MD.B.4

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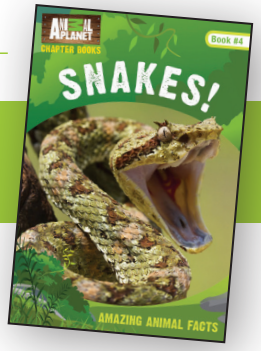
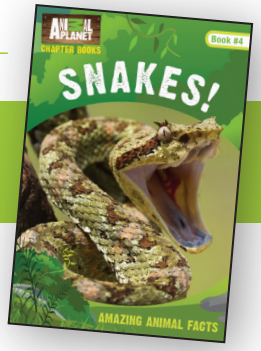


COMPARING SENSES

Both humans and snakes experience the world through their senses, but not in exactly the same ways. Reread chapter 8: "Snake Senses." Fill in the chart with information describing how humans see, hear, and smell and how these same senses work for snakes. CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

SENSE	HUMANS	MOST SNAKES
SIGHT		
HEARING		
SMELL		

NAME: _____

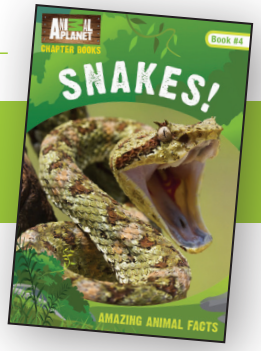


GET A MOVE ON

Snakes have a variety of ways to get from point A to point B. Read through chapter 2: "Moving Around," and describe the different movements listed below. Draw a graphic with lines and arrows to show how a snake accomplishes each type of movement. CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1; CCSS.ELA-LITERACY.RI.4.1

How a snake moves	Description	Graphic
Serpentine		
Rectilinear		
Concertina		
Sidewinding		
Swimming		
Gliding		

NAME: _____



SAVE THE SNAKES!

Even though many people fear snakes and some can be dangerous if people get too close, snakes are an important part of every ecosystem. Because of what they eat, snakes help keep nature in balance. Corn snakes eat mice and kingsnakes eat rattlesnakes. How might humans be affected if corn snake and kingsnake populations decreased? Write a persuasive paragraph about the importance of snakes.

CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.W.4.2

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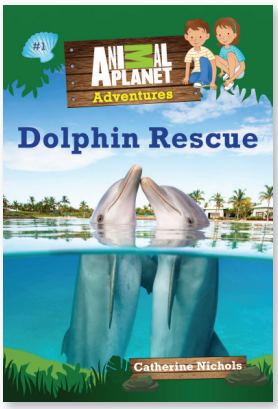

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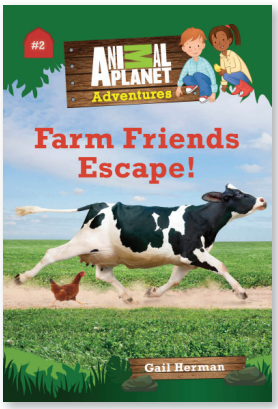

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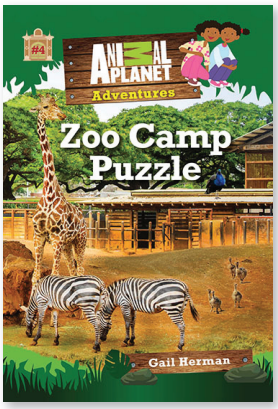

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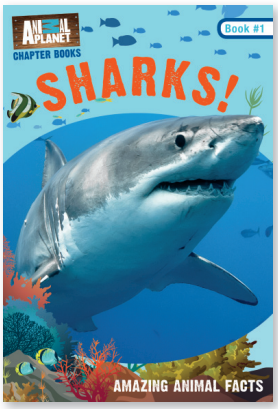

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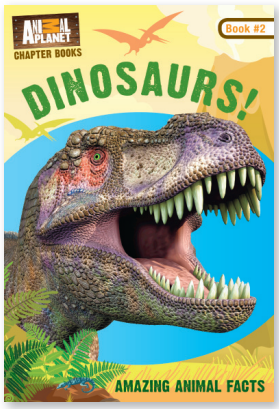

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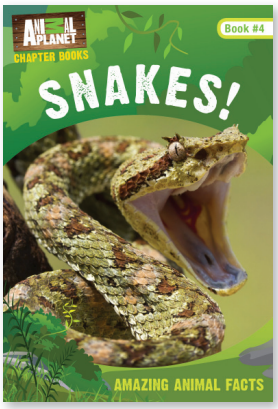

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