

Learning A–Z

level **T**

Multi-level

N Q T

Grade

3

Word Count

1,160

Lexile

870L

Nonfiction • Informational

Refer to the Focus Question on page 2 of this title to guide discussion and support additional learning connected to the text.

Snakes are among the animal kingdom’s most amazing predators. Their ability to adapt to the natural world has enabled them to survive on every continent except Antarctica. **Slithery Snakes** provides students with a comprehensive look at these fascinating creatures that play an important role in Earth’s natural environment. The book can also be used to teach students how to determine main idea and details and to effectively ask and answer questions. The book is also available for levels N and Q.

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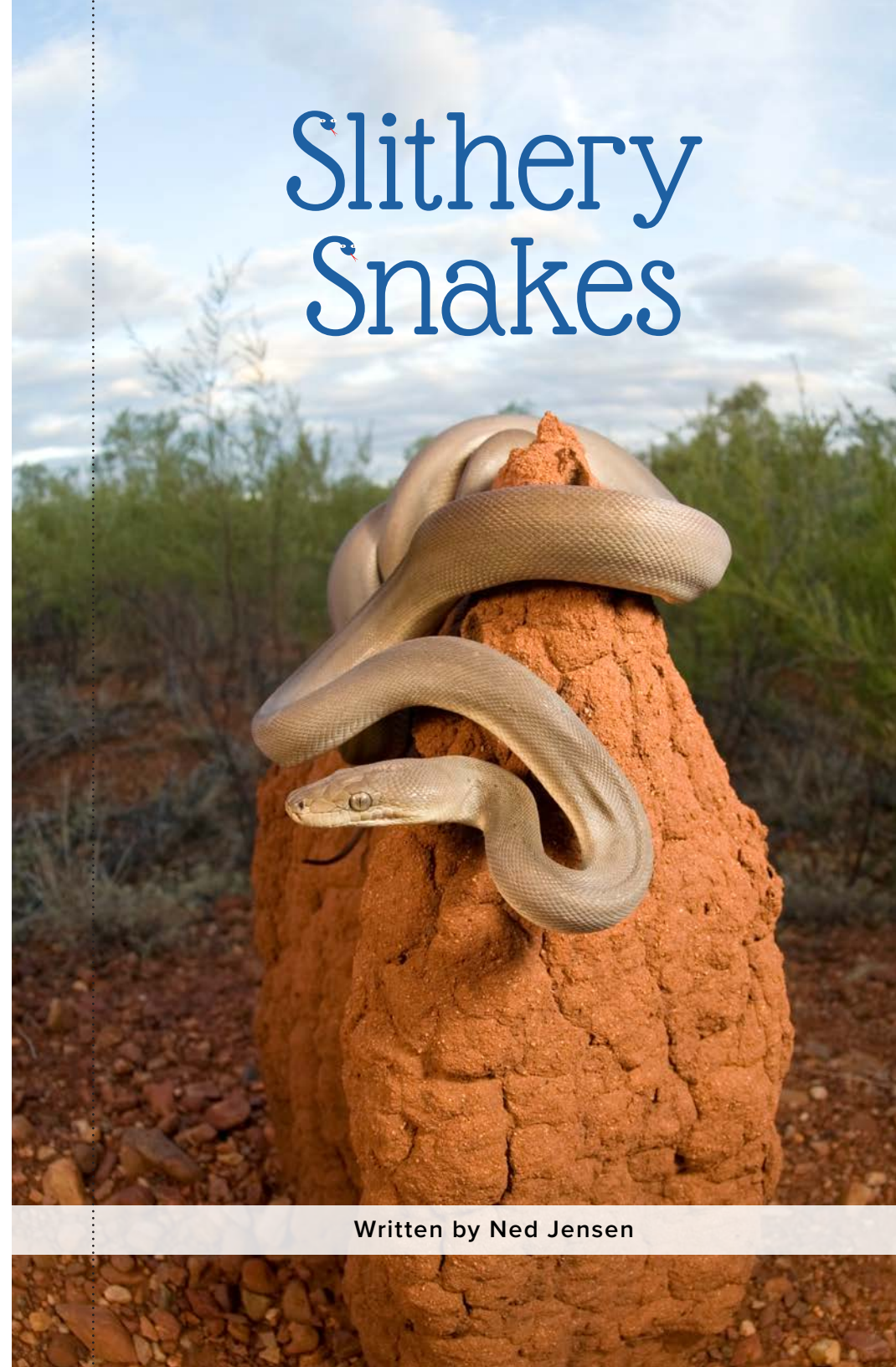
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Slithery Snakes



Written by Ned Jensen

Slithery Snakes



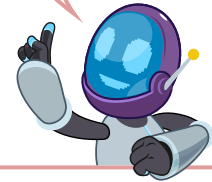
Above: juvenile green tree pythons

Cover: olive python

Written by Ned Jensen

Focus Question

What are snakes?



Words to Know

camouflage	reptiles
fangs	species
limber	vertebrae
paralyzes	vibrations
parasites	

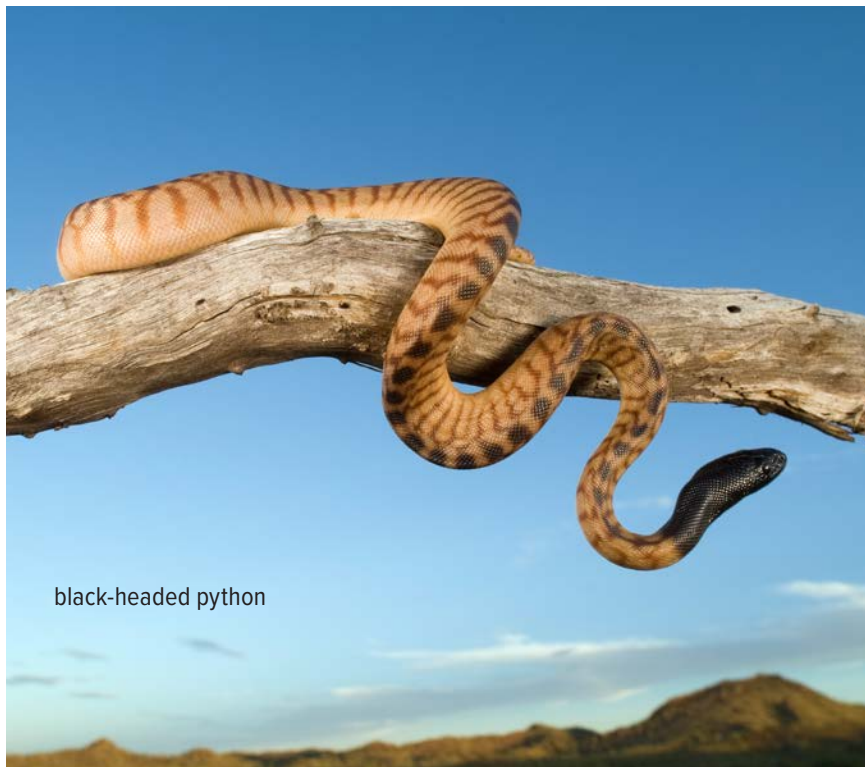
Connections

Writing and Art

Write an acrostic poem describing snakes. Use the word snakes as the acrostic. Each letter in the word begins a line of the poem. Illustrate your poem and share it with your class.

Science

Research to learn more about one of the snakes from the book. Draw a diagram of its body parts and write at least one paragraph about it.



black-headed python



banded sea krait



horned viper

There are thousands of kinds of snakes in the world, but only a few hundred are dangerous.

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Introduction

Snakes are unusual animals. They are **reptiles**, a class of creatures that also includes lizards and turtles. Long and limbless, snakes come in many lengths, patterns, and colors. To date, scientists have identified several thousand **species** of snakes. They live in oceans, in trees, and on land, and they have adapted to survive in many unusual ways.

Where Snakes Live



Snakes are found on every continent except Antarctica. Some places, however, are snake-free zones. For instance, no snakes live in the wild on certain islands, such as Ireland, New Zealand, and Iceland. Depending on the species, snakes in the wild may live up to twenty-five years.



Biggest and Smallest

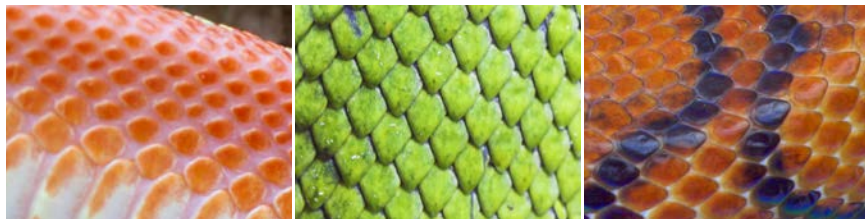
One of the largest snakes is the green anaconda. A full-grown green anaconda can be close to 10 meters (33 ft.) long and weigh more than 230 kilograms (507 lb.). By contrast, one of the smallest snakes is the thread snake. It is only about 10 centimeters (4 in.) long.

Snake Traits

Like all reptiles, snakes are cold-blooded, meaning their body temperature changes as the temperature around them changes. If a snake needs to warm up, it basks in the sun. If the snake needs to cool down, it rests in the shade. Snakes become much less active in winter. Some snakes that live through cold winters do not hibernate; instead, they find a place underground or beneath a rock pile or log to stay warm. Another way snakes remain warm in winter is by gathering in a group and looping around each other to share body heat.



The red-sided garter snakes of Canada hibernate in bunches during the winter. They come out from their dens to mate in the spring.



Snake scales are made up of the same protein as human fingernails.

A snake's skeleton is made up of a long backbone, ribs, a skull, and a jawbone. Its hard, bony skull protects its brain. Snakes can have from about 150 to more than 400 **vertebrae**. Their many vertebrae allow them to move in a multitude of ways. A very **limber** snake usually has more vertebrae.

Like all reptiles, a snake has scales on its body. In addition to providing protection, scales are nearly waterproof, helping keep the snake dry. Scales grow from the snake's skin. Some scales are colorful. Other snakes have scales for **camouflage**, which helps them blend in with their surroundings.

Since snakes have no arms or legs, they use their muscles and scales to move. The scales on their belly tightly grip the surface beneath them. Their muscles help them move from side to side, or slither, along the ground. Some even use their muscles and scales to climb trees.



It can take up to fourteen days for some snakes to shed.

Snake scales look like a single sheet of skin. Snakes don't actually shed skin. Instead, they shed the outer layers of their scales. Snakes usually shed up to four times per year. This is called *molting*. During molting, a snake rubs against a hard object such as a rock or log. Rubbing helps its skin stretch and split. Then the snake crawls out and leaves it behind.

Snakes shed for several reasons. Young snakes shed more often than mature snakes because they are still growing. Unlike the skin of other animals, a snake's skin does not stretch as the snake grows. Another reason snakes shed is to get rid of **parasites** that may have attached to their old skin.

Scales protect a snake's eyes, as well as its body. Unlike many animals, snakes do not have eyelids, and their eyes do not move. Instead, each eye is covered with a clear scale that protects the eye from drying out. Because of this, snakes can't blink.

Another difference between snakes and other animals is their ears. Snakes do not have ears on the outside of their skull. Instead, they listen through their jawbone. Sound **vibrations** pass through the jawbone to the inner ear, which sends a signal to the snake's brain.



Snakes' eyes adapt to light depending on whether they hunt during the day or at night.



A forked tongue tells a snake where a smell is coming from.

Another important feature of a snake is its tongue. A snake uses its forked tongue to smell. When its tongue is out, scent particles stick to it. The snake pulls its tongue back and touches the roof of its mouth where a special organ identifies the scent particles.

Certain snakes, such as pythons and boas, are able to sense the heat of warm-blooded animals nearby. Pits near a snake's eyes can sense even the slightest change in the temperature around them. Other snakes, known as pit vipers, use two sensitive pits to send a heat image to their brain. The snake can "see" its prey through the heat given off by the prey's body. This adaptation helps them judge distances while hunting in the dark.

Hunting and Eating

Snakes are carnivores, or meat eaters. They eat other animals in several ways. Some snakes inject venom, which is a type of toxin, when they bite prey. Other snakes, called *constrictors*, squeeze prey to death. Some snakes sneak up on their prey, grab it with their powerful jaws, and swallow it alive.

Most snakes' upper and lower jaws are loosely connected. This allows a snake to spread its jaws and open its mouth wide enough to swallow large objects. Snakes' teeth are mainly designed for catching and holding prey. Their **fangs** and regular teeth are curved backward, which pushes the food toward their throat. They are even able to push their breathing tube out of their mouth so they can breathe as they swallow their prey whole.

Once prey has been swallowed, a snake uses its powerful muscles to move it into the stomach and intestines. Strong acids produced by the walls of the stomach dissolve the prey into a liquid-like mass for easy digestion.



Baby snakes hatch by biting through their shell.

How Snakes Are Born

Most snakes that live in cold areas mate in late spring or early summer. Snakes that live in warmer areas may mate at any time of year. Once they mate, the male snake usually leaves.

About two-thirds of all female snakes lay eggs in a safe place and then leave. Snake eggs have soft, leathery shells. Baby snakes grow inside the eggs, and most develop sharp teeth to cut through the egg to hatch. Once a baby snake hatches, it must survive on its own. It is not easy to survive because birds, some mammals, and other snakes eat baby snakes.

Some types of female snakes, such as rattlesnakes, hold their eggs inside their body until they hatch. Others, such as common garter snakes, also give birth to live young.

Venomous Snakes

Some, but not all, snakes produce venom. Venom is injected through fangs, which are located on a snake's jaws.

Venom is produced in sacs behind a snake's eyes. Some fangs are hollow so the venom can flow through them from these sacs.



Eastern diamondback rattlesnake

Venom flows from a snake's venom sacs through its fangs.



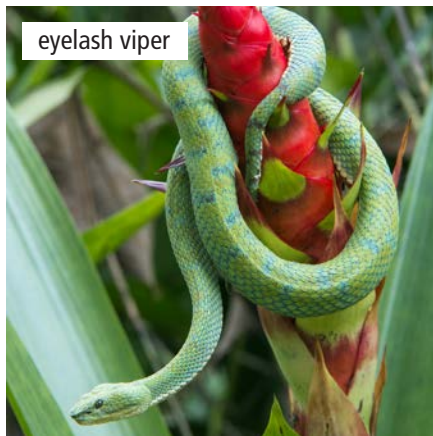
dice snake

Snakes do not chew prey. Instead, they swallow it whole.

Snakes use venom for both defense and attack. They usually inject more venom when they bite in defense. Snakes' venom **paralyzes** their prey. Some inject the prey with venom and let it go. Then they use their sense of smell and heat sensors to track the prey until it dies. Other snakes use their teeth or body to hold on to the prey until it dies. Then they eat it. Fewer than half of venomous snakes have venom that is strong enough to kill humans.

Venom versus Poison

Venom and poison are not the same thing. Poison is absorbed, eaten, or breathed in, while venom is injected into the victim through a bite or sting. Other animals, such as scorpions and certain insects, inject venom by stinging.



eyelash viper



spitting cobra



green tree python



black-collared snake

Conclusion

Snakes are among the animal kingdom's fiercest predators. Snakes have survived in most environments because their senses have adapted to the natural world in specific ways. Whether they are long or short, large or tiny, venomous strikers or constrictors, snakes are fascinating animals that play an important role in Earth's natural environment.

Glossary

camouflage (*n.*) page 7

the colors, patterns, or shapes of an animal's body that allow it to blend into the background or hide

fangs (*n.*) page 11

long, sharp, and sometimes hollow teeth

limber (*adj.*) page 7

able to move, twist, or bend easily; flexible

paralyzes (*v.*) page 14

causes one or more parts of a body to become unable to move

parasites (*n.*) page 8

plants or animals that grow on or feed off others

reptiles (*n.*) page 4

cold-blooded animals that have backbones and are covered with scales or horny plates

species (*n.*) page 4

a group of living things that are physically similar and can reproduce

vertebrae (*n.*) page 7

plural of vertebra; the bones that make up the spine, or backbone

vibrations (*n.*) page 9

trembling movements