

CHILDREN'S NATURE ENCYCLOPEDIA

# SNAKES AND LIZARDS





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# Introduction

**R**eptiles are cold-blooded animals with scaly skins. They include snakes, lizards, turtles and crocodiles. Most reptiles lay eggs, either soft and leathery or hard-shelled, but some give birth to live young. A few reptiles guard their eggs until they hatch. Apart from the crocodilians, most reptiles abandon their young after hatching or birth. Land-living reptiles must bask in the sun to warm up before going in search of food.

Because they are cold-blooded animals, reptiles need to bask in the sun to raise their body temperature before they are able to move about in search of food. However, they do not need to eat as much food as the warm-blooded birds and mammals, so are able to survive more easily in harsh desert environments.



◀ Reptiles are descended from the early amphibians. The first reptiles were probably small, lizard-like creatures that inhabited the Carboniferous swamps about 320 million years ago. Unlike the amphibians, they did not have to stay close to water to keep moist and lay their eggs. They were able to live more easily on land. The lizards, turtles and tortoises and the crocodilians (crocodiles and alligators) appeared during the Triassic Period, about 250 million years ago. Snakes evolved later, about 135 million years ago. Some modern-day reptiles have hardly changed since the time of the dinosaurs.



▲ Green vine snake, Central and South America, up to 2 m (6.6 ft) long. Because of their many bones, strong muscles and flexible joints, snakes are able to slither, burrow or swim at speed, despite having no limbs. Some snakes, such as the python, can even climb trees. The snake grips the tree trunk or branch with its neck or tail then pulls the rest of its body up or down.

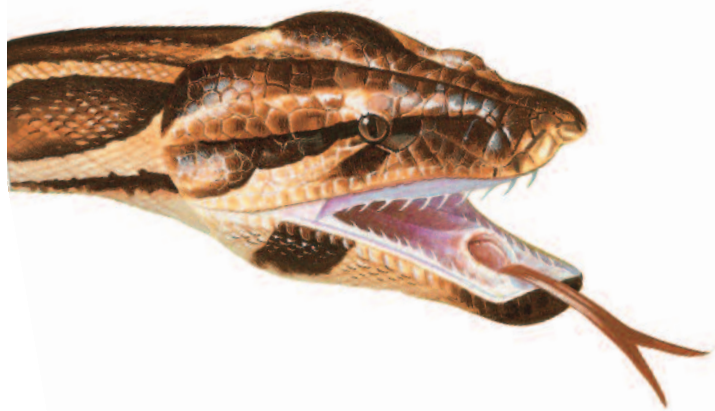
► Some snakes have good vision, but most rely on special senses to hunt their prey. Like lizards, snakes are able to collect “tastes” from the air or ground by flicking out their forked tongues. Some kinds of snakes also have heat sensors on their heads that help them to locate the whereabouts of live prey accurately, even at night. Many snakes are also sensitive to faint vibrations in the ground, and so can tell if another animal is approaching.

# Snakes

**S**nakes are a group of reptiles that have long, narrow, scale-covered bodies and tails and no limbs. Some legless lizards resemble snakes, but snakes are distinguished from them by their lack of external ears or eyelids. Snakes have many more bones in their spines than other animals. They move by flexing their belly muscles, which are attached to their many ribs. As they move, most snakes curve their bodies into a series of S-shapes, giving them greater speed. Snakes moult throughout their lives, ridding themselves of old, worn skin and replacing it with a bright new layer of skin from time to time.

## Diet

All snakes are carnivores. Some kinds eat small animals, such as snails or worms, but most feed on larger prey, such as frogs, birds and mammals. Snakes have special loosely hinged jaws that can open extremely wide. Their skin can also stretch to take large prey. They swallow their prey whole, using their sharp teeth to pull it into the throat and their muscles to squeeze it into the stomach. A snake may only need to hunt and feed every few weeks or even months.



▲ A mating ball of male garter snakes. In southern Canada, warmer weather in spring signals the start of the breeding season for red-sided garter snakes. They spent winter in rock crevices, sheltering from frosts, but start to emerge in spring. As each female comes out, she is quickly surrounded by males, all competing to mate with her. “Mating balls” of males around one female may contain up to 100 individuals.

# Reproduction

Many snakes lay eggs, burying them in warm, damp places, such as rotting vegetation. A few kinds will guard their eggs from predators by coiling around them until they hatch. There are some snakes, such as sea snakes and boas, that give birth to live young. In all cases, young snakes are left to fend for themselves at birth.

## Sea snakes



Sea snakes live in warm, tropical waters, hunting fish and eels. They breathe air at the surface and have flattened tails to help them swim. There are around 60 species of sea snake, all of which are venomous. Many species have stripy skin, to help them camouflage with the dappled light and shade of the sea.



▲ An eastern coral snake, southeastern US and northern Mexico, 80 cm (30 inches) long. Coral snakes are highly venomous, but very few bites are recorded as the snake is shy, spending most of its time buried in the leaf litter on the forest floor.



▲ Emerald tree boa, South America, up to 1.8 m (6 ft) long. It has probably the largest teeth any non-venomous snake.

▶ A boa constricting its victim, a rodent

▼ The boa swallows its dead prey whole, head first.



# Boas

**T**he boa constrictor and the anaconda are both types of boa. Boas are large, constricting snakes from Central and South America that give birth to live young. They seize their prey by the neck and coil around it to suffocate the animal to death. Boa constrictors grow up to 4 metres (13 feet) long. At nearly nine metres (30 feet) long, the anaconda is one of the world's longest and heaviest snakes.



The boa constrictor has an excellent sense of smell and sharp eyesight. Catching an animal's scent in the air, the snake moves silently and with lightning speed. It will first strike at the prey with its teeth. Boas do not have long fangs. Instead, their short, sharp, backward-pointing teeth help them to grasp their prey—which cannot escape.

The boa then proceeds to coil around its victim and suffocate it to death, a method called constriction. It then swallows the animal head first. It will not need to eat again for several days after feeding. Boas often lie in wait for their victims to come close. But they will also go in hunt of their prey, usually at night.

### FACTFILE

Boas have two lungs, a large right lung that functions normally, and a smaller left that does not. This is so the lungs can fit into their elongated body shape.



# Anaconda

At more than nine metres (30 feet) long, the anaconda of South America is one of the world's largest snakes, and, at 100 kilograms (215 pounds) certainly one of the heaviest. It spends much of its life wallowing in the shallow water of rainforest rivers and streams, or sometimes basking on overhanging branches. Its eyes and nasal openings are on the top of its head, allowing it to be nearly completely submerged while it waits for some unwary animal to come within range. Then it will seize its victim by the neck, coil its own body around it and suffocate it to death. The anaconda always swallows its victims whole, and then lies still for up to several weeks afterwards while it digests its meal.

Anacondas eat a wide variety of prey, including fish, birds, mammals and other reptiles. Large anacondas will often overpower tapirs (forest-dwelling mammals related to rhinos), deer, capybaras and caimans.



▲ Anaconda, South America, up to 9 m (30ft) long

### FACTFILE

As well as being the heaviest, the anaconda is the largest by diameter of all snakes.

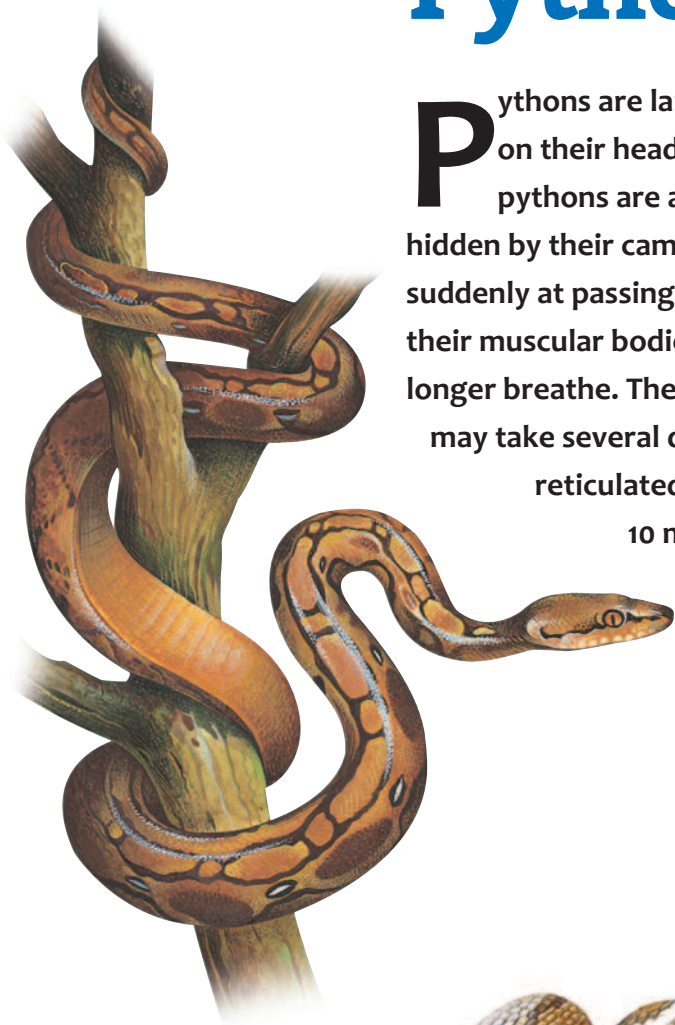


▲ An anaconda watches from the bank as a turtle comes within range of an ambush attack.



# Pythons

**P**ythons are large snakes with heat-sensitive organs on their heads that help them to find prey. Most pythons are ambush predators: they lie in wait, hidden by their camouflage colouring, before striking suddenly at passing prey. To kill their prey, pythons coil their muscular bodies around the animal until it can no longer breathe. The prey is then swallowed whole; it may take several days or even weeks to digest. The reticulated python, which grows up to 10 metres (33 feet) long, is the longest snake in the world.



◀ Royal python, Africa, up to 120 cm (3.9 ft)



▲ Indian python, South Asia, up to 3 m (10 ft) long, constricting its prey



## Tree climbers

Because of their many bones, strong muscles and flexible joints, pythons are able to climb trees, despite having no limbs. They grip the tree trunk or branch with their neck or tail then pull the rest of their body up or down.



▲ Green tree python, New Guinea and Australia, 1.8 m (6 ft) long

## Nest guarding



◀ Green tree python hatchlings emerge from their soft-shelled eggs. At first, they are bright orange or yellow, but their colour gradually changes as they grow. By the time they are six months old, they will be the same bright green as their mother.

### FACTFILE

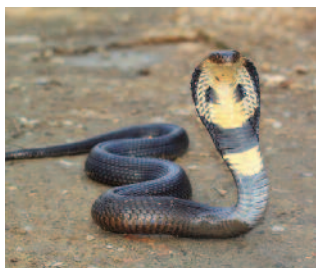
Prey cannot escape from a python's mouth because of its backwards-pointing teeth. The python can swallow large prey whole because it can dislocate its jawbones.

Unlike boas, female pythons lay eggs, which they typically guard until they hatch. Some species lay up to 100 eggs. Curled tightly around them, a mother will attack any animals that threaten her eggs' safety. As soon as the young hatch, the mother will abandon them and go in search of food for herself. Young snakes are independent from the moment they hatch.



### FACTFILE

The name cobra is short for cobra de capelo, which is Portuguese for "snake with hood".



▲ Monocled cobra, South and Southeast Asia, up to 1.5 m (5 ft)

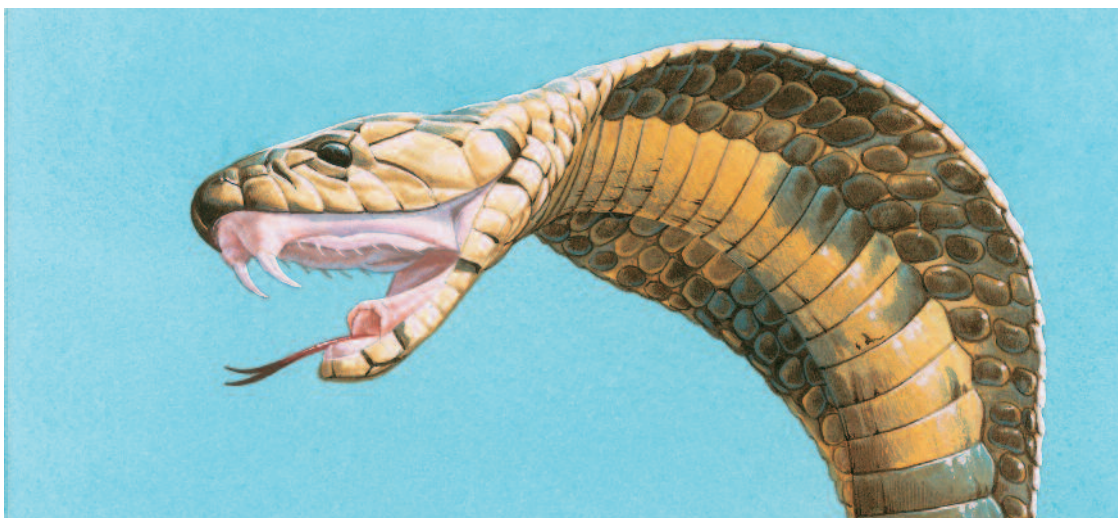
▼ A cobra about to strike

# Cobras

**C**obras are venomous snakes with a hood of skin behind their heads which they use in a threat display. They live in both Asia and southern Africa. Cobras have two fangs at the front of their mouths, used to inject a venom that paralyzes, then kills, their prey. Cobras eat mainly other snakes, lizards, small mammals and frogs. They rarely attack humans, but will do so if disturbed. Their main predators are other snakes and mongooses.

## Attack

Cobras have two long, sharp fangs that can deliver a deadly venom to their prey. When they are startled or threatened, cobras rear up and spread out the hoods of skin behind their heads to frighten their attackers. They may also make a low growl-like hiss. Cobras can strike with lightning speed. Their venom first paralyzes, then kills, their prey.



### FACTFILE

The hiss of the king cobra is at a much lower pitch than that of many other snakes. It could be described as a "growl" rather than a hiss.

# King cobra

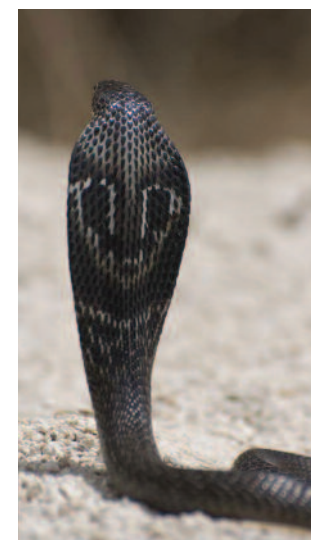
The king cobra, from South and Southeast Asia, preys mainly on other snakes. Over 5 metres (16 feet) long, it is the world's largest venomous snake. It is also one of the most feared. An adult human can die from a single bite in less than 15 minutes. Its main predator is the mongoose, which has resistance to its venom. If unable to flee from a mongoose, the king cobra spreads its hood, emits hisses and makes pretend strikes. This threat display is usually successful.



◀ King cobra, Southeast Asia, up to 5.5 m (18 ft long). It is not closely related to the other, "true", cobras.

# Indian cobra

The Indian cobra, or spectacled cobra, lives in the Indian subcontinent, and is found in plains, rainforests and farmland. It preys on rats, which commonly live among humans, so the cobra is also often found in densely inhabited areas as well. The most distinctive feature of the Indian cobra is its hood. It spreads it when threatened by widening some of the ribs in its neck. The spectacle pattern on its hood, along with its overall colour, varies from one individual snake to the next. It averages about 1.9 metres (6 feet) in length, sometimes reaching 2.4 metres (nearly 8 feet).



▲ On the rear of the Indian cobra's hood is a pattern that looks a little like a pair of spectacles. In the Hindu religion, the pattern is said to be the footprints of Krishna.

**FACTFILE**

There are more than 200 species of viper, living all over the world except Antarctica, Australia, New Zealand, Ireland and Madagascar.

# Vipers

**V**ipers are venomous snakes with long, hollow fangs that fold back inside their mouths until they strike. Pit vipers are named after the deep pit, called a fossa, in the area between the eye and nostril on either side of the head. These are the external openings to heat-sensitive organs they use to locate their warm-blooded prey, and which give them a "picture" of it. The pit viper group includes rattlesnakes, moccasins and lanceheads. True, or old world vipers, such as the highly venomous puff adders, do not have these pits.



▲ Puff adder, Africa and Arabian peninsula, 1 m (39 inches) long.

## Bite

During a strike, the viper's mouth can open nearly 180°. The fangs are unfolded as late as possible to prevent damage. As the viper's jaws close around its victim and the fangs penetrate its flesh, powerful muscles rapidly inject the venom. Vipers use their venomous bite to paralyze their prey. It can also be used for self-defence, though in some cases they do not inject any venom.



▶ Rattlesnake coiled for attack. Its venom can be seen dripping from its fangs.



# Adder



▲ Common adder, Europe and Asia, up to 90 cm (35 inches).

The common adder, a true viper, is found across Europe and Asia. It is the only venomous snake in Great Britain. It bites only when alarmed or threatened and its venom is rarely fatal. It feeds chiefly on small mammals, birds, lizards and amphibians. Most adders have a zigzag pattern down the entire length of their bodies. The head usually has a dark "V" or "X" on the top. The common adder is adapted to cold climates (it is sometimes found north of the Arctic Circle) and hibernates in winter.

**FACTFILE**

Most female vipers give birth to live young. The word viper comes from the Latin for "live" (*vivo*) and "I give birth" (*pario*).



### FACTFILE

During a strike, the viper's mouth can open nearly 180°—its gape is almost flat. A viper's left and right fangs can be unfolded together or independently.

## Rattlesnakes

The rattlesnakes are a family of pit vipers that are native to the Americas. The "rattle" at the end of a rattlesnake's tail is made of loose rings of hard skin. The snake is preyed upon by hawks, weasels, kingsnakes and a number of other predators, and shakes its rattle in an attempt to scare them away. Young rattlers are particularly vulnerable to predators.



► Rattle of a western diamondback rattlesnake

## How a rattler hunts

The rattlesnake preys on mice, rats, small birds and other small animals. It lies in wait for its prey, or goes after it in its burrow. The snake may use its rattle to distract its victim, before paralyzing it quickly with a venomous bite. It then swallows it head first, forcing the limbs to fold inwards at the joints as it goes down.

The snake's powerful digestive juices allow it to digest bone as well as flesh. After a large meal, it will coil up in a safe place and digest its meal over several hours, days or even weeks.



▲ Western diamondback rattlesnake, US and Mexico, up to 1.2 m (4 ft) long.



### FACTFILE

A viper's left and right fangs can be unfolded together or independently.

## Sidewinder

The sidewinder is a kind of rattlesnake, named after the way it moves across the ground. Its winding method of moving means that it only has one small patch of its body in contact with the hot sand at any one time. Just as importantly, it can move rapidly over sand, a surface that offers little grip.



◀ Sidewinder, southwestern United States, up to 80 cm (about 30 inches) long. Sidewinders avoid the scorching daytime temperatures by hiding in burrows or under rocks.

## Copperheads

The copperhead family of snakes are types of pit viper found in south and southeastern United States. It is an ambush hunter: it lies in wait for prey, usually rodents, frogs or insects to pass nearby, before striking at them with its fangs. A juvenile copperhead uses its yellow tail tip to lure small animals, such as frogs, to come within range. While the prey is distracted by the snake's tail, the snake delivers its lethal bite.

▼ Copperhead, North America, up to 1 m (about 40 inches) long.







▲ Collared lizard, North America, up to 30 cm (12 inches) long

# Lizards

**L**izards are a large group of reptiles that includes iguanas, chameleons, geckos, skinks and monitors. They have thick, scaly skins. Most have four legs and a tail, although a few kinds are legless. Their eyesight is usually highly acute. Lizards have long tongues that they flick in and out to “taste” the air or ground and to pick up information about their surroundings. Most lizards communicate with one another by the way they move their bodies, change colour or display their throat flaps, called dewlaps. Lizards are mostly land-dwellers—the marine iguana is an exception—living all over the world except in polar regions. Some are burrowing animals, while many live in trees. Most are good swimmers.

## FACTFILE

There are 5796 known species of lizard.

▼ Lizard eating a moth



## Diet

Many lizards are carnivorous, feeding on insects, birds, small mammals and other reptiles. The iguanas are herbivorous. The largest lizard, the Komodo dragon, a member of the monitor family, may measure up to 3 metres (10 feet) in length. It is a powerful predator, and can kill large mammals, such as cattle. It has even been known to attack and kill humans.

# Breeding



Most lizards are egg-layers, although a few give birth to live young. Lizards lay their eggs in warm, damp holes. Most mother lizards abandon their eggs after laying them, but a few species guard the eggs until they hatch.

## Defence

The smaller lizards have many predators. They defend themselves with camouflage, running away, climbing trees or even playing dead. The frilled lizard unfurls a bright orange ruff to make itself look as big as possible. Several species are able to break off their own tails, to confuse an attacker while they run away. The tail has a special “weak point” that can be snapped without harming the lizard. A new tail will grow in its place. This feature is called autotomy.



◀ Skink with eggs. Skinks are a family of 1200 species, more than any other type of lizard apart from the geckos. Most have no necks, short legs or no legs at all.

## FACTFILE

The common basilisk, of Central and South America, is nicknamed the “Jesus Christ Lizard” because of its ability to run across wide stretches of water when threatened.

▼ At the first sign of danger, a frilled lizard runs to a high spot, opening its mouth wide and unfurling its bright orange ruff to make itself look as big as possible.





▲ Striped basilisk lizard

## Basilisk lizard

Basilisk lizards, whose name means "little king", live in the Central and South American rainforest. Plumed basilisks grow to 1 metre (3.3 feet) long. They are best known for their ability to run across water for significant distances, for which they are sometimes known as the "Jesus Christ lizards", after the story in the Bible in which Christ walks on water. Helped by the flaps on their toes, they can run for about 4.5 metres (15 feet) before swimming.

## Geckos

Geckos are small, thick-bodied lizards. There are about 1500 species worldwide. They have minute hairs on their toes, which enable them to grip on to smooth surfaces and even walk upside down. Geckos are the only lizards that can call to one another. They also use their tongues to clean their transparent eyelids.



▶ Common gecko, Southeast Asia, up to 15 cm (6 inches) long

### FACTFILE

The dwarf gecko, just 1.6–1.8 cm (0.6–0.7 inches) long, including its tail, is the smallest reptile in the world.

The gecko is hunted by many animals, including birds of prey, snakes, monkeys and small cats. Having a greenish-brown colour and mottled pattern on its body helps to disguise or camouflage it among branches and leaves. Its strong toes and sharp claws grip the bark well so it can leap away at speed. Like other lizards, it can also break off its own tail if necessary.



## Gila monster

The gila monster, from North America, is one of the few venomous lizards. Living in scrubland or desert, this large animal is slow-moving and feeds mainly on eggs, but sometimes also small mammals. It has a stout tail where it stores fat for use when food is hard to find. It spends nearly all of its time underground in burrows or rocky shelters, and is active only in the morning or on warm nights.



▲ Gila monster, North America, up to 60 cm (2 ft) long

## Legless lizard



### FACTFILE

The gila monster eats on only five to ten occasions a year, but when it does, it can eat up to a third of its body weight.

◀ A slow worm. It is not a snake, but a species of legless lizard.

A number of lizards have very short limbs, or no limbs at all. Legless species include slow worms and glass lizards. The eyelids and ear openings of legless lizards distinguish them from snakes. Most kinds spend much of their lives burrowing through the soil, and some are nearly or completely blind.



### FACTFILE

Four tiny species of chameleon were discovered in Madagascar in 2012. Adult males of the tiniest, *Brookesia micra*, measure just 16 mm (0.5 inches) from nose to bottom, and 25 mm (1 inch) including tail.

► Panther chameleon, Madagascar, 45 cm (17 in) long

# Chameleons

**C**hameleons are slow-moving lizards that can change colour to blend in with their background. They have grasping feet and flexible, prehensile tails to help them grip branches as they climb through the treetops. Their eyes can move in different directions and focus on different objects at the same time: they have a 360° field of vision.



Most chameleons eat insects, but some larger species may also feed on other lizards or young birds. Having spotted its prey, a chameleon flicks out its extremely long, sticky tongue—several times the length of its own body—to seize it.



# Hunting



▲ Flap-necked chameleon, Africa, 35 cm (14 in) long

Chameleons sit motionless on a branch until an insect approaches. By changing colour to match the foliage around them, they can remain hidden from sight. When a chameleon spots its prey in the leaves, it creeps up on it very slowly, fixing it with its swivelling eyes. Then, when the moment is right, it flicks out its long, sticky tongue, fastens on to its insect victim and reels it back into its mouth—an action that takes only a fraction of a second.

### FACTFILE

The arrangement of toes, two facing forwards and two backwards (known as zygodactylous), is found only in chameleons, parrots, woodpeckers, cuckoos and some owls.



### FACTFILE

The cry of a hawk is enough to make a green iguana freeze in fear, which it does to avoid movement giving its position away.

# Iguanas

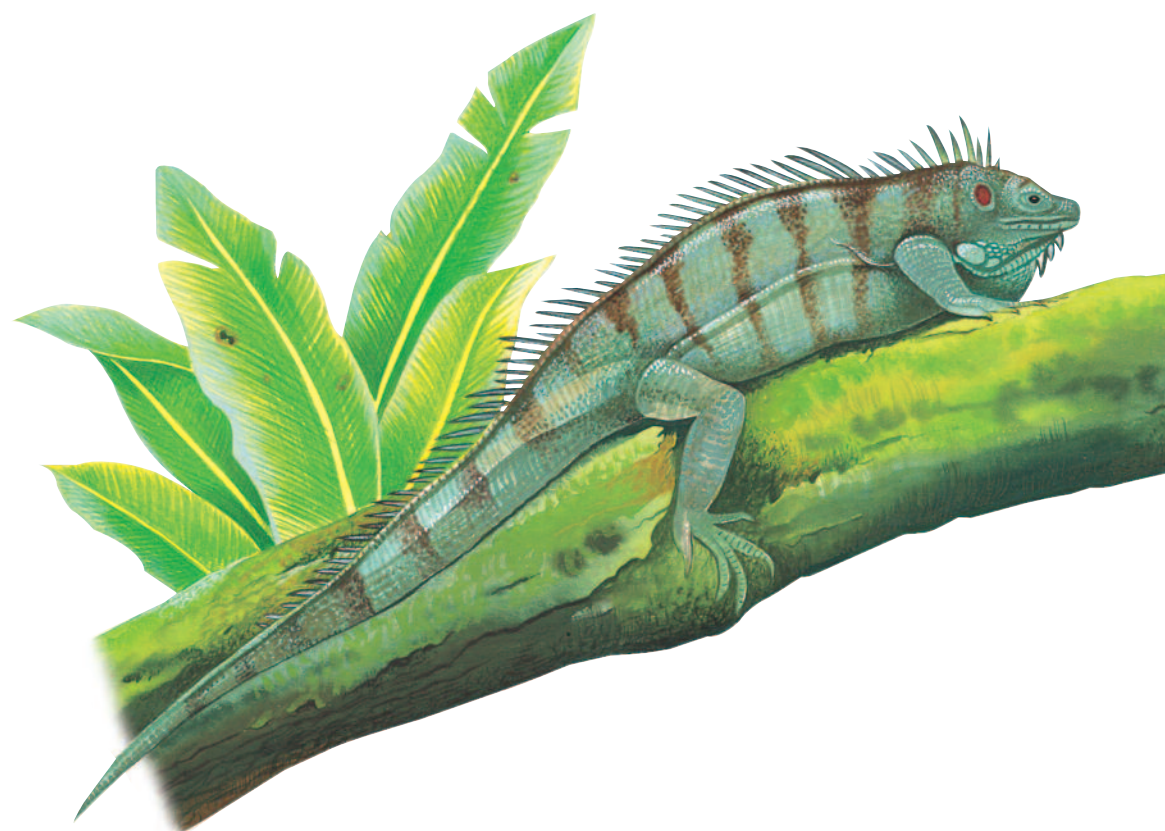
Iguanas are plant-eating lizards from subtropical and tropical regions of the Americas and Pacific islands. The green iguana lives in rainforest trees while the marine iguana is the only sea-dwelling species of lizard. Other iguanas include anoles, basilisks, chuckwallas and horned lizards. Some species have prehensile tails, which they can wrap around branches as they climb. Iguanas have large dewlaps, flaps of skin beneath their jaws. These help control their body temperature, and is also displayed by males in courtship.



▲ A chuckwalla, an iguana found in desert regions of southwestern USA and northern Mexico



# Green iguana



▲ Green iguana, South America, up to 2 m (6.6 ft) long

The green iguana, from the South American rainforest, is a 2-metre (6.6-foot) tree-dwelling lizard. It has a crest of comb-like spikes running down its back. Equipped with excellent vision, it is able to spot both predators and sources of food from long distance. The green iguana often lounges in branches overhanging rivers. If danger threatens, it will simply drop out of the trees into the water below to escape.

### FACTFILE

Green iguanas' teeth are leaf-shaped, with serrated (saw-like) edges. Their similarity to those found in fossils of a dinosaur discovered in the 1820s led to that dinosaur to being named Iguanodon, meaning "iguana-tooth".



# Marine iguana

Marine iguanas, the only sea-living lizards, feed on seaweed and algae in the waters of the Galapagos Islands. Their flat snouts and sharp teeth enable them to scrape off algae growing on rocks. Any excess salt taken while eating is snorted out through their nostrils. This often leaves white patches of salt on their faces. Marine iguanas dive over 15 metres (50 feet) deep in search of their food, using their flattened tails to propel them through the water. After their dives, they lie in the sun to warm up again.



▲ Marine iguana, Galapagos Islands, up to 1.7 m (5.6 ft) long

In the mating season, the bodies of male marine iguanas change from their usual black or grey colour to shades of orange, red or green. They herd together groups of females, called harems, to mate with and guard from the attentions of other male iguanas.

### FACTFILE

During an El Niño cycle (a reversal of ocean currents that happens every few years on the west coast of South America), the marine iguana's food source is severely reduced. Some animals actually decrease in size by 20% at this time, growing back to full size when normal conditions return.

▶ Marine iguana



# Anoles



▲ Green anole, Southern USA and the Caribbean islands, up to 20 cm (8 in) long

The green anole, another kind of iguana, has long toe pads to help it grip tree trunks. The male's red dewlap is used in displays to attract females. Like chameleons, anoles can change colour according to their moods or surroundings. They feed on spiders and insects. To defend their territories from another anoles, they raise their spines, fan their dewlaps, do "push-ups" and emit hisses in an effort to scare off the intruders.

### FACTFILE

An iguana has a third "eye" on the top of its head. Called a parietal eye, this small, paler area of skin can detect light.



### FACTFILE

Komodo dragon saliva is laden with deadly bacteria, meaning that should any creature be bitten but somehow escape from being eaten, it will still die of bacterial infection within hours. A dragon may follow its prey for several kilometres while the bacteria takes effect, using its keen sense of smell to track it down.

# Komodo dragon

**T**he Komodo dragon, a member of the monitor family, is the largest lizard in the world. It lives only on Komodo and a few other islands in Indonesia. It mostly feeds on carrion, but will also ambush live prey. A solitary hunter, this giant, 3-metre (10-foot) reptile has long, jagged teeth which it uses to grab its prey of wild pigs, deer and goats and shake them to death. The dragon can open its jaws wide enough to swallow some smaller prey whole.



▲ Komodo dragon, Indonesian islands, up to 3 m (10 ft) long



## Fighting males

May is the start of the Komodo dragon's mating season. Males compete with each other over females and often fight to display their strength and dominance. Fighting males grasp each other and stand on their hind legs, struggling to push their rivals over. Fights sometimes result in severe injury or even death.

▼ Males fighting for dominance



## Mating

Komodo dragons are usually solitary animals, but males and females sometimes encounter one another when they are feeding. A courting male will follow a female for days, rubbing his chin against her and licking her back until she lets him mate with her.

### FACTFILE

The Komodo dragon is the largest living species of lizard.



▲ Komodo dragons mating

**FACTFILE**

Komodos have been known to attack and kill humans—although they usually avoid them.

## Eggs

Five weeks after mating (or perhaps longer, if the mother senses the weather is too hot for the eggs), female Komodo dragons look for a place to lay their eggs. They either dig burrows deep into the side of a sandy slope, or take over burrows abandoned by other animals. Crawling inside, a female will lay between 12 and 30 soft-shelled eggs. The eggs are laid one or two metres from the surface so that they do not get too hot in the sun. Conditions must be perfect for the eggs to hatch.

The mother guards her nest for a month or two. This is mainly to prevent another nesting mother from digging up the eggs. She leaves long before the eggs hatch.



▲ Female Komodo dragon defending her nest



## Young dragons



▲ Komodo dragon hatchling

Komodo hatchlings are just 40 centimetres (16 inches) long. They quickly scurry up trees to avoid predators, including adults of their own species. The hatchlings feed on insects and small lizards until they are big enough to leave the treetops and feed on larger prey.

**FACTFILE**

The Komodo dragon uses its long, yellow, forked tongue both to taste and to smell.

**FACTFILE**

Like turtles and tortoises, the tuatara is very long-lived. It becomes an adult at 20 years old, continues to grow until about 35 and may live for over 120 years. It probably has the slowest growth rate of any reptile.

# Tuatara

**T**he tuatara is a reptile from New Zealand. It has no external ears, one of the characteristics of lizards, which it otherwise closely resembles. It is not related to lizards, but is the only member of an order of reptiles that lived on Earth in the early years of the dinosaurs, for which it is described as a "living fossil". It has a crest of skin down its back that can be raised as a threat. This feature gives it its name which, in the Maori language, means "peaks on the back".

## Third eye

The tuatara has a third "eye" on the top of its head, called the parietal eye. It is present in other reptiles, but is more pronounced in the tuatara than any other other vertebrate (animal with a backbone). The eye even has its own lens, cornea and retina, and the remnants of a nerve connection to the brain. It is, however, only visible in hatchlings. After a few months, it is covered by scales.



▲ Tuatara, New Zealand, up to 60 cm (2 ft) long

**FACTFILE**

Tuatara have a number of unique features in their skeletons, some of them similar to fish. Their brains and the way they move about are more amphibian-like.

## Lifestyle

The tuatara lives in burrows on about 30 small islands off the coast of New Zealand. Although tuataras can dig their own burrows, they often take over those made by petrel seabirds. They bask in the sun during the day and feed at night, hunting insects, worms and small lizards. They also eat the eggs and chicks of petrels. Some will even eat their own young. Like lizards, tuataras can shed their tails when in danger and later regrow them. Males sometimes lose their tails in fights with other males during the breeding season.

▼ Tuatara





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Created and produced by Nicholas Harris, Sarah Hartley and  
Katie Sexton, Orpheus Books Ltd.

Text Nicholas Harris

Consultant Chris Jarvis, Oxford University Museum of Natural History

Illustrated by Ian Jackson

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