

Bamboo pit viper



The heat pit in a python has one section. In a pit viper, it has two sections. The inner one is the temperature of the snake and the outer one heats up when the snake is near a heat source.

Sixth sense

SNAKES such as pythons, *pit vipers*, and some BOAS are able to PICK UP small *changes* in air temperature around them by using *organs* on their **faces**, called **heat pits**. They



detect these changes as *infrared rays* (heat vision).

This *sixth* SENSE allows them to **locate prey** during the **night**.



Royal python

This royal python (*Python regius*) sees a thermal image in its brain that allows it to track prey quickly and efficiently.



The FIVE senses

HEARING

Snakes do not have external ears. Their hearing is poor so they rely on vibrations from the ground that pass through skull bones on their lower jaws to their ears. This puff adder (*Bitis arietans*) is sticking close to the ground to sense any vibrations.



SIGHT

Snakes generally don't have great vision, although they are adept at detecting movement. The vine snake (*Ahaetulla nasuta*) is unusual in that it has forward-facing eyes that give it binocular vision and a good sense of distance.



TASTE

The Jacobson's organ enables snakes to taste and smell. The organ consists of two sensitive cavities in the roof of the snake's mouth. Their tongue gathers particles that the organ analyzes. Snakes that live in water, such as the green anaconda (*Eunectes murinus*) are able to use their tongue to gather particles underwater.



SMELL

Snakes use their sense of smell to help them locate prey. The common boa constrictor (*Boa constrictor*) detects its prey through scent and taste. Using its Jacobson's organ it is able to work out if prey is nearby. Boas wrap their coils around their victims and squeeze hard to kill them.



TOUCH

From the beginning of a snake's life, it relies on touch for guidance. It uses its tongue and pressure receptors in its skin to touch objects, move, and orientate itself. The Indian python (*Python molurus*) is using its tongue to explore its surroundings.



Gecko FEET

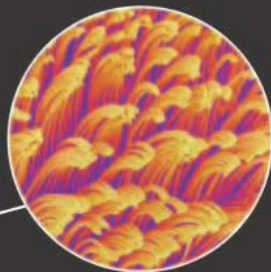
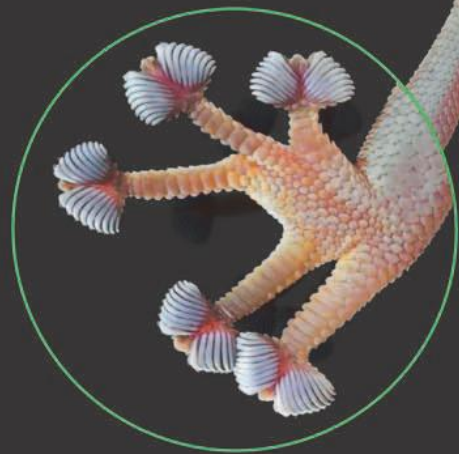
Nothing GOES like a *gecko's toes*. They even inspire *science*.

GECKOS are *small lizards* but they've set humans a **BIG challenge**: to mimic their *amazing ability* to walk up **WALLS**. Their *secret*? **BILLIONS** of tiny hairs (called *setae*), and long toes to help a lizard grasp the *bumps*.

There's more to a gecko's feet than hair. Their toes bend backward (compared to ours), and they must "peel" them off a surface a bit at a time. It's like Velcro—it won't slip!

The toe-pads on fan-fingered geckos are split into two parts. This gives them extra grip, even compared with other geckos.

Fan-fingered gecko



There are 14,000 hairs in 1 mm² of a gecko's foot. Each hair has between 100 and 1,000 filaments that grip onto the wall as it climbs.

When **SCIENCE** copies *nature*, it's called **biomimetics**.

STICKYBOT
is a **robot** that can
climb *SMOOTH*
SURFACES such
as **glass**. HOW?



Stickybot's
feet have rows of
stiff, yet flexible "gecko
tape" on them. This material
produces a sticky force that
allows the robot to climb
up windows and
whiteboards.

Stickybot

STICKYBOT uses **12 motors** to mimic *one animal*.



The newt that

This captive-bred axolotl looks like an albino—with no pigment in its skin—but since it has pigment in its eyes it's called “leucistic,” which means reduced pigment.

“Wild-type” axolotls are usually dark.



Wild axolotls are only found in the canal systems of Mexico's Lake Xochimilco. Located close to Mexico City, these canals are threatened by pollution and increased development.

Axolotl means “water-dog” in

never grows UP

The axolotl is the Peter Pan of the animal world. It doesn't undergo metamorphosis like many other amphibians. Instead, it spends its entire life in a juvenile form, keeping its gills and fins, and living in water. The axolotl grows steadily bigger until it is old enough to reproduce.



Though their numbers are falling in the wild, many axolotls are kept in captivity. Axolotls are popular pets, but they are also studied by scientists because of their interesting life cycles and their powers of regeneration—axolotls can regrow entire limbs. In captivity it is sometimes possible to make the axolotls metamorphose by injecting them with special hormones that trigger growth and development. In their adult form, they look very like their near-relatives, the tiger salamanders.

the ancient language of the Aztecs.

What's for dinner?

The Gila monster stores fat in its thick, stumpy tail. It is this energy store that allows it to survive for months without food.

Lizards for starters

Most lizards are insect-eaters (insectivores), but some have special diets. Some big lizards are carnivores and eat animals such as birds, rodents, or other lizards. A few lizards are plant-eaters (herbivores).

The binge-eater

The Gila monster (*Heloderma suspectum*) only eats between 5–10 times a year, but when it does, this lizard can consume the equivalent of over half of its body weight. It mainly eats the eggs of birds or other reptiles.

The insectivore

The Sinai agama (*Pseudotrapelus sinaitus*) is a slender lizard. It has long, thin limbs, which make it good at running over the hot sand when it hunts in the heat of the day. It feeds on ants and other insects, but it also eats sand!

The vegetarian

One plant-eating lizard is the **green iguana** (*Iguana iguana*), which survives on a complex diet of leaves, shoots, flowers, and fruit. It can't digest animal protein well, although it may sometimes accidentally eat small insects and other invertebrates that are attached to vegetation.

Frog food that moves

Most frogs are carnivorous. Nearly all of them eat insects and other invertebrates like worms, spiders, and centipedes, but some of the bigger frogs take on larger prey, such as mice, birds, or other frogs.

The cannibal

The American bullfrog (*Rana catesbeiana*) is the largest of the North American frogs, growing up to 8 in (20 cm) in length. These frogs are voracious eaters and will eat anything they can fit into their exceedingly large mouths. This includes insects and other invertebrates, rodents, birds, snakes, and even other bullfrogs.

Sea turtles

The diet of sea turtles varies between species. Some eat a wide range of foods, both plant and animal, but others have special diets, with adaptations that make it easier to eat particular things.

The jelly-eater

Leatherback turtles (*Dermochelys coriacea*) are the biggest turtles in the world. They live on a diet of jellyfish and comb jellies, both of which are made up mostly of water. To get enough energy and nutrients to grow so big, leatherbacks eat huge quantities of food—they sometimes eat their own weight in jellyfish each day.

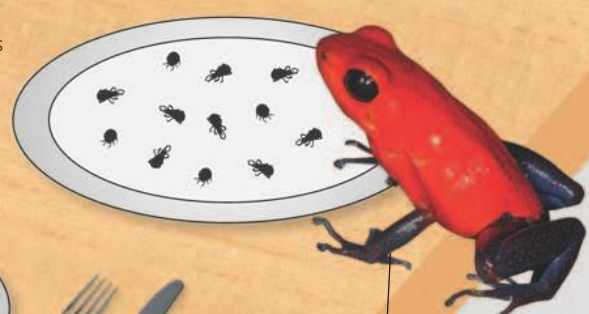
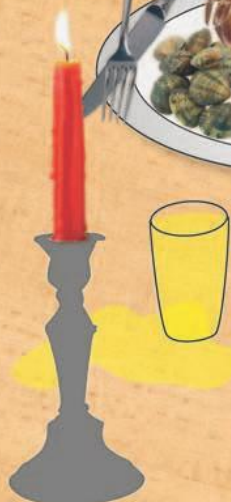
The cruncher

Loggerhead turtles (*Caretta caretta*) mainly eat hard-shelled creatures such as crabs, conchs, and clams. Their big heads and strong jaws help them to crush the shells and they can hold their breath for up to 20 minutes on their dives down to the sea floor.



The fruitivore

Izecksohn's Brazilian tree frog (*Xenohyla truncata*) is one of the very few plant-eating (herbivorous) frogs. Living in bromeliads in the Brazilian coastal moist forest, it eats brightly colored berries from arum plants and fruit from the cocoa tree. The frog helps to disperse plant seeds in its poop.

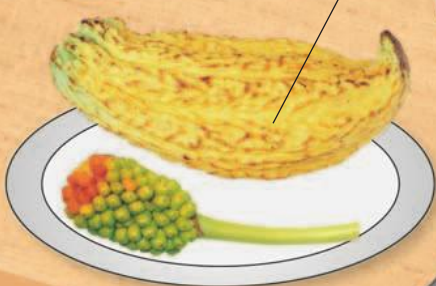


The sponge muncher

Hawksbill turtles (*Eretmochelys imbricata*) live around coral reefs, rich in marine life. They can eat a range of prey, but they mainly live on a diet of primitive, plantlike animals called sponges. The turtles are named after their sharp, birdlike beaks that make it easier for them to reach sponges growing in crevices between rocks and corals.

The mite-y eater

Poison dart frogs use poisons in their skin to deter potential predators. They get their poisons from their food. The strawberry poison-dart frog (*Oophaga pumilio*) gets its toxins from a mite that lives in the soil in Central and South America. The frog also eats other small invertebrates. As the frog eats its food, the toxic chemicals build up in its body, which makes it more poisonous.



LIVING FOSSILS

The giant salamanders of China and Japan are the world's largest amphibians. While most salamanders would fit in the palm of your hand, giant salamanders grow bigger than your arm—and some longer than the length of your entire body. NO ONE KNOWS how long giant salamanders live in the wild, but the oldest captive salamander lived for 52 years.

GIANT salamanders have changed *very little* in the last **30 million**

The Chinese giant salamander (*Andrias davidianus*) is the world's largest amphibian, growing up to 6 ft (1.8 m) in length in captivity. It is heavily built, with a flat head and a wide mouth. Like its Japanese cousin, it lives a completely aquatic existence and its short legs cannot support its body weight when it is out of the water.

Chinese giant salamander

Giant salamanders are paler on their undersides.





Skeleton of a Chinese giant salamander

Giant salamanders live in hollows in the banks of streams and rivers. At night, they walk slowly along the bottom, feeding on fish and crustaceans. They have a powerful bite and they catch their food with a quick sideways snap of their wide, many-toothed mouths.



Stressed-out salamanders can produce a thick, smelly mucous that makes them very unpleasant to handle.

What a stink!

years, which is why *they* are described as “*living fossils.*”

The Japanese giant salamander (*Andrias japonicus*) is the second-largest amphibian, growing up to 5 ft (1.5 m) in length. The Japanese and Chinese salamanders breathe through their skin. Their skin has folds and wrinkles that increase the surface area, allowing more oxygen in. They like to live in clean, fast-flowing streams but numbers of both species have dropped owing to pollution and dam building.



Japanese giant salamander

Snakes & Ladders

Are you feeling LUCKY? Challenge a friend to a game of **snakes and ladders** and see who gets to the top first. BE CAREFUL not to step on a **snake**—the ones in this game all have *deadly bites!*

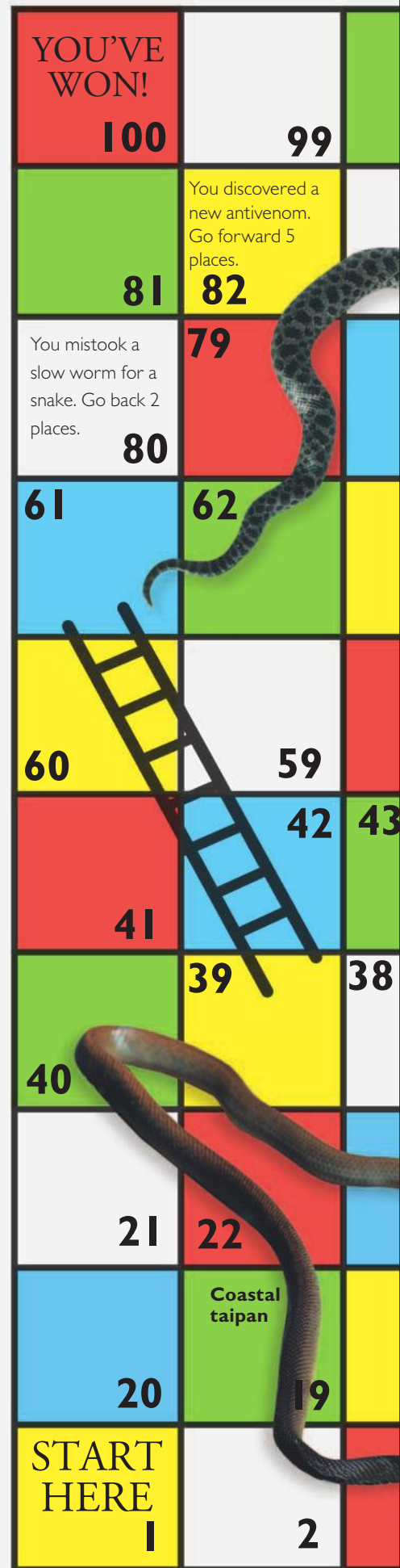
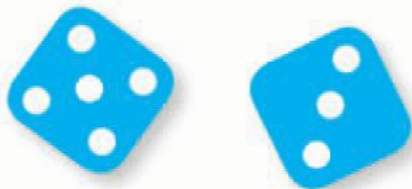
You will **need**:

- * One or more friends to play with
- * A small object to use as a counter for each person
- * A die

How to **play**:

To decide who starts, everyone rolls the die and the person with the highest number goes first. When it's your turn, roll the die and move your counter along by the number. If you land on the bottom of a ladder, climb to the top of the ladder. If you land on the top of a snake, slither down to the square at its bottom. If you roll a six, take another turn. The first person to pass 100 wins.

Good luck!



98	Hog nose viper	97	96	95	94	93	A spitting cobra spat in your eye. Go back two places.	92	91
83		84	Black tiger snake	85	86	87	Death adder	88	89
78	77	76		75				72	71
63		64	65	66	67	68		69	70
58		57	56		55	54	Beaked sea snake	53	52
	Death adder	44	45	46	47			48	49
		37	36		35	34		32	31
23		24		25	26	27	28		29
								Inland taipan	
18	17	16	15	14	13	12		11	
3	4	5	You got squeezed by a boa constrictor. Go back 3 places.	6	7	8	9	10	

Horned lizard

Built like miniature armored tanks, horned lizards move ponderously along the baking ground of their dry desert habitats; stopping to sunbathe, dig burrows, and snack on ants. They have evolved a range of adaptations to help them survive.





5½ in (14 cm)



Found in northern Mexico and southwestern US

Bloody **DEFENSE**

Horned lizards use the spines on their backs in self-defense. In addition, they also exhibit a startling form of defense. A network of weakened blood vessels allow them to spray a stream of blood out from their eyes toward attackers. This blood tastes horrible to potential predators.



Dew **DRINK**

Living in dry, desert conditions, horned lizards have evolved to get as much water from their environment as possible. The tiny grooves between the lizard's scales channel moisture from dew that has gathered on its body toward the lizard's mouth, providing a refreshing morning drink.



Body **BEAUTIFUL**

Another adaptation to its desert environment, is the horned lizard's wide, flat body. This allows it to catch rainwater during infrequent desert showers. The lizard raises its tail and channels droplets down to its mouth. Its bumpy, mottled appearance helps it blend into its surroundings and avoid detection by predators flying above.



Sticky **TONGUES**

This ant contain lots of chitin, which is indigestible to a horned lizard. That means the lizard must eat an awful lot of ants to get enough nutrients to survive. Thankfully, the lizard has a secret weapon—a long sticky tongue, which it flicks out like a whip to gather lots of ants.

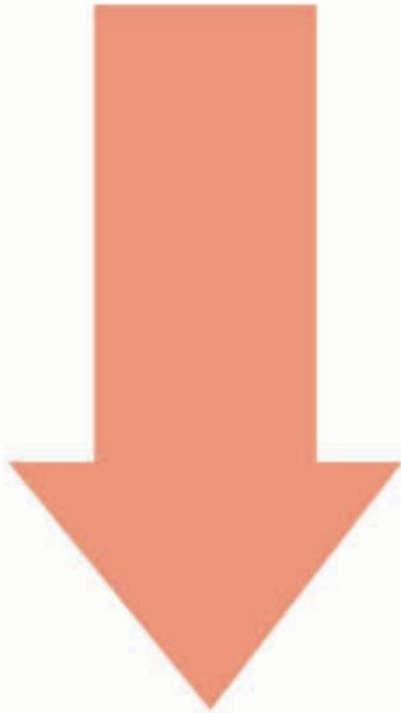


Horny **HEADS**

The lizards are named for their distinctive horns. These shapes break up the outline of the lizards' heads—making them harder to spot in among the rocks and stones of the desert. Their raised brow bumps help to shield their eyes from the strong desert sun, while thick eyelids protect their eyes from stings of their ant prey.



Why did this woman turn people **INTO** **STONE** ?



In Greek mythology, Medusa was a fearsome, snake-headed monster. Once a beautiful woman, she was transformed by the goddess Athena as punishment for meeting the sea god Poseidon in Athena's temple. In some tales, not only was her hair turned into a twisting mass of hissing snakes, but her teeth also became tusks and her skin was made green and scaly. Anyone who looked at her hideous form turned to stone. Medusa was eventually slain by Perseus, the mortal son of Zeus, king of the gods. He did not look at Medusa directly, but watched her reflection in his metal shield before beheading her.

Even after she was slain, the head of Medusa still had the power to turn anyone who looked at it into stone. Perseus returned it to the goddess Athena, who attached it to her shield and used it to scare her enemies.

THE MEDUSA MYTH
WHEN SHE ANGERED THE GODS, MEDUSA WAS TURNED INTO A SNAKE-HEADED MONSTER.



*Perseus
holding the
head of
Medusa.*

In search of the flapping **FROG**

The LAKE TITICACA FROG is the largest aquatic frog in the world. The lake it lives in is *12,500* feet (3,800 m) above sea level, making it a very *COLD* environment to reside in.



The frog doesn't usually need to surface for air, since it absorbs oxygen through its skin. It has a lot of skin with plenty of flaps and a big surface area, enabling it to breathe underwater.

The Lake Titicaca frog can measure up to 20 in (50 cm) long and weigh up to 2¼ lb (1 kg).



It does push-ups in order to circulate the water surrounding its body. This keeps its skin folds in contact with oxygenated water.

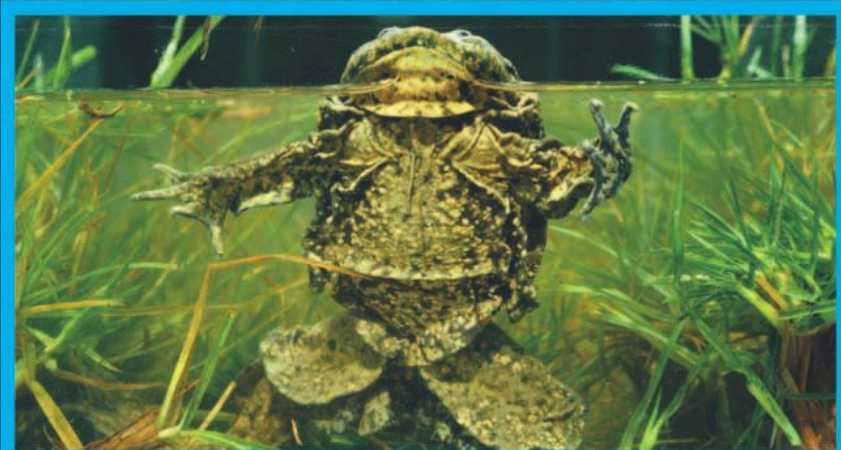


Lake Titicaca is located on the border of Bolivia and Peru.





Why does
this frog
exercise?



waters, where it lays about **500** eggs.

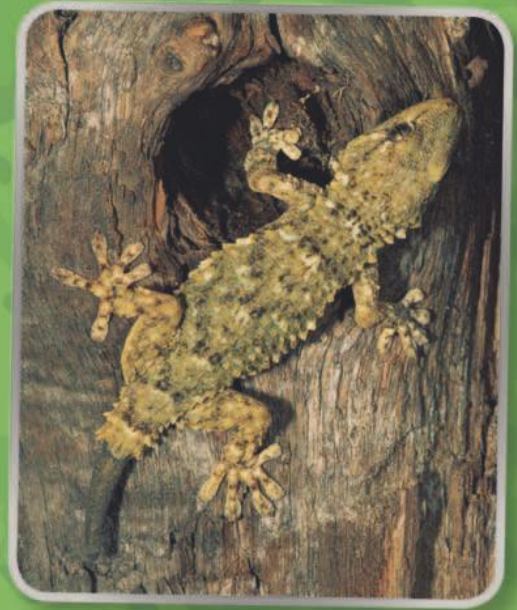
DEFENSE TECHNIQUES

Fearsome **FRILLS**



The frilled lizard (*Chlamydosaurus kingii*) has a loose ruff of skin around its neck. Most of the time it sits flat, like a cape around the lizard's shoulders, but when the lizard is threatened, the ruff expands and the lizard lunges forward, attempting to startle its attacker for just long enough to make its escape.

Tail **TRICKERY**



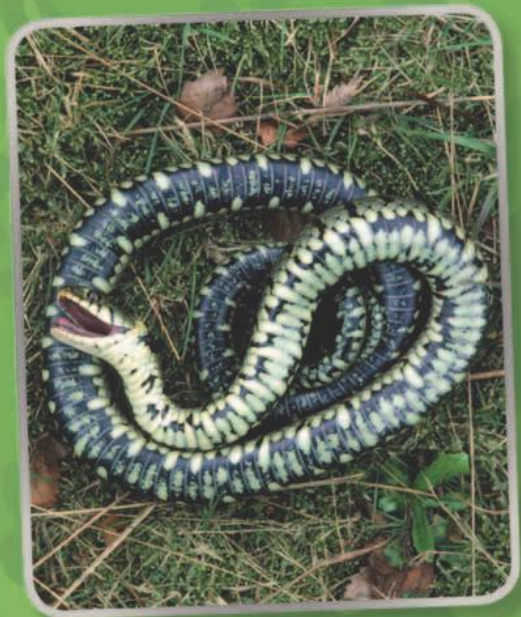
Some lizards have developed a startling form of defense, dropping their tails and leaving them wriggling on the ground to distract predators. Skinks, geckos, and slow worms can all detach their tails. Some can grow new tails, but these are never as long as the original.

Clever **DISGUISE**



The best way to keep from being eaten is not to be noticed. The pygmy leaf-dropping frog (*Afrixalus pygmaeus*) has a very unglamorous way to merge in with its surroundings—by looking like a bird dropping. It sits on leaves in full view and tries to escape attention by sitting very still.

Playing **DEAD**



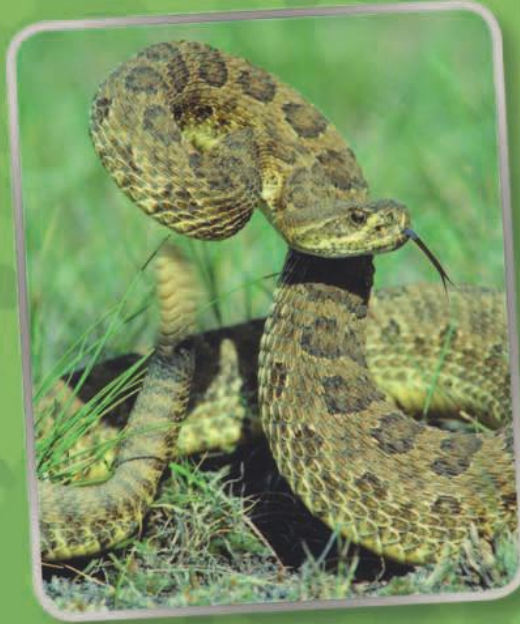
Many predators do not eat animals that are already dead, so pretending to be dead can be an excellent way to stay alive. Some snakes have very dramatic mock deaths where they writhe erratically, bite themselves, and fall back to lie still. Sometimes blood trickles from their open mouths.

Toxic to the **TOUCH**



Some frogs protect themselves by making themselves poisonous to the touch. When this marbled milk frog (*Trachycephalus venulosus*) feels threatened, the poison glands that line its back and neck start to release a toxic milky secretion.

Warning **RATTLE**



The rattlesnake warns off predators by making an intimidating rattling sound with its tail. Its rattle is made of hollow sections that clash against each other when the snake shakes its tail.

Spitting **VENOM**



Some cobras spray or spit venom at a threat. The Mozambique spitting cobra (*Naja mossambica*) can target its venom with pinpoint accuracy. This spitting behavior is so instinctive that young snakes will spit even as they are hatching from their eggs.

Big and **SCARY**



To convince a predator that it is too big to handle, the black rain frog (*Breviceps fuscus*) puffs itself up to twice its original size. This sudden growth spurt also makes it harder to dig the frog out from its tunnel.

REPTILES and **AMPHIBIANS** use a variety of ways to **defend** themselves against their enemies. They **spit**, **rattle**, **trick**, and **scare** their way to safety.

travel blog



The LEATHERBACK sea turtle loves

Travel **FACTS**



Leatherback sea turtles are big travelers. One leatherback was tracked over an epic voyage of more than 12,500 miles (20,000 km). Leatherbacks travel these long distances to feed their appetite for jellyfish.

User **PROFILE**

Leatherback sea turtle

(Dermochelys coriacea)

Leatherbacks are the largest species of sea turtle, and one of the largest reptiles on Earth. An adult leatherback can weigh more than 1,000 lb (450 kg).



Size: 4–8 ft (1.2–2.4 m)

Departure time

Adult sea turtles spend their lives in the world's oceans. They roam large distances in search of food and mates. Adult females also make long excursions to breeding beaches, usually where they were born, to lay their eggs. Experts are still researching how sea turtles find their way back, but they believe sea turtles use Earth's magnetic field, the sea's chemistry, and their memories.



A built-in swimsuit

The leatherback's shell (known as a carapace) is made of a tough, leathery, cartilage material, which gives the sea turtle its Latin name.



Life's a beach

Once the female leatherback has found a beach, she digs a small hole in the sand using her back flippers. She then lays about 100 eggs and covers them with sand. Sea turtles usually nest at night when it is safer.

Once a sea turtle hatchling makes it past any beach predators and into the

Leatherback sea turtle (*Dermochelys coriacea*)

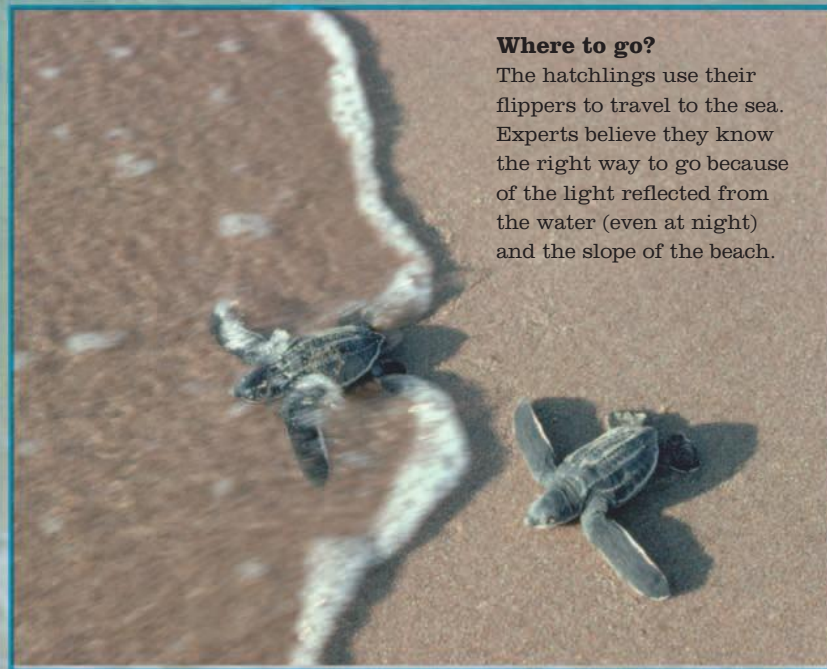
Search

to travel and swims from warm tropical seas to cold, temperate waters.



A new journey

The eggs take about two months to incubate in the sand. The baby sea turtles, known as hatchlings, can take days to dig their way out. Hatchlings normally emerge at night and make the long journey across the beach to the lapping waves. This is a dangerous time for a hatchling, because they are vulnerable to predators such as birds and crabs. About 90 percent of hatchlings never make it to adulthood.



Where to go?

The hatchlings use their flippers to travel to the sea. Experts believe they know the right way to go because of the light reflected from the water (even at night) and the slope of the beach.

Sea turtle SPECIES



• Hawksbill



• Green



• Loggerhead



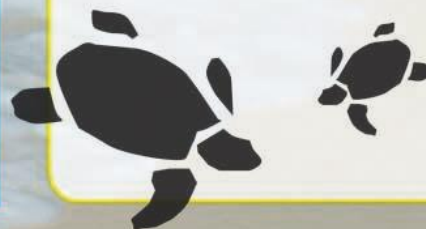
• Olive Ridley



• Kemp's Ridley



• Flatback



ocean, it sets out on a swimming frenzy. It will keep paddling for up to 48 hours.

LOST & FOUND

WANTED



The Southern gastric-brooding frog (*Rheobatrachus silus*) has not been seen in the wild since 1981. After mating, the female swallowed her eggs, switching off her digestive system to allow the larvae to develop. After 6–7 weeks, the female regurgitated her young.

WANTED



The golden toad (*Incilius periglenes*) fell prey to climate change, with rising temperatures and erratic rainfall. Fewer breeding pools meant that frogs gathered in greater numbers and this allowed disease to pass quickly through the population.

WANTED



The Darwin's frog (*Rhinoderma darwini*) has an unusual snout. The male uses his vocal sac to hold the tadpoles until they turn into young frogs. Numbers are declining because the frog's habitat is being destroyed through drought and deforestation.

WANTED



Last seen in 1955, the Hula painted frog (*Discoglossus nigriventer*) was once found along the eastern shore of Israel's Lake Hula. When the Hula marshes were drained in an attempt to reduce the incidence of malaria and make way for agricultural land, it also wiped out the species.

Certain AMPHIBIANS and REPTILES are declining in numbers or being lost altogether. However, lots of **new species** are being *found* every year. Although they can't replace the lost animals that become extinct, they can give scientists hope for the future.

FOUND

In 2009, a survey found that 200 possible new species of frog were living on the island of Madagascar. Statistics like these are *exciting*, since they give scientists promise of finding **new populations of other animals**. Earth contains so many surprises—scientists have to be willing to explore remote places to find and identify new species, although every now and then they'll find them in places that have already been explored.



Occasionally, species new to scientists have been known to locals for years. The **bitatawa monitor lizard** (*Varanus bitatawa*) was found by scientists who were walking across a field in the Philippines in 2010. However, the locals had been hunting it for a long time. Scientists missed it because it doesn't come down from the trees very often.

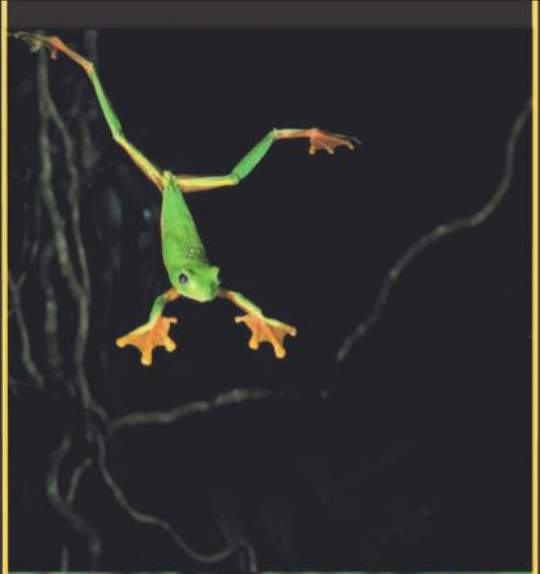


Discovered in Indonesia's Foja Mountains during an expedition in 2008, this little frog has a long, **Pinocchio-like** inflatable nose that expands when the male is calling out. He was seen sitting on a bag of rice in the scientist's campsite and is thought to be one of about 150 species of Australasian tree frogs.

Is it a bird ?

Is it a plane?

The Wallace's flying frog (*Rhacophorus nigropalmatus*) is also known as the "parachute frog" and is one of the few aerial amphibians. The membranes between its toes and the loose skin on its sides help it to glide through the air, although it doesn't actually fly.



Found in Malaysia and Borneo



4 in (10 cm)





7–8 in (18–20 cm)



Southeast Asia

I'm a nocturnal creature so I remain still during the day. I rely on my brown skin with barklike markings to allow me to blend in with the trees. My ability to camouflage myself means I can remain undetected.

I am a Kuhl's flying gecko

(Ptychozoon kuhli) and I love jumping from trees! My strong, webbed feet help me glide through the air. The flaps of skin along my flanks and my flattened, frilly tail also help to control my descent.

Kuhl's flying gecko

is a reptile that lives in tropical forests. It's one of several lizards that "fly" through the forest and jump from trees when escaping danger.

When I'm resting on

a tree, I often face head-down. This allows me to take off quickly if I need to. I'm always ready to jump and glide.





Don't LOOK UP



The **paradise tree snake** is capable of *gliding among high trees* in tropical forests. It dangles from the end of a branch and decides on its direction of travel. It then *pushes its body* away from the tree, **pulls in its stomach**, and flares out its ribs so that it is twice as flat as normal. It glides through the air in a motion of **lateral undulation** (wavelike movements that propel it forward) in line with the ground so that it can land safely. It can glide distances of up to 330 ft (100 m).

It's considered to be the **most adept** of the flying snakes.



Watch out for that snake. It's flying!

The PARADISE TREE SNAKE has a slender body and a long tail. It can MEASURE up to *3 ft (0.9 m)*.



It's a daytime **hunter** and lives on a *diet* of lizards, frogs, bats, and birds. Its TOXICITY is not dangerous to humans.

How did frogs' legs shock SCIENCE?

In 1771, a chance discovery on professor Luigi Galvani's experiment table led, eventually, to the invention of the first battery—without which our lives today would be very different. So how did one small hop for an amphibian become a giant leap for science?



In further experiments, Galvani made the legs hop right across the table!

Luigi Galvani was a biologist at the University of Bologna, Italy. He was experimenting with frogs' legs and static electricity when his metal scalpel touched the brass hook that held the legs.

Suddenly, the legs twitched!

Luigi Galvani



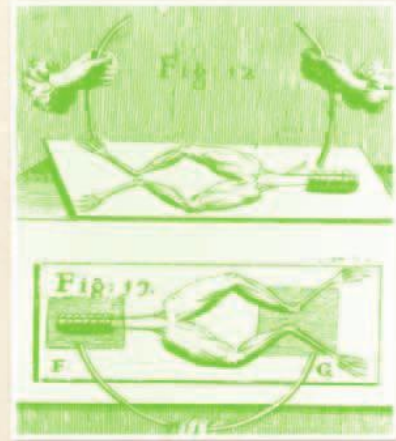
A shocking discovery

Just after Galvani's accidental discovery, it happened again. In a separate experiment, Galvani's assistant touched the frog's sciatic (spinal cord) nerve with his scalpel while he was taking a spark of static electricity from a storage jar. Galvani wrote, "Suddenly all the muscles of its limbs were seen to be so contracted that they seemed to have fallen into tonic convulsions."

Jumping to conclusions

Galvani realized that electricity had made the legs twitch, but where did it come from? He mistakenly concluded that the frog's bodily fluids must have been a source of electricity, which he called "animal electricity."

Science owes a lot to Galvani, including the study of bioelectricity (electricity in a body's nervous system) and the process of "galvanizing" (or coating) metal to protect it.



One thing leads to another

Galvani published his ideas in 1791, when scientist **Count Alessandro Volta** read them. Convinced that Galvani was wrong, Volta repeated the experiments and found that electricity did not come *from* the frog—but that wet tissue in the legs *allowed electricity to flow* between the metal instruments holding the legs. This gave Volta an idea: a pile of copper and zinc disks with layers of wet cardboard between them would not only conduct electricity, but could also store it. This "Voltaic pile" was the first battery.



Today, this area of science is electrophysiology.

How to survive an encounter with a **crocodile** or an **alligator**



1. Do your research and keep an eye out!

Swim in designated areas only. Alligators and crocodiles tend to hunt at dusk or at night so don't go swimming at those times. Crocodilians often only show their eyes and nostrils above the water, so you probably won't spot them easily.

2. Give them space!

You should not get too close to crocodiles and alligators—15 ft (4.5 m) is usually enough room to keep between you and them.

3. Catch me if you can!

The average adult can outrun a crocodile or alligator on land. The fastest land speed for a crocodilian is only 10 mph (17 kph).

4. Don't scare them!

Steer clear of the riverbank if you're on a boat coming around a bend. Crocodilians like to bask on the banks and will react in self-defense if you scare them. If you spot a crocodile or alligator, try to let them know you're there by slapping the water with your oars or by blowing a whistle.

5. Get help as soon as you can

If a crocodilian is defending its young or its territory it might bite its opponent quickly and then let go. However, it is more likely to bite its prey and not release it. If you manage to get away from its grip then you should seek medical help immediately.



they can **CRUSH** bones when they close!

WORKING WITH amphibians and reptiles



Animal **KEEPER**

Animal keepers are responsible for looking after animals in zoos and wildlife parks. The amphibian and reptile keepers must be expert herpetologists. They need to know about how these animals live in the wild, what they eat, how much exercise they need, and what temperature and light conditions they need to live.



Exotic animal **BREEDER**

Reptiles and amphibians are fascinating animals and many people like keeping them as pets. Taking animals from the wild can be bad for wild populations, so specialized breeders supply the pet trade by rearing animals like frogs, snakes, and lizards in captivity.



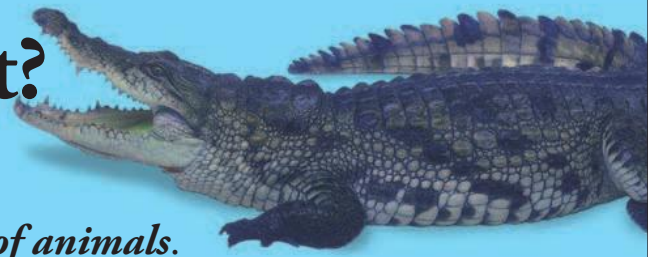
PHOTOGRAPHER

Successful animal photographers get to travel the world and have to know an awful lot about their subject to track it down and get the perfect photo. It's also not always a comfortable job—carrying heavy equipment in difficult terrain and camping in remote locations are all part of the challenge.

You want to be a what?

A HERPETOLOGIST

Zoology is the name given to the *study of animals*. Herpetology is a branch of zoology and is the study of **reptiles and amphibians**. A herpetologist is an expert on these animals.



Veterinary **SURGEON**

Some vets are specially trained to deal with animals such as reptiles and amphibians. They know lots about the health and lifestyles of these creatures and how to care for them in the wild or in captivity. Working with large reptiles can be a hazardous profession, since a bite from an alligator is more serious than one from a dog.



Snake **HANDLER**

If you've got a snake problem, who are you going to call? Professional or volunteer snake handlers can be called in to remove snakes from houses and other places where they can come into contact with people. These may be escaped pets or wild snakes living where they shouldn't be—looking for shade in the summer months.



Biomedical **RESEARCHER**

Some species of amphibian and reptile produce toxins and poisons. Biomedical researchers study these chemicals and look at ways in which they can be of use to humans. More than 200 chemicals produced by amphibians and reptiles have been found to be of use in human medicines.

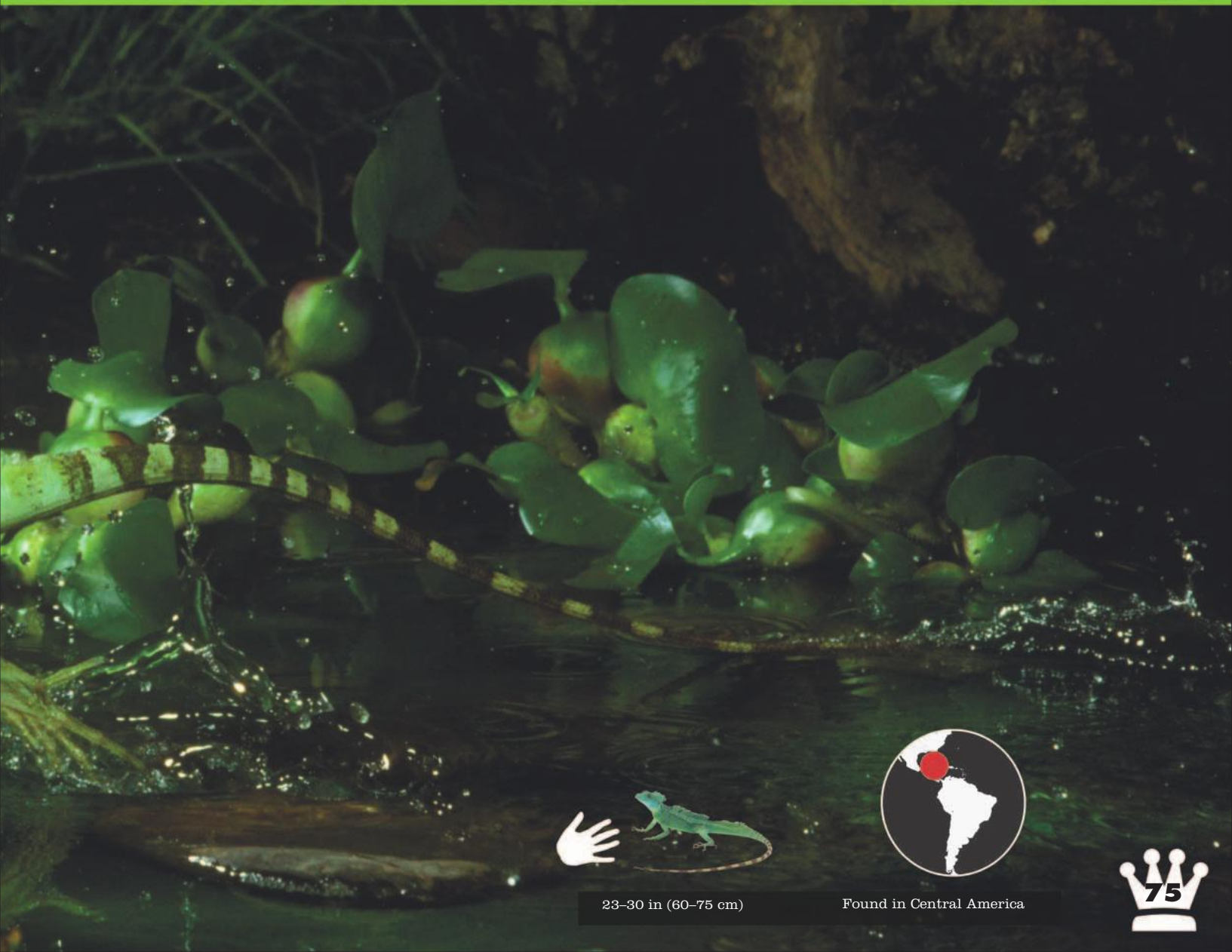


How does this **lizard** walk on **water**?

The **green basilisk lizard** is often referred to as the “*Jesus Christ lizard*” because it appears to walk on water. How it actually manages this “**miracle**” is by running short distances using its hindlegs. Its toes have fringes of skin that open out to create more surface area.



These **curious** and strange-looking lizards gain their name from Greek mythology. Made up of parts of a snake, rooster, and lion, the **basilisk** was able to kill a man just from one look. The name basilisk means “*little king*” in Greek, which seems appropriate considering the crests on its head, back, and tail.



23–30 in (60–75 cm)

Found in Central America



RECORD BREAKERS



Most **POISONOUS**

The Colombian golden poison frog (*Phyllobates terribilis*) is the most poisonous frog, and the most poisonous vertebrate, in the world. It holds enough poison to kill 20 humans or 20,000 mice.



BIGGEST Snake

The Asian reticulated python (*Python reticulatus*), which can grow to 31½ ft (9.6 m), is the longest. The heaviest snake is the green anaconda, weighing up to 550 lb (227 kg).



SMALLEST Reptile

This title is shared by two geckos, both measuring just over ½ in (1.6 cm) as full-grown adults: the Virgin Gorda least gecko (*Sphaerodactylus parthenopion*) and the dwarf gecko (*Sphaerodactylus ariasae*).



LONGEST FANGS

The Gaboon viper (*Bitis gabonica*) is a venomous snake found in sub-Saharan Africa. The largest of the vipers, it can reach over 7 ft (2 m) in length and has huge fangs, measuring up to 2 in (5 cm) long.



FASTEST

The black spiny-tailed iguana (*Ctenosaura similis*) can run at a top speed of 22 mph (35 kph)—making it the world's fastest reptile. The fastest snake, the black mamba, can move at 12 mph (19 kph).



MOST EYES

Tuatara and many of the lizards have three eyes. The third eye is made up of light sensitive cells just under the skin on the top of the head. This "eye" can detect light and dark but can't make out shapes.



RECORD SPIT

Spitting cobras have a special type of fang with a small hole through which the venom is injected at high pressure. The Mozambique cobra can spray its venom over distances of 5½–8¼ ft (2–3 m).



BIGGEST clutch of eggs

Hawksbill turtles (*Eretmochelys imbricata*) can lay over 200 eggs in a single clutch. During the turtles' breeding season, which runs from July to October, female turtles may create 3–5 nests, each with a separate clutch of eggs.



STRANGEST life cycle

One contender for this title has to be Labord's chameleon (*Furcifer labordi*). This reptile spends most of its life (up to 7 months) as an egg, weathering the desert droughts. It lives for only a few months after hatching.

“co-kee”



The **LOUDEST**

The couqui frog (*Eletherodactylus*) is a small Puerto Rican tree frog, measuring just 1 ½ in (4 cm) in length. For something so small, it is incredibly loud, and its distinctive “co-kee” call has been measured at over 100 decibels.



The **MOST TEETH**

American alligators have between 70 and 80 teeth. The teeth are long and pointed but gradually wear down, to be replaced by new teeth. An alligator can go through 2,000 to 3,000 teeth during its lifetime.



The **OLDEST**

The oldest vertebrate (animal with a backbone) is thought to be a Seychelles giant tortoise nicknamed Jonathan. Historians believe that he is now at least 178 years old.



Best **SENSE OF SMELL**

Komodo dragons (*Varanus komodoensis*) will readily feed on rotting meat. They smell with chemical detectors on their tongues and can sense dead animals up to 6 miles (10 km) away. Komodo dragons are the world’s largest lizard.



Biggest **LEAPS**

Most frogs can leap over distances of 10 times their own body length and some species can jump up to 50 times their body length. The largest frog in the world, the Goliath frog (*Conraua goliath*), can jump almost 10 ft (3 m).



LONGEST TONGUE

Chameleons can have tongues that are as long, or even longer, than their bodies. It takes them less than a second to shoot their tongues out, and the sticky saliva on the tongue’s clublike tip traps its insect prey.



MOST DIFFICULT to eat

One contender for this title must be the armadillo girdled lizard (*Cordylus cataphractus*). This lizard is covered in thick and spiked, armorlike scales. It can roll up into a ball, making itself even more unappealing to potential predators.



LARGEST REPTILE

The saltwater crocodile (*Crocodylus porosus*) is the world’s largest reptile, growing to more than 23 ft (7 m) in length. Not only the largest, but also the heaviest, saltwater crocodiles can weigh over a ton.



MOST POISONOUS Snake

Sea snakes are the most poisonous snakes in the world. The beaked sea snake (*Enhydrina schistosa*) can produce enough venom in a single bite to kill 50 people.

The Chinese giant salamander.



GLOSSARY

adapt to change, becoming suited to a new place or a new use.

amphisbaenian wormlike, legless reptile found in tropical climates.

animal breeder someone who organizes the birth of baby animals in captivity and looks after them until they find a new home.

animal keeper someone who looks after animals in a zoo or wildlife park.

antidote a remedy that counteracts the effects of a poison.

antivenom a medicine that treats poisoning from a snake, spider, or insect.

aquatic describes anything growing or living in water.

bask to lie resting in the sunshine.

biomimetics science that copies nature.

captivity when animals are kept confined and looked after by people.

carnivore an animal that eats meat.

cold-blooded describes animals whose body temperature is controlled by the temperature around them.

coma a state of deep unconsciousness.

crocodilian one of the order of reptiles that includes crocodiles, alligators, caimans, etc.

endangered species animals that are at risk of extinction (no longer existing on Earth).

electrophysiology the study of the electrical properties of living tissues and cells.

estivation a kind of deep sleep that animals fall into, sometimes called “summer sleep.”

evolve to change gradually.

extinct a species that has declined and disappeared entirely from the planet.

eyespot skin marking that looks like the eye of another animal. Eyespots are there to fool predators or prey.

fertilize when male and female cells join together to produce a new life.

fins flat projections on fish or mammals that help them propel or guide their bodies through water.

gills organs used to breathe underwater.

hatch when a new animal breaks out of an egg or pupa.

herbivore an animal that eats plants.

hibernate to go into a deep sleep for long periods.

incubation to keep eggs warm so they develop properly.

insectivore an animal that eats insects.

invertebrate an animal without a backbone.

lateral undulation wavelike body movements that move an animal (such as a snake) along.

life cycle the pattern of changes that occur in each generation of a species.

markings areas of color on an animal’s skin or fur.

mate when male and female animals come together during reproduction.

membrane thin, flexible sheet or layer that covers, lines, or connects animal organs or cells.

metamorphosis major change in an animal’s body during its life cycle, as when a tadpole changes into a frog.

nervous system the network of nerve cells in an animal’s body.

predator an animal that kills and eats other animals.

prey an animal that is hunted, killed, and eaten by another animal.

retract to draw in or back. Retractable claws can be pulled back into an animal’s feet.

scales small, overlapping plates that protect the skin of reptiles or fish.

sixth sense the five senses are hearing, touch, smell, sight, and taste. A “sixth sense” refers to anything in addition to the five senses.

snake handler someone who is familiar with snakes and knows a lot about them.

species a group of living things that can breed together in the wild.

static electricity a still electrical charge as opposed to a current, which moves.

thermal relating to temperature, especially warmth.

toxic poisonous.

transparent clear; see-through.

tropical describes anything that comes from (or is like) the hot region of the Earth near the equator.

vertebra a small bone in the spine, or backbone.

vertebrate an animal with a backbone.

veterinarian (sometimes called a vet) a doctor who is specially trained to care for animals instead of people.

warm-blooded describes animals that can control their body temperature.



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