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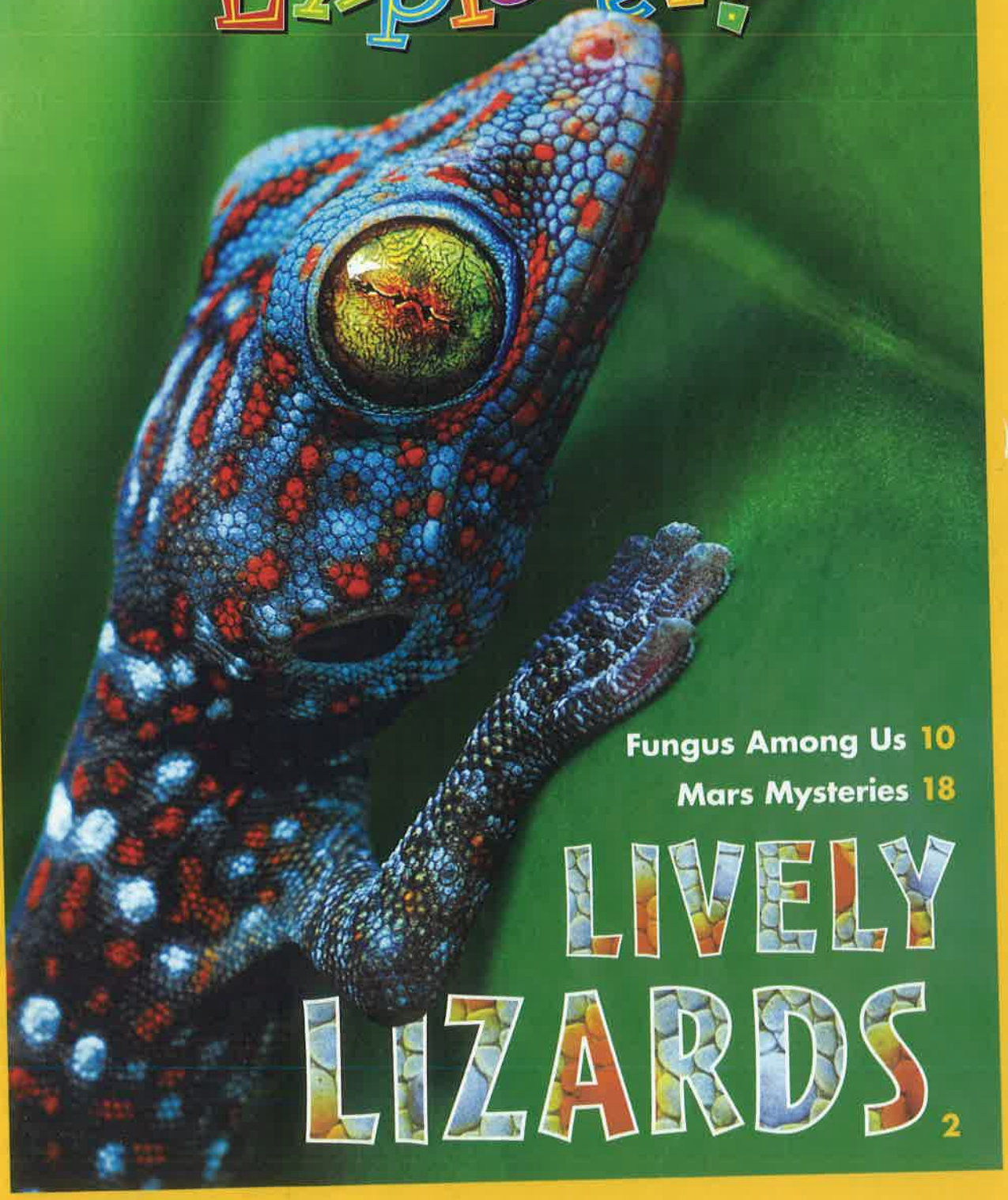
NATIONAL GEOGRAPHIC Explorer!



LIVELY LIZARDS 2

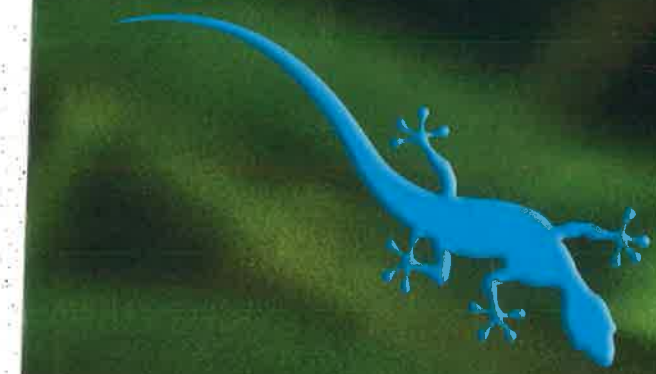
LIFE SCIENCE

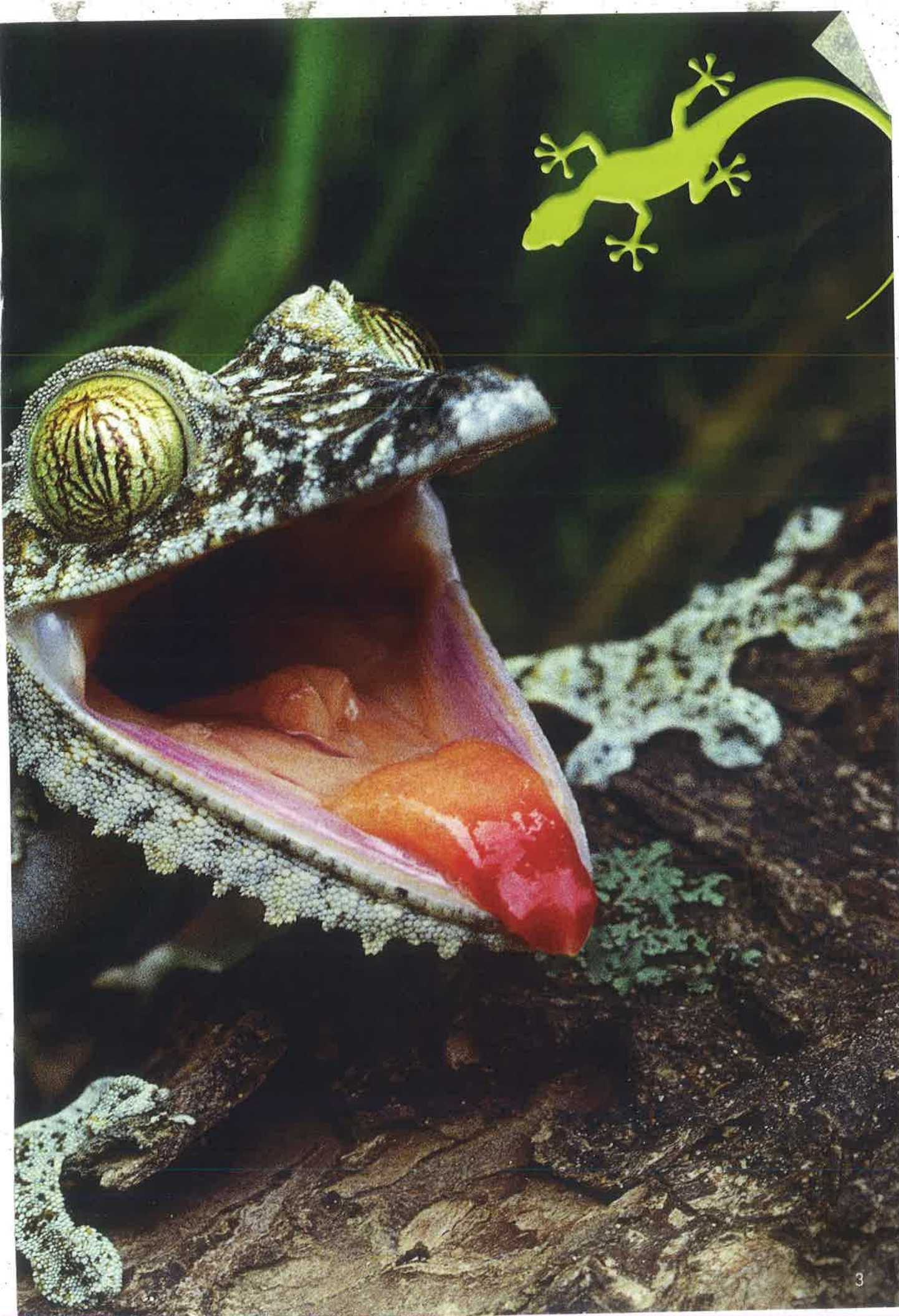
Comprehension Strategy: As you read, use the writer's words to create pictures in your mind of how geckos survive in the wild.

LIVELY LIZARDS

This lizard climbs tree trunks, runs upside down, and glides through the air. Meet the gecko!

by Lana Costantini





It's night in a rain forest. A gecko clings to a high branch. Its skin is brown and green. It blends in with the branch. You might think the gecko is safely hidden. It's not.

Soon a hungry bird swoops down and spots the gecko. It attacks! The gecko pushes backward off the branch. It's falling! The gecko swings its tail to turn itself upright. Then it glides to the ground.

The danger is not over. A cat-eyed snake bites into the gecko's tail. The tail breaks off and wiggles on the ground. The snake goes after the tail.

The gecko uses its super sight to race into the dark forest. It's safe for now. Luckily, geckos like this one are good escape artists!

This crested gecko looks like it has eyelashes.

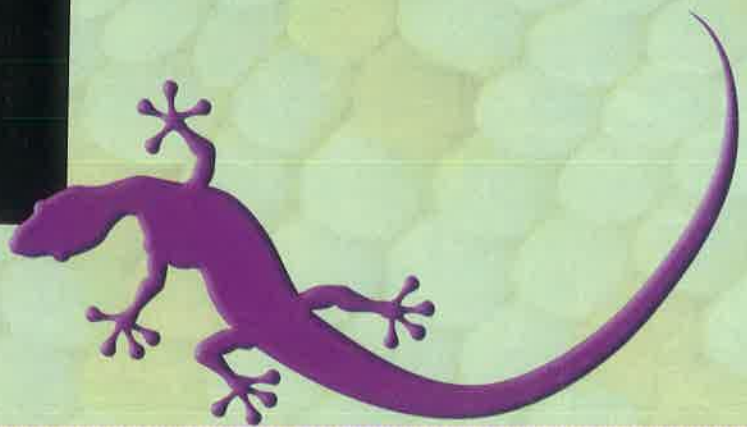
Special Features

Geckos are a kind of reptile. They have lived on Earth for millions of years. Over time, they changed, or **adapted.** That helped them survive.

Geckos can cling to slippery leaves and vines. They can run very fast. They can glide through the air. They can see colors in the dark. They are the only lizards that use a voice to communicate. All these features help geckos survive in their **habitats.**

Some geckos' looks help them survive. The leaf-tailed gecko's tail looks like a leaf. That helps it hide from **predators.** The crested gecko has ridges down its back. They look like eyelashes. They may help protect the gecko's eyes.

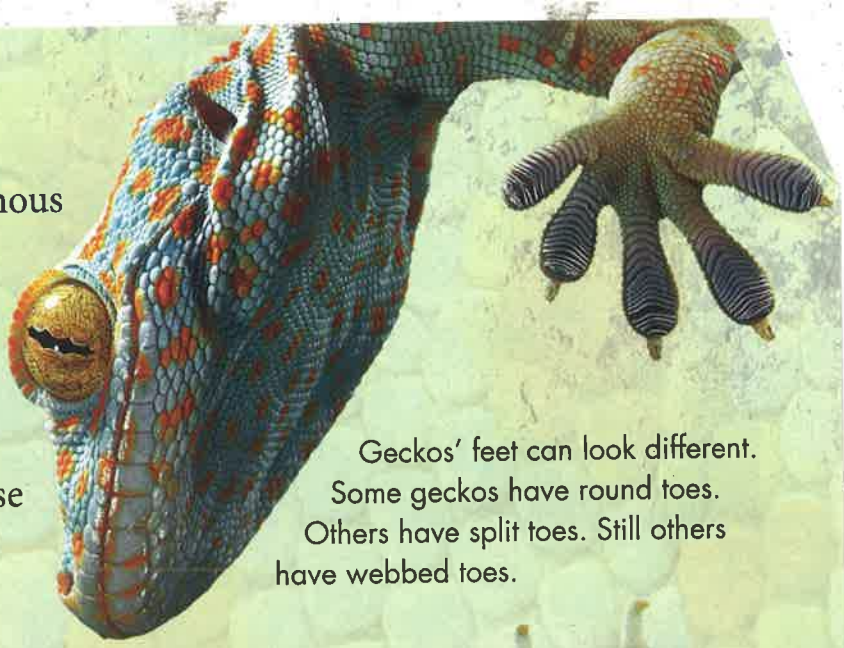
Geckos can be found in warm areas throughout the world. They live in deserts, jungles, suburbs, and cities. Adaptations help geckos survive in all of these habitats. Let's look closer at some of the gecko's wildest adaptations.



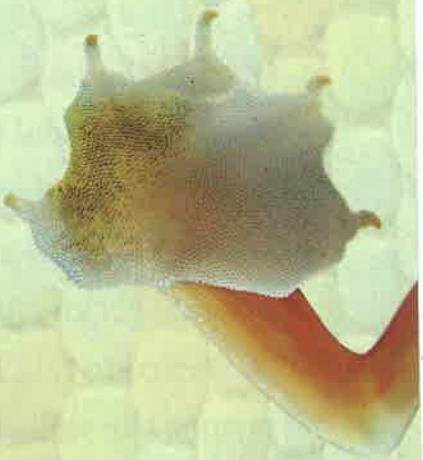
The Gecko Grip

Geckos are known for their famous feet. How does a gecko stick to things? The answer is in its toes. Tiny "hairs" cover the bottom of a gecko's toes. Each hair splits into more hairs. These hairs cling to surfaces.

To get unstuck, the gecko bends its toes backward. It peels its feet off the surface. This may happen 30 times a second.

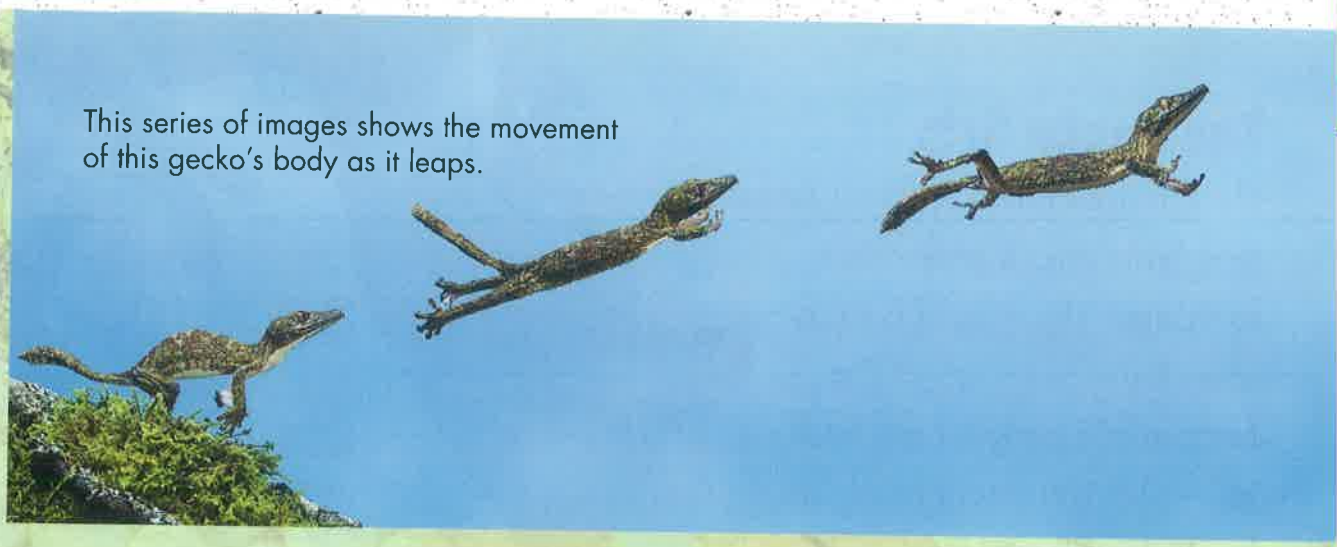


Geckos' feet can look different. Some geckos have round toes. Others have split toes. Still others have webbed toes.



This is called a fantastic leaf-tailed gecko. Its body looks like a twig.

This baby gecko has an "egg tooth." It used it to break through the eggshell.



This series of images shows the movement of this gecko's body as it leaps.

A Terrific Tail

Geckos have special tails, too. Their tails help them if they fall. How do we know? Some scientists watched a flat-tailed gecko climb a wall. The gecko started to fall. It flattened its tail against the wall. The tail helped the gecko get its balance back.

Sometimes a gecko loses its grip completely and falls. As it falls, it twists its tail. Its body twists, too. Now its feet face the ground. The gecko steers with its tail to a safe landing.

Here's another tail talent. What if a predator grabs a gecko's tail? The gecko leaves its tail behind. It escapes.

Life without a tail is harder. A gecko can't balance, climb, or glide as well. The good news is the tail grows back in a few months. The bad news is the new tail is not as long or as strong as the old one.

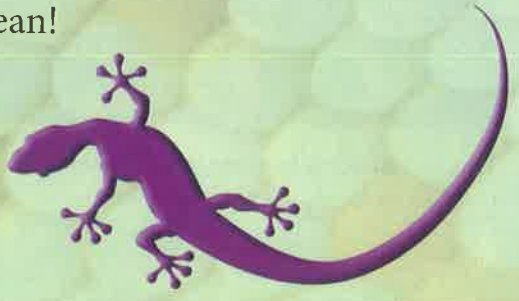
Night Vision

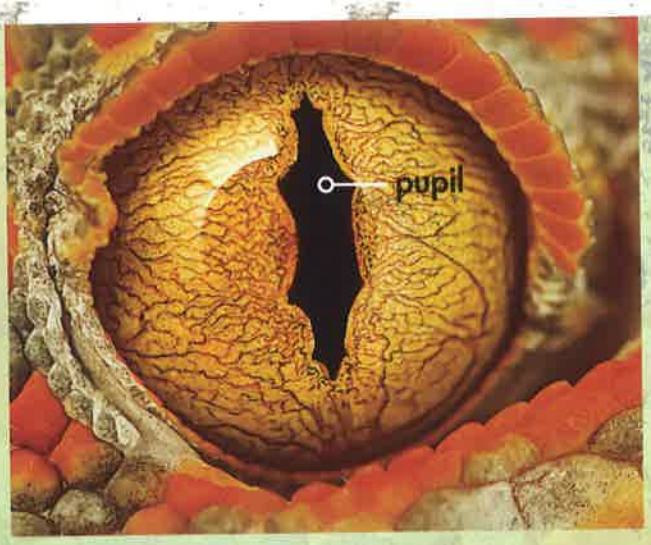
Luckily, geckos have another body part to help keep them safe. It's their eyes.

Most lizards are active during the day. Not most geckos. Over time, many geckos became **nocturnal,** or active at night. These geckos needed super night sight.

So their eyes changed. The pupil, or opening in the center of the eye, got bigger. Now it lets in more light. Other parts that let them see color got bigger, too. In fact, nocturnal geckos can see some colors in the dark. That's unusual. Most other animals can't.

Here's another odd thing about gecko eyes. Most geckos can't blink. They use their tongues to lick their eyes clean!





This is the eye of a tokay gecko. At night, the pupil opens wide to let in more light.

Head to Tail

Most reptiles are silent. Not geckos. They have voices. They may bark, squeak, hiss, or croak. Some sounds attract mates. Others scare predators. They say, "Back off!"

There's no doubt. From head to tail, geckos are built to survive.

Which gecko adaptation would you like to have?

WORDWISE

adapt: to change in order to survive

habitat: place where an animal lives

nocturnal: active at night

predator: animal that hunts and eats other animals

This gecko can't blink. It uses its tongue like a windshield wiper to lick and clean its eyes.

Get to Know the Gecko

Everywhere it goes, a gecko faces danger. Slithering snakes, swooping birds, and other hungry predators are always nearby. See how the Madagascar giant day gecko survives.

Voice clicks in warning. Other geckos squeak, hiss, or croak.

Eyes have round pupils. Its good vision helps it spot prey and danger.

Skin texture and colors help it blend in with its tropical environment.

Legs stick out of its sides, which keeps its belly close to the ground.

Tail breaks away if a predator bites down.

Size includes a tail that's as big as the rest of its body. It helps with balance.

Comprehension Strategy: After reading each section of the story, a yourself: What is the most importan idea? What facts about fungi do I want to remember?

urk under the ground

trees. They float on a

. You might find then

r refrigerator, or even

ce.

by Darlyne A. Murawsk

oming in October

Weird Is Wonderful: Explore the weird ways animals
leveloped to survive in the wild.

m! Discover what life is like when your next-door
oor is an erupting volcano.

Planet: All living things need water to live.
ut how plants, animals, and people use water.

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Cover: This young tokay gecko may grow to 35 centimeters (14 inches) long. It's one of the biggest geckos on Earth.

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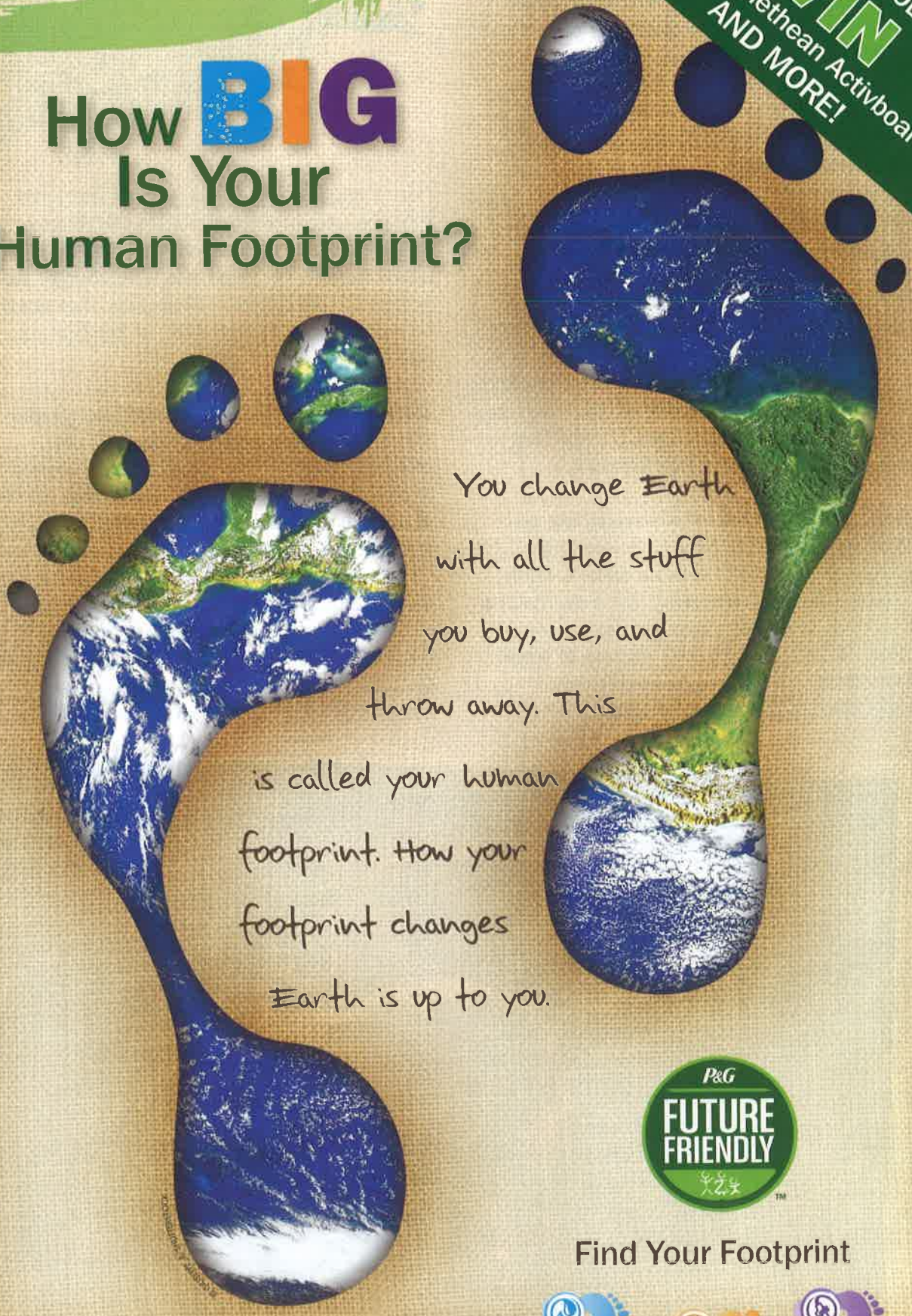
How BIG Is Your Human Footprint?



You change Earth with all the stuff you buy, use, and throw away. This is called your human footprint. How your footprint changes Earth is up to you.

P&G FUTURE FRIENDLY™

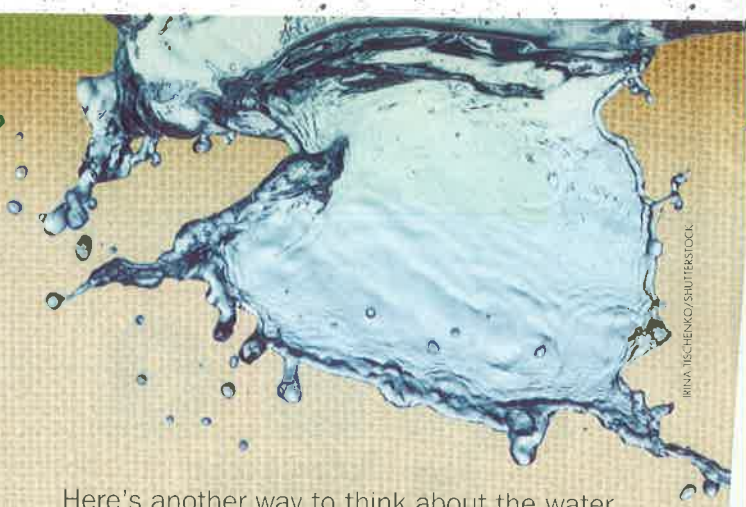
Find Your Footprint

Do you trash the planet?

Probably not. Still, you may leave a larger human footprint than you think. Take a look around you. Look at your desk, the walls, and the ceiling. What do you see? You probably see books, paper, light bulbs, and many other things. You may not have bought those things yourself, but they are all part of your human footprint.

Your human footprint is even larger than what meets your eye. Just take one book, for example. Your book began in a forest. A forester grew and then cut down trees to make that book. A paper mill turned the tree into paper. Then a printer put the text on each page and assembled the book. Finally, the book had to be transported to your school. Each step in that process used water and energy. That one book leaves a very large footprint.

We use water to make nearly everything we eat or use. Scientists have calculated how much water it takes to make a dollar's worth of some things you use every day. How much water does it take to make a dollar's worth of cotton? 4,291 liters (1,300 gallons) of water. What about a dollar's worth of electricity? 1,703 liters (450 gallons) of water.



IRINA TISCHENKO/SHUTTERSTOCK

Here's another way to think about the water that you use. It takes about 24,000 liters (6,334 gallons) of water to grow the feed for a cow that will be made into a hamburger that weighs 0.1 kilograms (1/4 pound). That doesn't account for the cheese, bun, or ketchup you might use.

Water and the other things we get from Earth that are used to make products are called natural resources. Trees, rocks, and minerals are natural resources. So are the things we use to make energy such as oil and coal. As you can see, we use a lot of different natural resources.

You can cut down on the natural resources you use at home. Save energy by washing clothes in cold water. Save water by setting your dishwasher on the light cycle. Reduce waste by using smaller-size sheets of paper towels.

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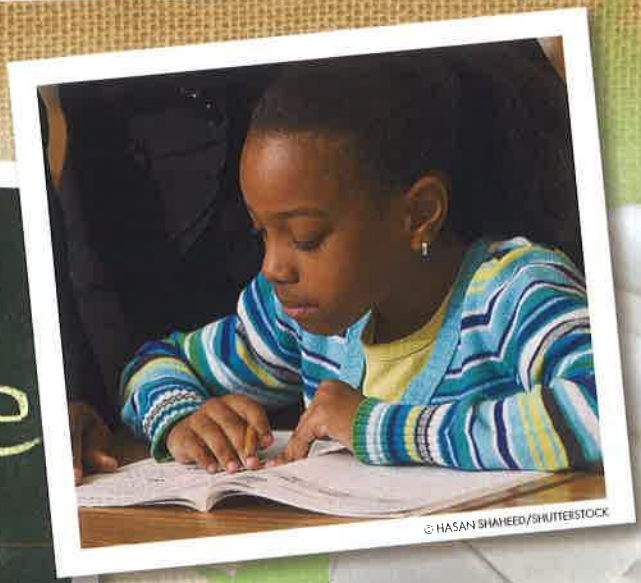
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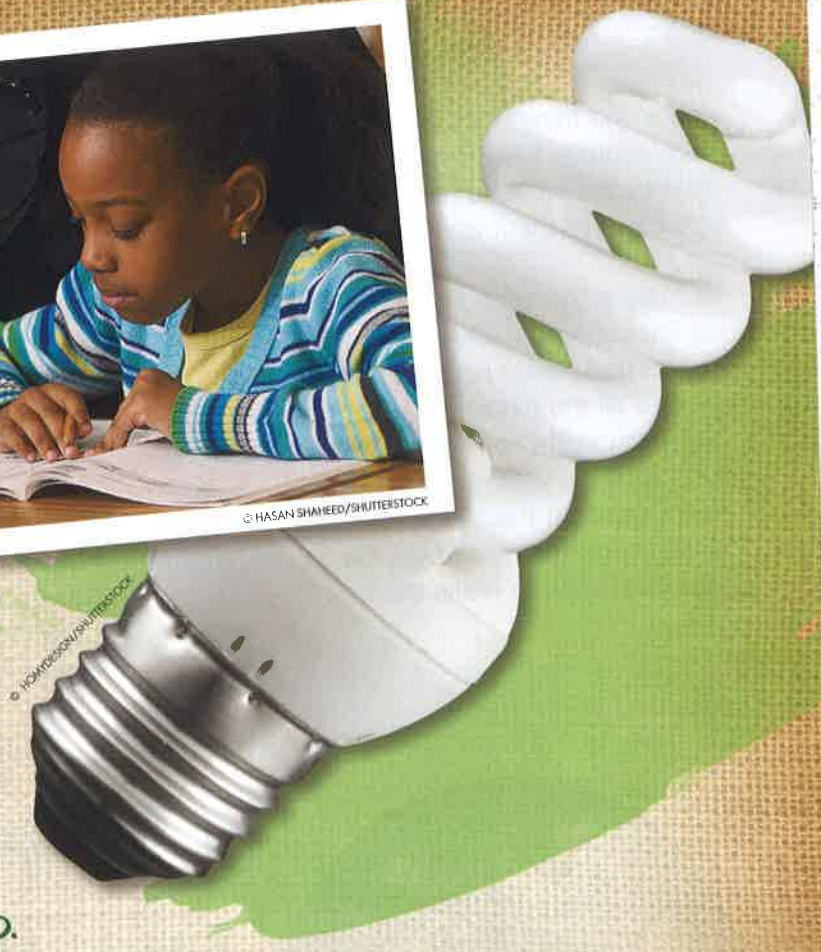
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Schools in the United States and worldwide are pitching in to help.

Let's visit a school in West Virginia. Officials there are retrofitting schools so that they use less electricity and make less waste. What did they do? They installed 10,000 light fixtures that use less electricity. That saves the school money. It also means that less energy is needed to light the school. Imagine saving money and creating less waste.

Retrofitting light fixtures is one way to cut down on waste. Another is to simply turn off lights. Schools in Franklin County, Pennsylvania, started teaching students and teachers about the importance of turning off lights when they are not being used. What happened? The school district saved more than $1 million in two and a half years. Just think of what your school could do with that money!

Schools in Oregon take going green seriously. Each year, they hold the Green Schools Summit. At least 200 teachers and students from more than 70 schools attend the summit. They learn how to save energy and reduce waste. Teachers and students display their achievements for the past year. They celebrate what they have done and learn how they can do more.

Students in a school in Malaysia wanted to help lower their school's water bill. They put spring-loaded taps on faucets to stop them from dripping water. They collected rainwater and recycled laundry water for use in the school's garden. Their efforts worked. They cut down the amount of water they use each month by 36 percent. And they have a beautiful garden.

Williamstown High School in Australia, or Willi High as people there call it, is a new school building. In the summer, the building doesn't use air conditioning. Instead, natural ventilation cools the building. A system collects rainwater. The water is recycled for use in flush toilets and to water plants. Solar energy heats the water. Students always know how they are using the school's resources: Screens mounted around the school show how much water, gas, and electricity is being used.

Many students from around Singapore go on field trips to their science center and nature center to learn how they can use sustainable resources. They walk on nature trails to learn about the plants and animals that live there. Along the way, they learn how they can better use Earth's natural resources.

One of the things the students in Singapore learn about is the three Rs—reduce, reuse, and recycle. You can use the three Rs at school. You also can use them at home. It's up to you.

By making the right choices, you can have a big impact on our environment. For example, do you use plastic bags? Most people do. Just think of all the places you might use plastic bags. You might carry groceries in plastic bags. You might put your lunch in plastic bags. You might even put trash in plastic bags. All those plastic bags quickly add up. So do the natural resources used to make them.

People worldwide use a lot of plastic bags. Some scientists estimate that people use between 500 billion and a trillion plastic bags each year. If each of those bags was the size of a plastic grocery bag, they would stretch from Earth to the moon and back again 400 times.

It takes a lot of energy to make those bags. Did you know that in the United States alone, it takes 12 million gallons of oil to make a year's worth of plastic bags?

Instead of using plastic bags that you toss when you're done with them, use a reusable bag. That will save energy and cut down on the amount of waste you make.

EARTH

MOON

Instead of using plastic bags that you toss when you're done with them, use a reusable bag. That will save energy and cut down on the amount of waste you make.

Cutting down on the number of plastic bags you use not only saves natural resources, it helps in other ways.

Plastic bags cause many problems. Discarded bags flap from tree limbs. They wash down rivers. They blow in the wind. They even are eaten by sea turtles and some other animals.

You also can buy products that come in less packaging. Less packaging uses less paper and plastic. Most people just throw away the package after ripping it off of a purchase. Make sure you recycle it. Recycling paper not only saves trees, it also saves water. One ton of recycled paper saves 17 trees and 30,283 liters (8,000 gallons) of water.

You also can purchase products made from recycled material. You even may be surprised by what is recycled. Some clothes are made from recycled paper. Toys are made from recycled plastic. Jackets are made from recycled soda pop bottles.

Even school equipment is made from recycled material. School tables, cabinets, and lockers all can be made from recycled material. So can chairs, rugs, and playground equipment.

People also are making money from the three Rs. About ten years ago, some college students in New Jersey started a recycling program. They now collect trash from 20,000 schools. They've collected ten million drink pouches, 50,000 energy bar wrappers, one million cookie wrappers, and much more. What do they do with all this trash? They recycle it to make toys and school supplies.

Caring for our planet and its resources may seem like a big job. It is. Yet it can start with small steps. It can start with you. You can decide what to buy, what to recycle, and what to reuse. You can change your human footprint. If everyone makes the right decisions, then we all will be able to live on a sustainable planet.

Save Water. Save Energy. Reduce Waste.