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KIDS

PENGUINS vs. PUFFINS

*Who will win the
seabird smackdown?*



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FOX
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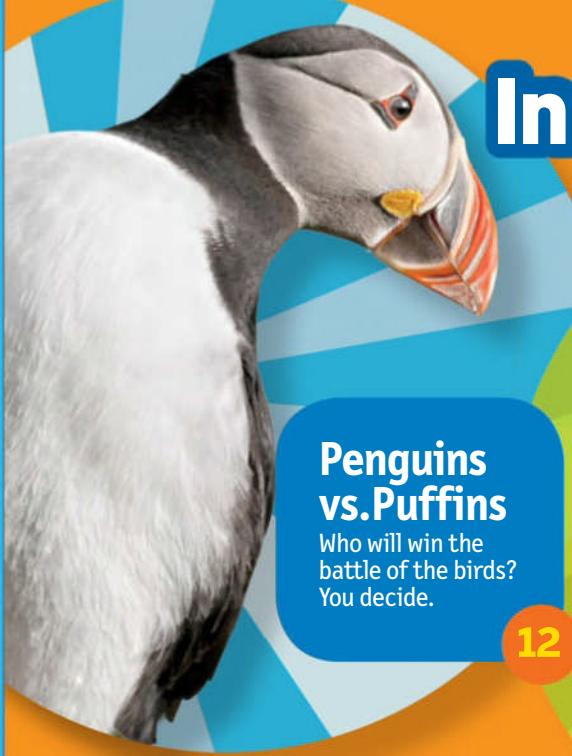
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You decide.

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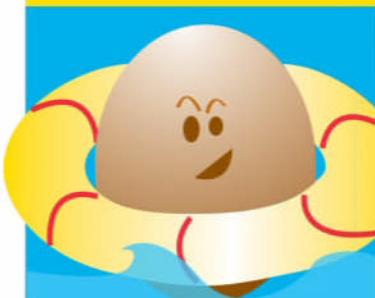
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Check out these outrageous facts.

A TRAFFIC JAM IN CHINA LASTED FOR MORE THAN A WEEK.



Rotten eggs float in water.

Mexico City has sunk more than 32 feet in the last 100 years.

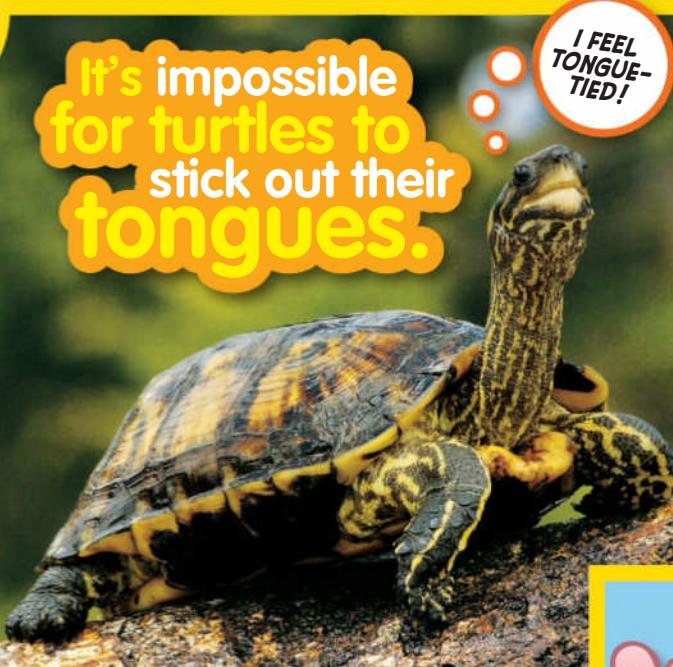
ANCIENT GREEKS USED

hula hoops.

A FIVE-SEAT BICYCLE IS CALLED A QUINDEM.



KIDS' FINGERPRINTS DISAPPEAR FROM SURFACES FASTER THAN ADULTS' DO.



It's impossible for turtles to stick out their tongues.

A Finnish man wrote a novel

made up of

1,000 text messages.

You can buy worms from a vending machine in some countries.

CHECK OUT THIS BOOK!



ASTONISHING
STORIES FROM
THE FILES OF

Guinness World Records

BY ELIZABETH HILFRANK

SUPER-FURRY RABBIT

Haircut ... what's that? With her nearly 15-inch-long hairs, Franchesca the Angora rabbit holds the record for the longest fur on a rabbit. One benefit is that she always has a cozy fur coat for the winter. The problem? According to owner Betty Chu, sometimes Franchesca's mistaken for a dog!



Shield your eyes: This jewel's got some serious sparkle. The Pink Star jewel became the most expensive jewel sold at an auction after its owner paid \$71.2 million for it. Jewelers took nearly two years to cut and polish the oval-shaped stone. Before being purchased, the Pink Star was displayed in museums around the world. You could look at it—but you *definitely* couldn't touch it.

MAJOR BLING

READY, SET, JUMP!

If you think jumping rope is hard, try doing it with 299 people next to you. That's exactly what the students of Wat Lam Nao School in Bangkok, Thailand, did to earn the title of most people skipping over the same rope. Three hundred students simultaneously jumped over a rope 25 times. Wonder when they'll try double Dutch?



ALL About MONEY!

BY KRISTIN BAIRD RATTINI



THE NAME OF FORMER PHILIPPINES PRESIDENT ARROYO WAS MISSPELLED AS ARROVO ON THE HUNDRED-PESO NOTE IN 2005.

SOME EARLY CHINESE COINS WERE SHAPED LIKE KNIVES.



IT TAKES ABOUT 4,000 DOUBLE FOLDS—FORWARD AND BACKWARD—BEFORE A U.S. BILL WILL TEAR.

CURRENCY MADE FROM THE RED FEATHERS OF THE SCARLET HONEYEATER BIRD WAS USED IN THE SANTA CRUZ ISLANDS IN THE SOUTH PACIFIC OCEAN UNTIL THE 1980S.



MY ACCOUNT IS FROZEN, SO JUST PUT IT ON MY BILL.

THERE ARE TWO ATMs IN ANTARCTICA.



THE MYTHICAL WINGED HORSE PEGASUS

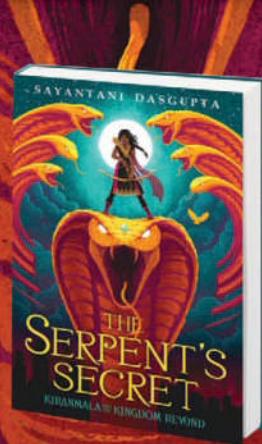
appeared on a coin from the ancient Greek city-state of CORINTH.



SHE'S A LEGEND.



(SHE JUST DOESN'T KNOW IT YET.)



WATCH THE TRAILER!
scholastic.com/SerpentsSecret

Bet you
**didn't
know**

6 feline facts to pounce on

1 People in the United States own about **94 million cats** and **90 million dogs.**

3 **Felix the Cat** was the first **balloon** in the Macy's Thanksgiving Day Parade.

4 ALL CATS ARE BORN WITH BLUE EYES.

2 A litter of kittens is also called a **kindle**.

5 Cats were **domesticated** at least **3,000 years ago** in Egypt.

6 Cats communicate using at least 16 known "cat words."

CHECK OUT THIS BOOK!



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anytime!



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our other shows
on these
platforms!

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Roku Players

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KIDS

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NAT GEO
KIDS

Saturday
mornings on
Nat Geo
WILD!

By the Numbers

MILKSHAKE MADNESS

Who doesn't love a thick,
creamy milkshake?

Get out your reusable straw and
slurp up these facts about
the sweet treat.

BY JULIE BEER AND MICHELLE HARRIS



A CHEF IN
NEW YORK
MADE A

6,000-

GALLON MILKSHAKE,
WHICH IS THE SAME AS
48,000
NORMAL-SIZE
MILKSHAKES.

A MILKSHAKE
STRAW IS

0.3

INCH IN DIAMETER
AND
WIDE

8.4
POUNDS
OF ICE CREAM
EVERY YEAR.

A SMALL
MCDONALD'S

NEARLY

8

INCHES LONG.



VANILLA
MILKSHAKE HAS

490

CALORIES AND 11 GRAMS
OF PROTEIN.

IT WOULD TAKE

5.28

million

16-OUNCE MILKSHAKES
TO FILL AN OLYMPIC-SIZE
SWIMMING POOL.

OLGA MARKOVA / SHUTTERSTOCK

THE ARTIFICIAL
FLAVOR USED
IN SOME
STRAWBERRY
MILKSHAKES
CONTAINS ABOUT

40

DIFFERENT
CHEMICALS.

One United Kingdom
restaurant sells more
than 150 different
milkshake flavors.

CHECK OUT
THE BOOK!



Amazing Animals

PARROT WEARS SWEATERS

Lecompton, Kansas

Chilly temperatures never get Javi the bird down. That's because the lesser sulphur-crested cockatoo (a type of parrot) owns plenty of sweaters to keep herself warm!

Normally birds rely on their feathers to stay toasty. But Javi—who was likely raised in harsh conditions before moving to the Tallgrass Parrot Sanctuary—probably plucked out most of her feathers because of stress. Care-takers weren't sure if her belly and chest feathers would grow back, but they knew Javi would be more comfortable with another layer covering her delicate skin. So they fitted her with a sweater.

Today the cockatoo owns more than 20 sweaters. They're made from colorful socks that Tallgrass co-owner Kail Marie makes herself. The fashions have caught the eye of Javi's bird friends, Sassy and Poppy. "Javi's the leader," Marie says. "They'll follow her anywhere." Looks like Javi got more than a new wardrobe—she got new friends as well.

—Sara Schwartz



JAVI WAITS FOR HER OWNER TO PREPARE HER APPLE.



HERE WE
COME TO
SAVE THE
DAY!

BOOTSY
(LEFT) AND
DIPSTICK

PUPPIES SAVE LOST KID

Virginia, Virginia

Jaylynn Thorpe's family was terrified when the three-year-old wandered off into the woods on a frigid 17°F night. Thankfully, Bootsy and Dipstick the puppies wandered off with him—and probably saved his life.

While rescue workers searched for Jaylynn with scent-sniffing dogs and a heat-seeking helicopter, the puppies nestled around the shivering boy. They pressed against him all night and kept him warm—and alive. "They treated him like another puppy in their litter," veterinarian Emily Kinnaird says. "They snuggled to keep warm."

Twenty hours later, rescuers were nearby. But a scared Jaylynn hid beneath a pile of leaves. Once again, the puppies played the heroes, barking to alert the rescue team. Jaylynn was reunited with his family, cold and hungry but unhurt. "The puppies were very important to his survival," fire chief Chad Loftis says.

—Johnna Rizzo



TORTOISE S2 SK8

Jerusalem, Israel

No one expects tortoises to be speed demons. But when Arava the African spurred tortoise got a "skateboard" for her back legs, she became speedier than most.

Arava had arrived at the Jerusalem Biblical Zoo unable to move her hind legs. "She wouldn't eat and kept tucking her head inside her shell," veterinarian Nili Avni-Magen says. "She seemed so sad." The medical staff couldn't find a reason for the paralysis, but they had a solution: wheels!

Arava could still use her front legs, so a metalworker built a two-wheeled metal platform with straps to go around her shell. When Arava first tried out her "skateboard," she took a few steps with her front legs and started rolling. Soon she was zipping around her enclosure on her board, "outrunning" the other tortoises—except when she was trying to ollie off of a ramp!

—Marinell James



HEY, WHERE ARE
THE BRAKES ON
THIS THING?



PENGUINS vs. PUFFINS

TEAM
PUFFIN!

*Who will win the
battle of the birds?
You decide.*

BY JULIE BEER

Puffins

Dive-bombing in from the Northern Hemisphere, we have three adorable species of puffins. These “sea parrots” are ready to take on their seabird rivals in this epic battle of awesomeness.

Atlantic



Horned



Tufted

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Penguins

TEAM PENGUIN!

And next we have ... whoa! The penguins sure did bring a lot of friends to this showdown. Is it already an unfair match? Take a look at what the puffins are up against. Waddling in from the Southern Hemisphere are 17 species of penguins.



Adélie



African



Chinstrap



Emperor



Fiordland



Galápagos



Gentoo



Humboldt



King



Little blue

Erect-crested



Macaroni



Magellanic



Rockhopper



Royal



Snares



Yellow-eyed

OK, now you've had a look at both teams. Which one are you rooting for? And can you be swayed to the other side? See if you have the same opinion after we present some fierce battles!

WIN THE
BOOK!
TRY ONLINE
FEBRUARY 14-21.
natgeokids.com/march



Puffins

Want to play with the puffins?

Well, pull out your scarves and mittens because puffins prefer to chill out where it's nippy most of the time—think Alaska, Iceland, Maine, and Canada. But for much of the year, they're simply floating out at sea, gobbling up fish and tidying their feathers. It's not until breeding season that they fly ashore.

Where
puffins
live



Best Turf

If you're having trouble telling the difference between a puffin and a penguin, don't worry. There's zero chance you'll ever have an awkward run-in with them both. Why? They don't live in the same place! Puffins live north of the Equator, and penguins (except for the Galápagos penguin) live in the south. In fact, except for zoos and aquariums, there's not one place on Earth where you can see both a penguin *and* a puffin. So which bird occupies the best real estate? Let's find out!

Where
penguins
live

Penguins

According to some movies, penguins live in Antarctica and spend their time waddling around the ice. Well... some do. Those majestic emperor penguins rule icy Antarctica. And though it may sound fun to go down and waddle with them, consider this: It's not unusual for temps to drop as low as minus 40°F. But penguins have options. For instance, Galápagos penguins, the only penguins that live north of the Equator, spend their time in and around the rocky shores of the Galápagos Islands. They build their nests in volcanic rock! So if you're hanging with penguins, you get your choice: fire or ice.



Best Parents

Puffins

To prepare for their little puffling, puffin parents dig a burrow several feet long on a rocky cliff and line it with feathers and grass. Puffin moms lay one egg, then both parents take turns keeping it warm. But instead of sitting on their egg, puffin parents tuck the egg under their wing and lean on it. Once a baby puffin is born, the couple rotates flying out to sea to snag some fish for themselves and their little one. Puffin couples often stay together their whole lives, reuniting at the same burrow site every year.

Having a puffin or penguin as a mom or dad has its perks. For starters, you don't have to get out of bed for breakfast. If you're a penguin chick, you're served warm regurgitated fish. That's right, food that Mom and Dad already ate, then brought back up and dribbled right into your mouth. Yum? Pufflings get raw fish dropped at their feet daily. Take a look at penguins' and puffins' individual chick-raising styles to see which wins the trophy for best parents.



Penguins

Emperor penguins take a similar tag-team approach to parenting. After trudging the equivalent of two marathons (50 miles) to their breeding site, penguin moms lay a single egg, then make a quick hand-off (make that "footoff"—penguins don't have hands!) to Dad, who will stay with the egg for the next several months while Mom waddles back to the sea to hunt. Emperors don't build a nest. The egg balances on Dad's feet and is covered by his "brood pouch," a feathered flap of skin that keeps the egg warm. Once Mom shows back up with food for the newly hatched chick, Dad can trudge off to fill his growling belly.



#fashionista
DOES THIS FLOWER
MATCH MY OUTFIT?



#followme
I KNOW WHERE ALL
THE GOOD FISH ARE.

Most Photogenic

#squadgoals
JUST A LITTLE
CHEST-PUFFIN.



Penguin selfie! #cuteppuffin! If penguins and puffins were on social media, they'd probably have more followers than a pop star. Check out these shots and decide whether penguins or puffins are better at mugging for the camera.

#smooches
KISSING PARENTS—
SO AWKWARD.

#openwide
DO I HAVE FISH
BREATH?



#bedhead
I WOKE UP
LIKE THIS.



CHECK
OUT THIS
BOOK!



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Class Clown

Puffins

If this were a costume contest, the puffins would win by a nose. But puffins aren't just clown look-alikes—they play the goofy part as well. For instance, one of the best known clown tricks is the clumsy fake fall. Puffins have that nailed. Except... it's not fake. When puffins come in for a landing, stay clear. Those little guys wobble and bobble until they plunk themselves down, and sometimes it's with a thump. (And if the landing is in the water, it's often with an ungraceful splash!)



Penguins

A penguin's "costume" may be stuffy and serious, but this bird knows how to have fun. For example, when cold weather penguins get tired of doing their little penguin shuffle, they plop on their bellies and go for a slide on the ice! This playful move is called—what else?—tobogganing. And better yet, they use both their wings and feet to steer. High marks in the silly category, penguins.



Decision Time

You're the expert now—on both penguins and puffins! So it's time to ask yourself: "Are you Team Penguin... or Team Puffin?" Then grab a parent and go online to the Nat Geo Kids website at natgeokids.com/penguins-vs-puffins to have your voice heard in this battle of the birds.

Puffins

REPLAY



Height: 10 inches

Weight: 17.5 ounces

Number of species: 3

Range: North of the Equator

Flight speed: Up to 55 miles an hour

Swim speed: About 3 miles an hour

Diving depth: 200 feet

Favorite food: Fish

Greatest enemy: Gulls

Known for: A clownish beak

Penguins

REPLAY



Height: Up to 4.3 feet

Weight: Up to 90 pounds

Number of species: 17

Range: Mostly south of the Equator

Flight speed: Penguins don't fly!

Swim speed: Up to 22 miles an hour

Diving depth: Up to 1,850 feet

Favorite food: Fish, squid, and crustaceans

Greatest enemies: Leopard seals and predatory birds

Known for: Starring roles in blockbuster films



NATIONAL
GEOGRAPHIC
KiDS



Porcupines sometimes click their teeth to communicate. The winter fur under a porcupine's bristles is as thick as sheep's wool.



A threatened porcupine may scamper backward at its enemy. Some porcupines have tails that help them grip and climb trees.

REAL OR FAKE?

BY EMILY KRIEGER ART BY TOM NICK COCOTOS

These may be some of the most bizarre stories you've ever read—but only three of them are actually true. Can you tell the difference between the real-life headlines and the phony-baloney?

ANSWERS ON PAGE 35



2 ALASKAN ICE MONSTER

Is there a monster hiding in Alaska's remote waters? Thousands of people were left wondering just that after watching a video posted by the state's Bureau of Land Management. In 2016 the government organization shared a short but scary-looking video of the icy Chena River. The caption read: "#WildWednesday Our Fairbanks employees captured this strange 'thing' swimming in Fairbanks, #Alaska." In the clip, a large, snakelike object wriggles through the water. People all over the world shared the video of the "ice monster" and speculated what the creature could be. It didn't appear to be any known animal, and a government employee had posted the video, so it must be a real-life monster sighting.



1 SCIENTISTS DISCOVER ITCH TRICK

Having an itch you can't scratch is the worst. But scientists say they've found a solution for people plagued with itchy ailments. A study found that scratching the non-itchy, opposite limb while using a mirror to make it look like it's the itchy limb fools the brain into thinking the itch was scratched! The trick works like this: A mirror is placed between an itchy person's two arms, and they're asked to look into it so that they can't see their itchy arm but instead only a reflection of the non-itchy one. Then someone else scratches the non-itchy arm. (The trick doesn't work if the itchy person is doing the scratching.) Participants reported feeling relief when scientists performed the trick on them. Being fooled never felt so good!



3

AT EARTH'S CENTER: ANOTHER EARTH?

Deep down in the center of Earth is something really weird: another planet! The cold, rocky sphere scientists call proto-Earth (*proto* means original or primitive) is a little-known secret nestled more than a thousand miles beneath people's feet. First discovered in 1975, its existence has repeatedly been called into question by scientists. But in 2007, researchers in Morocco announced that by studying seismic waves (the ones that cause earthquakes) and chemicals drilled from Earth's core, they had proof that a Mars-size Earth is lodged in the center of our planet. They estimate it's more than 20 billion years old, but they don't think anything lives there. Plans are in place to send machines to study the planet as soon as 2045.



4

PIGEONS PUT ON LIGHT SHOW

New York City is home to some superfamous stars. It's also home to a huge pigeon population, which many people consider pests. But one artist disagrees: He and his pigeon pals created an amazing aerial show. To put on the performance, the artist attached tiny, remote-controlled LED lights to leg bands for birds. Then he trained thousands of these pigeons living aboard a ship to fly when he blew a whistle at dusk. What happened after the pigeons took flight was totally unrehearsed. The birds' swooping movements through the night sky created a starry show that some viewers said looked like fireworks!

5

COW BACKPACKS CATCH BURPS

Cow burps are a problem. It's not their smell; it's because they pollute the planet. In the United States alone, about 25 percent of methane, a greenhouse gas that causes global warming, comes from cow burps. So scientists have been studying ways to reduce cow gas in the air. One idea out of Argentina is so weird it made news: cow backpacks! A plastic bag strapped atop a cow collects gas from its tummy via an inserted tube. It sounds silly, but it works: The contraption captures about 1,200 liters of gas from each cow every day; 300 liters are methane. Scientists say gas can be turned into an energy source strong enough to power a refrigerator for a full day!



WELCOME to FOX Island

YUM!
A TASTY
TREAT.



BLECH!
I PREFER
FISH.

**How clever
scientists saved
these
cute critters**

BY ALLYSON SHAW

GOLDEN EAGLE

BALD EAGLE

ME

Native Americans likely brought island foxes to the southern Channel Islands.



WITH THE PACIFIC OCEAN BEHIND IT, AN ISLAND FOX PACES IN A GRASSLAND HABITAT.



A MATING PAIR OF ISLAND FOXES SHOWS AFFECTION. THE SPECIES USUALLY MATES FOR LIFE.

An island fox kit emerges from its underground den and sniffs the brush on Santa Cruz Island, some 20 miles off the southern coast of California. His brother follows, and the two foxes tumble over each other as they play fight. Soon their mother halts the fun, grooms both pups from head to tail, then leads them away to teach them how to hunt.

A few decades ago, about 4,000 island foxes roamed Santa Cruz Island and two others in the Channel Islands National Park. But recently they nearly disappeared. Human activity had dangerously altered the foxes' habitat, and by 1999 only about a hundred foxes remained.

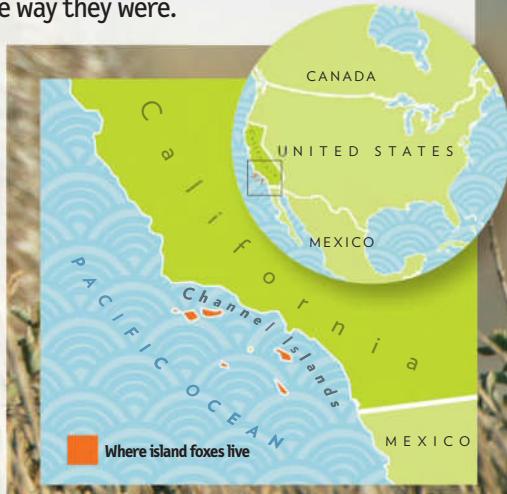
Scientists knew that if they wanted to save this fox—a species that lives nowhere else on Earth—they'd have to change the islands again. They'd need to develop a bold plan to restore the islands back to the way they were.

OUT OF BALANCE

About the size of house cats, foxes were once the top predators on these islands, eating everything from insects to mice to birds to fruit. "They were like the lions of the Channel Islands," says Tim Coonan, a biologist with the U.S. National Park Service. "They didn't have any predators."

But that started changing about 80 years ago. Before, the foxes shared their island home with bald eagles, which ate mostly fish and chased away other birds of prey. In the 1940s and 1950s, though, pesticide waste began seeping into the ocean off the California coast. It poisoned sea creatures, which over time poisoned fish-eating bald eagles too. By 1960 all the bald eagles were gone from the islands.

Without the territorial bald eagles guarding the islands, golden eagles settled on three northern Channel Islands: San Miguel, Santa Rosa, and Santa Cruz. Unlike bald eagles, these birds hunt mammals that live on land. Island foxes became the



AN ISLAND FOX KIT STAYS CLOSE TO ITS DEN. KIT DENS ARE OFTEN IN ROCKS, WOOD PILES, BRUSH, OR BURROWS.





perfect prey. Within a decade, golden eagles nearly wiped out the foxes.

The foxes were in danger of disappearing from the islands forever unless someone did something—fast. Working together, scientists from the National Park Service, the Nature Conservancy, and other agencies developed an amazing plan to save the island fox.

HERE COME THE KITS

A curious island fox sniffs its nose. “Cool!” it might have thought. “There’s food in that box!” It walks in, and snap! A door shuts behind it.

The island fox rescue plan started with an attempt to increase the fox population. But to do that, scientists had to keep the critters safe from eagles. So they created special traps to help them move the foxes to safety.

Luckily the foxes weren’t hard to capture: Biologists

baited the traps with cat food and simply waited for the foxes to walk in. “When we went to collect the foxes, they’d be curled up asleep,” says Christina Boser, an ecologist with the Nature Conservancy.

Scientists kept breeding pairs in 20-foot-by-40-foot pens on their home islands. Inside, the foxes climbed on tree branches, rested in hammocks, and hid in wooden den boxes. Then ... success! The foxes began having kits the following year. These animals were starting their comeback.

EAGLE SWAP

But what good is a comeback if hungry golden eagles still soar the skies? Scientists knew they had to get the predators away from the islands. And they had some tricky ideas.

One plan was to place an animal carcass on the ground that was secretly attached to a net that would spring up and trap the bird. Another was to place fake eggs in the eagles’ nests that had drugs to make them sleepy. Yet another involved tricking the eagles into trying to chase away a real great horned owl from its nest—only to be trapped by netting when the eagle got close.

A SCIENTIST CHECKS OUT A YOUNG BALD EAGLE, ONE OF THE FIRST HATCHED ON THE NORTHERN ISLANDS IN 50 YEARS.



A WORKER FROM THE NATIONAL PARK SERVICE HOLDS AN ISLAND FOX KIT BORN IN CAPTIVITY.

Unfortunately, once any method started working, the birds learned to avoid the traps. “Only the really smart eagles were left at the end,” Coonan says.

Scientists finally nabbed the last golden eagles, trapping them when they were on the ground with a net that was shot from a helicopter. In all, the team trapped, transported, and released 32 golden eagles back to the California mainland.

Now they just had to keep the golden eagles from coming back. The plan? Raising bald eagle chicks on the islands. Scientists even fed the eagles through a door so they wouldn’t bond with humans.

Today about 60 bald eagles fly over the Channel Islands. They are helping to



Island foxes are about one-third the size of their closest relative, the gray fox.

maintain a safe habitat for the foxes so the mammals can continue to thrive.

FOX ISLAND

With the golden eagle population dwindling, the wild foxes could safely breed again. Combined with pups from the captive foxes, scientists eventually increased the fox population to a healthy 250. Once the goldens were completely gone, scientists released the captive foxes back into their habitat.

Boser and other scientists brought the foxes in cat carriers to different parts of the three islands. But one fox wasn't ready to say goodbye. "We opened

FREEDOM!
BRED IN
CAPTIVITY, AN
ISLAND FOX
DASHES
AWAY AS IT'S
RELEASED INTO
THE WILD.



the kitty carrier and walked away to release another fox," she says. "When we walked back, she was sitting on top of the carrier."

The population on the three islands today is the same if not greater than it was before the golden eagles came to the islands. The curious, playful critters often greet human visitors when they arrive—and can get mischievous.

"They'll try to pull the zipper down on my tent and run off with my shoes and socks," says Chuck Graham, a wildlife photographer and kayak guide. "They're a part of the Channel Islands. They deserve to be here."



Pups weigh a hundred grams when born—about as heavy as a lemon.



Excellent
climbers, the foxes
can grab fruit from
the tips of tree
branches.

Island Living

Island foxes live only on California's Channel Islands. Meet a few other critters found nowhere else but there.



ISLAND DEER MOUSE

FUN FACT

When startled, deer mice drum their paws on a hard surface as a warning to other mice.

ISLAND SPOTTED SKUNK

FUN FACT

Skunk kits often walk behind their mom in a single-file line.



ISLAND SCRUB-JAY

FUN FACT



Island scrub-jays sometimes build their nests with animal hair.

ISLAND NIGHT LIZARD

FUN FACT

These lizards can live to be 25 years old.



CHANNEL ISLANDS SLENDER SALAMANDER



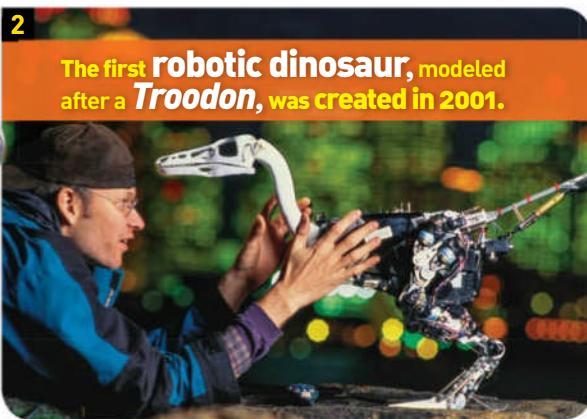
FUN FACT

Salamanders can lose and regrow their tails.

NOW SHOWING!
50 BIRDS, 50 STATES
CALIFORNIA
natgeokids.com/march



In New Zealand you'll soon be able to order pizza delivered by **drone**.



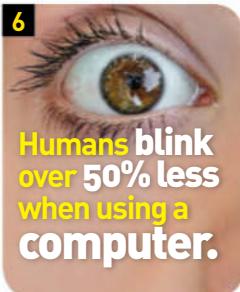
The first **robotic dinosaur**, modeled after a *Troodon*, was created in 2001.



One day, laptops will **roll up** like a **yoga mat**.
The earliest **handheld cell phone** sold for nearly **\$4,000** in **1984**.



The first **computer mouse** was made mostly of **wood**.



Humans **blink** over 50% less when using a **computer**.

A newly invented **light bulb** needs to be changed only once every 20 years!

Scientists are studying the "spines" on the surface of cats' tongues to develop a new **high-tech hairbrush**.



BY ELIZABETH HILFRANK

30 Cool THINGS ABOUT



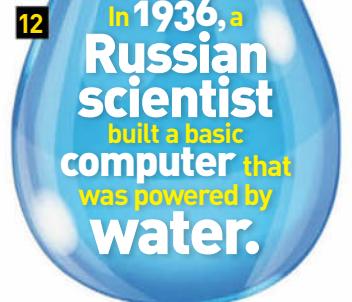
One computer system can tell the difference between a genuine smile and a false smile.



Nearly all cell phones in Japan are **waterproof**.



A car company modeled one of their cars after the yellow **boxfish**, a tropical fish found in parts of the Indian, Pacific, and Atlantic Oceans.



In 1936, a **Russian scientist** built a basic **computer** that was powered by **water**.



One of the world's first **alarm clocks** always rang at the same time: **4 a.m.**



The computers used in the 1969 moon landing had less processing power than a modern **cell phone**.

The world's first **robot chef** can cook up to 100 different dishes, including **crab soup**.



17

Motion-tracking technology allows visitors to **control the movements** of a virtual sea lion at *Encounter: Ocean Odyssey*, an interactive digital aquarium.



18

You'll find 10 times more bacteria on a smartphone than on a toilet seat.



21



Researchers are developing touch screens to allow trained dogs to make phone calls and send text messages.

22

A humanoid robotic diver named **Ocean-One** investigates underwater shipwrecks.



TECHNOLOGY

23



WIND TURBINE

Some wind turbines have bumps that mimic those on a humpback whale's flipper to increase efficiency.

24



A COURTYARD PHOTOGRAPHED FROM AN UPSTAIRS WINDOW

The world's first photograph took more than eight hours to develop in 1826.

25

Plastic trees planted in Mumbai, India, convert sunlight into electricity, illuminating some streets.



CHECK OUT THIS BOOK!

26

Some **drones** can create 3-D maps of the insides of buildings.

29



3-D printers have created fake beaks and limbs for injured animals.

27

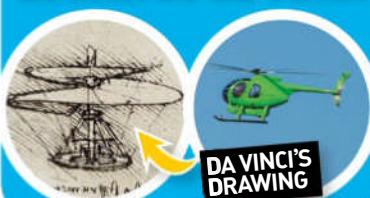
Special satellites can see a grapefruit on a picnic table from 250 miles above Earth.

30

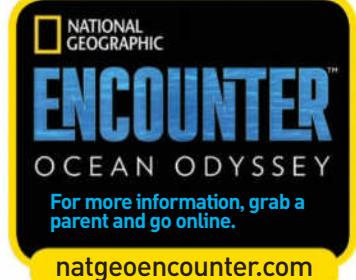
Wildlife officers use fake animals to spy on illegal hunters.

28

Helicopters trace their history back more than 500 years to drawings by Leonardo da Vinci.



DA VINCI'S DRAWING



For more information, grab a parent and go online.

natgeoencounter.com

Fun Stuff

games, laughs, and lots to do!

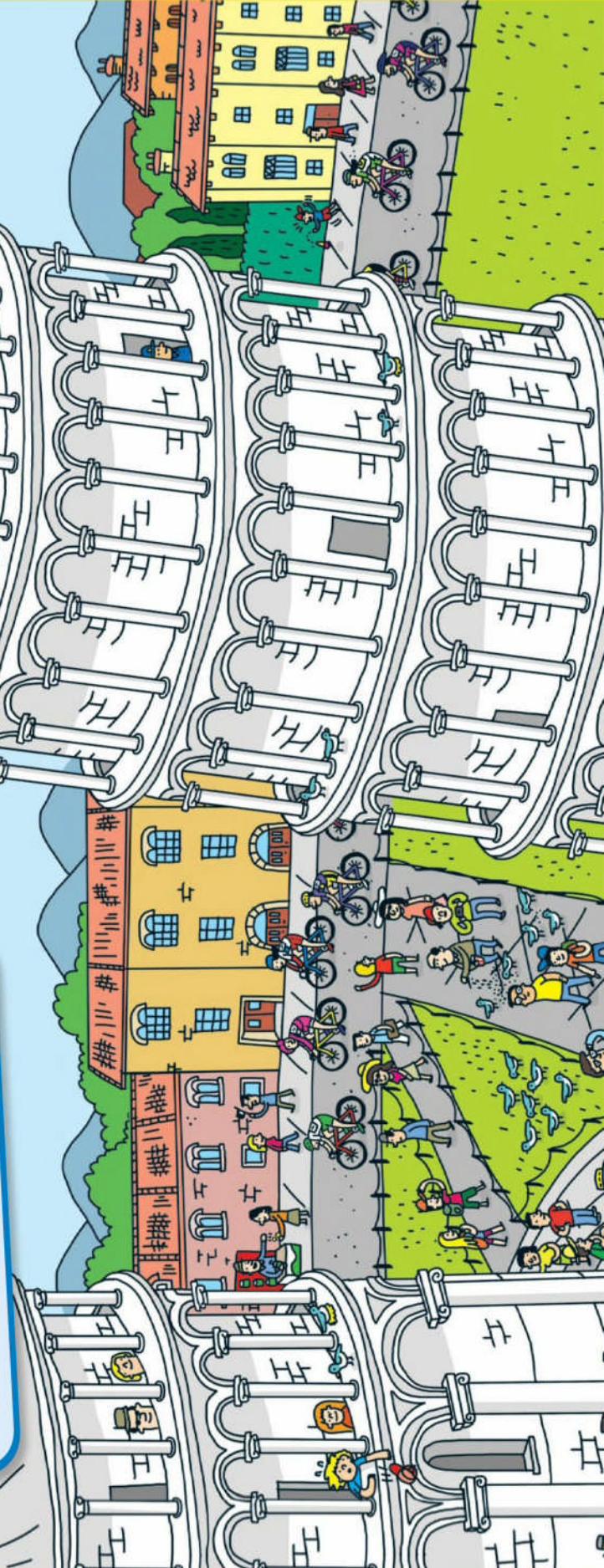
Free Fall

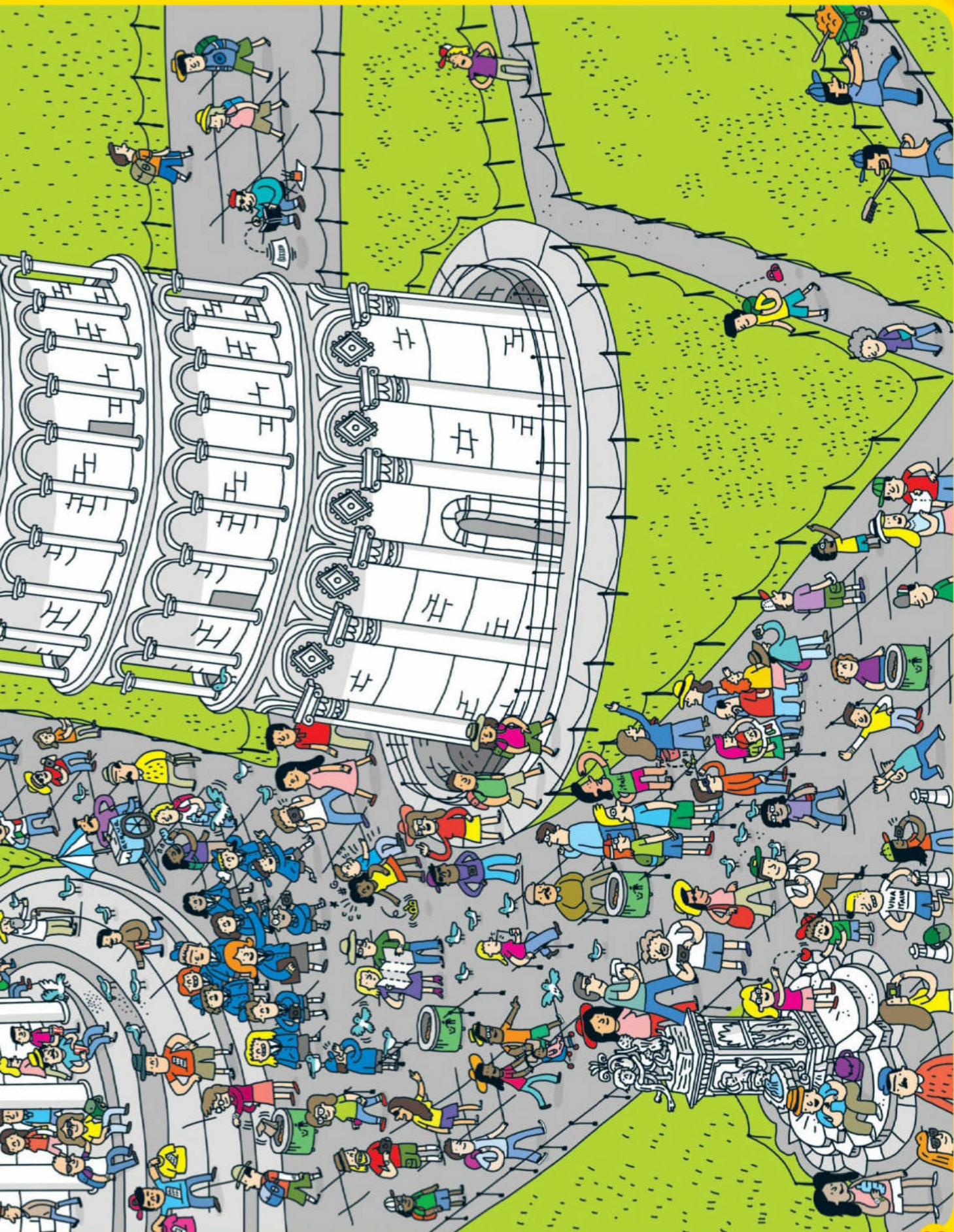
Someone has forgotten a guidebook at the top of Italy's Tower of Pisa. Using the series of clues, figure out which person the guidebook belongs to.

ANSWER ON PAGE 35

The person whom the guidebook belongs to ...

- is wearing glasses.
- is wearing a watch.
- is wearing a short-sleeved shirt.
- is not wearing a hat.
- has brown hair.
- is wearing red shoes.





Funny FILL-IN

Rock Star

BY AMANDA SANDLIN

Ask a friend to give you words to fill in the blanks in this story without showing it to him or her. Then read out loud for a laugh.

My band, the Three _____, finally got our big break. _____ was looking for kids animal, plural male celebrity to star in his new show, “ _____ ’s Got Talent.” We grabbed our musical _____ and your hometown noun, plural filed into the auditorium where _____ people were waiting to audition. Finally it was my large number band’s turn to perform. I was so nervous my _____ started to _____. I took a(n) body part, plural verb _____ breath, then we started to play a rock ’n’ _____ tune. _____ adjective verb relative’s name jammed on the _____ keyboard and _____ on the drums. _____ adjective friend’s name past-tense verb Then it was time for my _____ solo. I went to hit a(n) _____ chord when my adjective guitar flew out of my hands. I _____ backward and grabbed it in midair, but I lost my balance, past-tense verb crashed into the drum set, and broke the keyboard. I _____ off the stage and landed in the front past-tense verb row. Everyone was silent until _____ jumped to his feet and gave us a(n) _____ verb ending in -ing ovation. “ _____ !” he yelled. “That was the best comedy routine I’ve seen so far. You’re in!” silly word

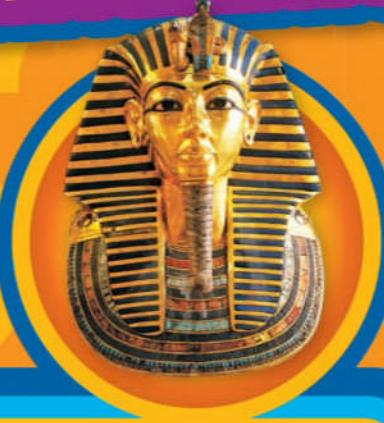
PLAY

Funny
FILL-IN
natgeokids.com/ffi

STUMP YOUR PARENTS

If your parents
can't answer
these questions,
maybe they
should go to
school instead
of you!

ANSWERS ON PAGE 35





- 6** Which song from the movie *Frozen* won an Academy Award for best original song?
A. "Let It Go" C. "Colors of the Wind"
B. "Under the Sea" D. "A Whole New World"



- 7** You may find a nudibranch—a shell-less snail—living _____.
A. in a desert burrow
B. on a tree in the rain forest
C. on an Arctic glacier
D. under a rock on the seafloor

- 8** According to legend, a(n) _____ caused the city of Atlantis to sink into the ocean over 11,000 years ago.

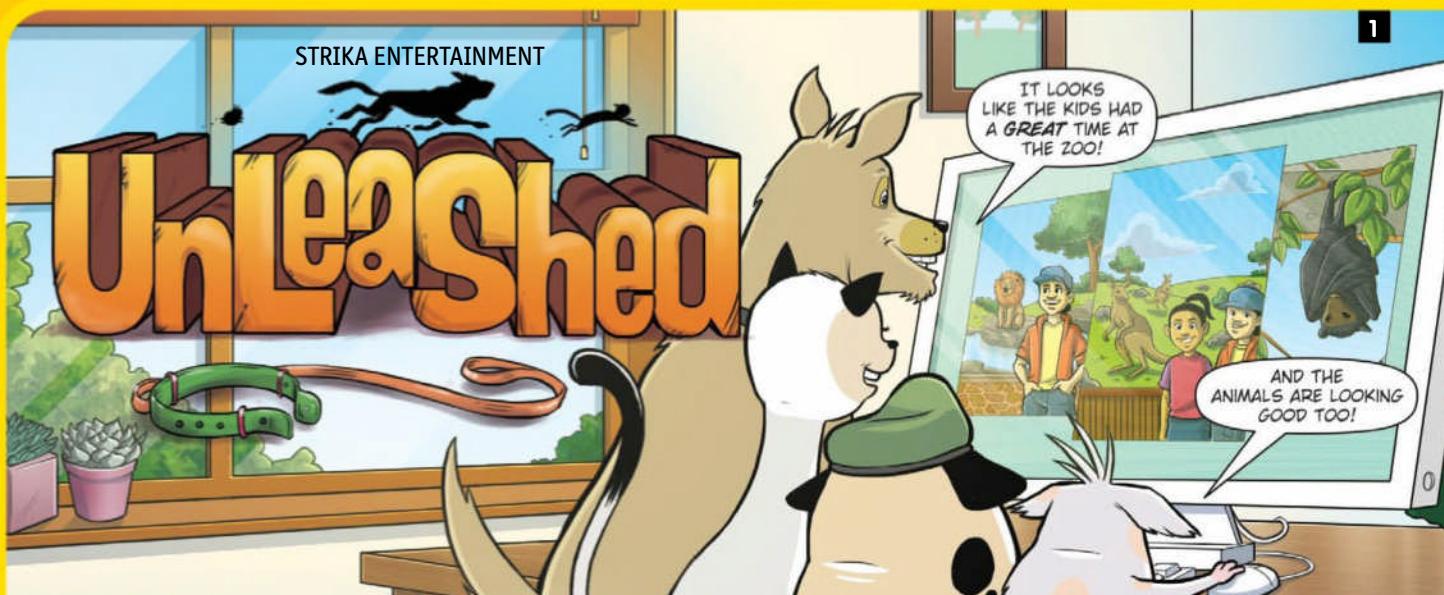
 - A. hurricane
 - B. earthquake
 - C. tornado
 - D. alien invasion



- 9** How did *Stegosaurus* protect itself from enemies?
A. It smacked them with its spiky tail.
B. It sat on them.
C. It stomped on them.
D. It bit them.

- 10** It took _____ to build the Empire State Building.
A. a little more than a year C. 10 years
B. 5 years D. 50 years

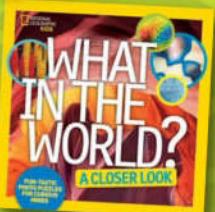






What in the World?

CHECK OUT
THIS BOOK!



GOLD STANDARD

These photographs show close-up views of golden objects. Unscramble the letters to identify what's in each picture. Stay golden!

ANSWERS ON PAGE 35



OLGD RBSA



HOPYRT



YESK



TAHWC



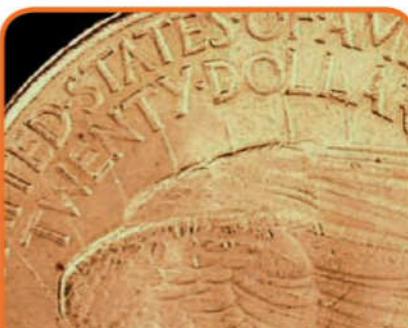
SUEATT



DGLO TNSGEUG



WONRC



ICNO



RNEFHC ONRH

Just Joking

**KNOCK,
KNOCK.**

Who's there?
Cash.
Cash who?
No, thanks.
I prefer peanuts.



Q What protects a clown from the sun?

The ozone layer



Q What do you call a shy lamb?

A Baaash-fu!

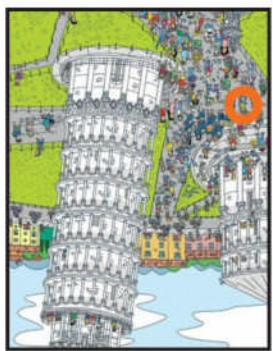
Blue-webbed gliding frog



Answers

"Where in the World?" (page 34):
Top row: gold bars, trophy, keys.
Middle row: watch, statue, gold
nuggets. Bottom row: crown, coin,
French horn.

Simplifying Fractions (page 27)
1. B, 2. D, 3. C, 4. B, 5. C, 6. A, 7. D,
8. B, 9. A 10. A



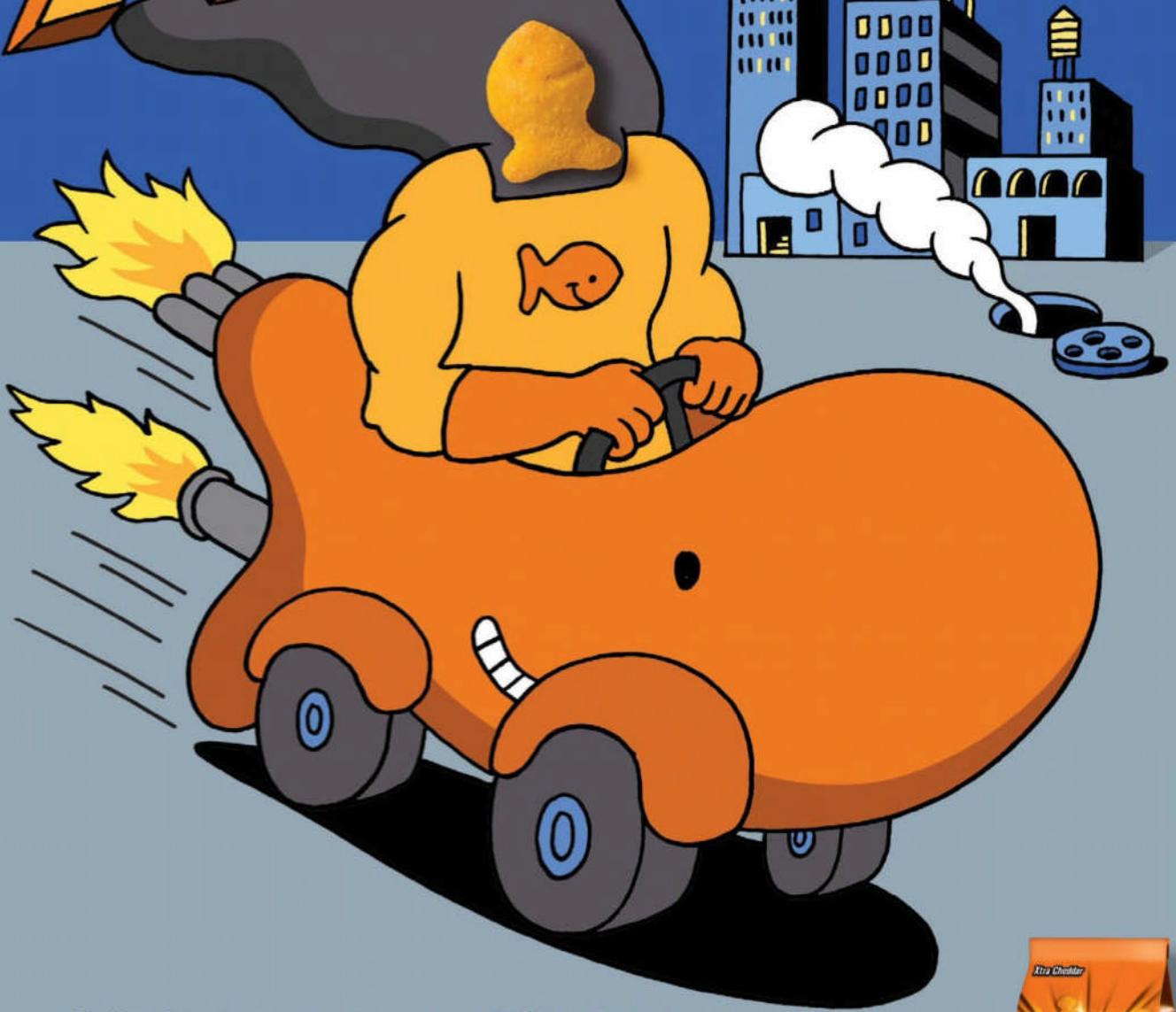
"Free Fall" (Pages 28-29):

REAL OR FAKE? (Pages 20-21): "Alaskan Ice Monster" (2) is fake—sort of. The government did post about a monster but only a prank. "The 'monster'" was actually an Icy rope." "Another Earth?" (3) is the other fake story.

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