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# KIDS

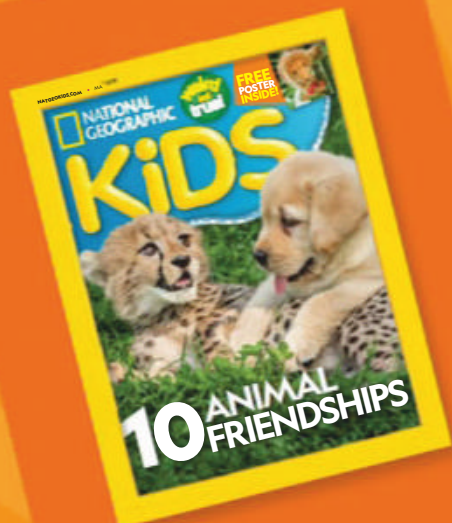
SPECIAL  
ISSUE

# Save the Ocean!

## 35 Ways You Can Help







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**SPECIAL ISSUE**

# Save the Ocean!



We know you love the ocean and want  
to protect the animals that depend on it.  
Before getting started, **take a cool  
quiz on page 12** to find out which  
of the rescued creatures below  
you're most like, then dive in!

**PLUS!**  
**35 WAYS**  
to reduce your  
plastic waste  
to save the  
ocean!

## RESCUED FROM PLASTIC



14

### Duck

A caring human rescues  
an injured bird from a  
plastic ring.



16

### Dolphin

Divers take action to save  
this sea mammal from  
fishing line.



18

### Sea Turtle

Rescuers swoop in to help  
a baby sea turtle that  
swallowed a balloon.



20

### Whale Shark

Brave swimmers come to  
the aid of a whale shark  
entangled in plastic.



22

### Harbor Seal

Fishermen scoop up a  
harbor seal pup trapped  
in plastic nets.

## DEPARTMENTS

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COVER: INGRID VISSER / SEAPICS (DOLPHINS); JULIET MILTON (DOG AND DUCKLINGS); JEZ BENNETT / GETTY IMAGES (LION); ERIC ISSELEE / DREAMSTIME (CHAMELEON). PAGE 3: INGRID VISSER / SEAPICS (DOLPHINS); MARTIN FOWLER / SHUTTERSTOCK (DUCK); TORY KALLMAN / SHUTTERSTOCK (DOLPHIN); SCIENCE FACTION / GETTY IMAGES (SEA TURTLE); TOBY CHUNG / GETTY IMAGES (WHALE SHARK); ACCENT ALASKA / ALAMY (SEAL)

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# Check out these outrageous facts.

BY MARILYN TERRELL



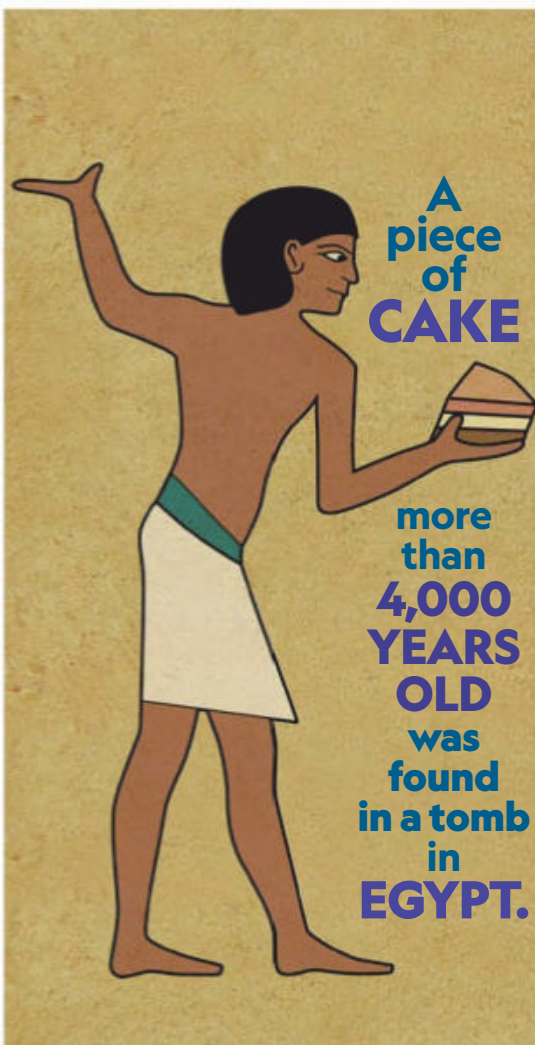
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A line of all the **HARRY POTTER BOOKS SOLD** (over 500 million copies) could circle the Earth twice.



It's possible to produce **ELECTRICITY** from elephant dung.

Adults can have as many as **1,500 DREAMS** a year.



A **95-mile-long** underground river flows beneath **MEXICO.**

A **Pennsylvania bakery** made a **hot dog** that was **54 feet long.**



# INCREIBLE ANIMAL FRIENDS

BY KITSON JAZYNKA



WANT TO  
PRACTICE  
OUR ROARS  
TODAY?

## LION CUDDLES WITH MEERKAT

NAH,  
I THINK I'VE  
GOT MINE  
DOWN.

### AFRICAN LION

**HEIGHT** 3½ to 4 feet  
tall at the shoulder

**WEIGHT** 265 to 420  
pounds

**RANGE** much of Africa

#### SUPERSIZE MEALS

Lions can consume over 70 pounds of meat in one sitting. That's like eating more than 280 hamburgers for dinner!

**MANE POWER** Some researchers think you can tell how strong a male lion is by the length of his mane.

### Pilanesberg, South Africa

Whenever Bob the meerkat got sleepy, he'd curl up in his favorite spot—between the paws of Zinzi the lion cub. “The animals would play in the morning and then cuddle together as they dozed,” says San-Maré Pretorius, co-manager of Predator World, where the animals lived. “They were inseparable.”

The pair was introduced after their mothers abandoned them. Soon they were grooming each other, chasing one another, and snuggling when it was nap time. Zinzi liked to playfully leap at her meerkat buddy, then Bob would run away but return a few seconds later to try to pounce on Zinzi! The mischievous meerkat would also sometimes snatch the cub's food or grasp onto her leg for a ride.

Zinzi moved back to the zoo's lion habitat when she was about three months old. But the animals' friendship had a long-lasting effect. Carefree Bob made Zinzi feel less nervous. And Bob had so much fun hanging with Zinzi, he's become friends with domestic cats that live at the zoo. Maybe these new pals made good pillows too!

### MEERKAT

**HEIGHT** 10 to 14  
inches tall

**WEIGHT** about 1½  
pounds

**RANGE** southern  
Africa

#### A DUSTY DEFENSE

Meerkats distract predators by digging up clouds of dust.

#### FIGHT THE BITE

These mammals are immune to some snake venom.



# GUINNESS WORLD RECORDS

## SAILBOAT ON LAND

**R**acing 126.1 miles an hour across a Nevada desert, this cool wind-powered contraption became the fastest land yacht ever. Called the Ecotricity Greenbird, it seems to sail like a boat on water. But if the driver doesn't catch the 30-mile-an-hour wind just right, the land yacht might bite the dust!

—Molly Marcot



## SO MANY YO-YOs!

**"A**round the World" is probably a super-easy trick for this yo-yo master. Ben McPhee can spin 16 yo-yos simultaneously, the most on record. He starts by spinning 10 yo-yos and hanging them on hooks. The others? Two hang from each hand, two from each ear, and two are clenched between his teeth. Let's hope he doesn't get tied up in all that string.

—Angela Modany

## DOGS GET MARRIED

**W**earing a \$6,000 dress, Baby Hope Diamond the dog wasn't just a bride. She was a bride in a wedding valued at \$158,187.26, the most valuable pet wedding on record. Dog guests wore tuxedos and evening gowns, dined on a special dog chow buffet, and listened to a \$25,000 orchestra. Although the wedding expenses were donated, human guests paid up to \$250 to attend, raising money for the Humane Society of New York. That's something that the groom, Chilly the dog, can really wag his tail at. —Angela Modany





**Bet You  
Didn't  
Know!**

# 8 bold facts about colors

**1** It can take about **20 SECONDS** for a **CHAMELEON** to change color.

**2** Wearing **BLUE-TINTED SUNGLASSES** might make you **LESS HUNGRY**.

**3** **OSCAR THE GROUCH** was originally **ORANGE**.

**4** More than **6 BILLION GREEN MONOPOLY HOUSES** have been manufactured since **1935**.

**5** In parts of **ENGLAND**, having a **BLACK SHEEP** in a flock was considered **LUCKY**.

**6** **BROWN** is the most **COMMON** human eye **COLOR**.

**7** Darker-colored **FROZEN POPS** usually **MELT FASTER** than lighter ones.

**8** In ancient **CHINA**, only **EMPERORS** could wear **YELLOW**.

For more fun facts, grab a parent to watch  
*Things You Wanna Know!* [youtube.com/natgeokids](https://www.youtube.com/natgeokids)





# THIS **or** THAT?

BY JR MORTIMER  
AND NANCY CASTALDO

**CHOOSE  
THIS:**

You're  
super fast, but  
you're in  
constant danger  
of being  
squashed.

**or**

**CHOOSE  
THAT:**

You  
have a super  
sense of smell,  
but you have to  
wait for  
your dinner.

If you chose  
**THAT**







CHECK  
OUT  
THE  
BOOK!



# If you chose **THIS**



Even **SPEEDY SUPERHEROES** like the Flash might not be as fast as a **COCKROACH**. If you could move as fast as this incredible insect, you'd be able to run a hundred-yard dash in just one second! With this superpower, you could almost be in two places at once. Unfortunately, cockroaches don't have a fan club like **THE FLASH** does: They're more often the main targets of the pest-removal industry.

Speed isn't the cockroach's only superpower. These insects can live for weeks without their heads. They can breathe through holes in their bodies and survive off of stored food they'd already eaten. But without mouths, the headless bugs eventually die from a lack of food and water.

**ROACH  
FACT!**

What if you could smell a pizza from 2.5 miles away ... then had to wait hours before it was ready to eat? That's just life for a **KOMODO DRAGON**, one of the only venomous lizards on Earth. This reptile stalks its prey from up to 2.5 miles away using its super sense of **SMELL**, then attacks. But the chow isn't ready yet! The victim might get away from the fight—but not for long. The dragon's **VENOM** decreases the prey's blood pressure, prevents blood clotting, and sends the animal into shock, making it too weak to fight back. Dinner's finally served.





# AMAZING ANIMALS

BEST  
BABYSITTER  
EVER.



## Doggy Day Care

### Stansted Mountfitchet, England

Fred the Labrador retriever took a *quack* at fatherhood when he adopted nine ducklings.

After the ducklings were found wandering the grounds of Mountfitchet Castle (Fred's home), the castle's owners were worried the youngsters would struggle to survive without their mother. Good thing 10-year-old Fred was ready to be a parent! "Fred instantly took to the ducklings," castle owner Jeremy Goldsmith says. The ducklings napped in a dog bed with Fred and often climbed on his back, the same way they'd sit on top of their duck mom.

Ducklings that lose their mother sometimes become attached to the first moving thing they see, animal behavior expert Mary Burch says. "I would say the ducklings adopted Fred," she says. The ducks are grown now, but they still see Fred every day. These fuzz balls keep Fred on his paws!

—Alli Dickey





CHECK  
OUT  
THIS  
BOOK!



GREETINGS,  
ASTRONAUTS!

TWO  
HEADS  
ARE BETTER  
THAN  
ONE.



## The Tortoise and the Pair

### Wellington, South Africa

So you're hanging out, watching your pet tortoises' eggs hatch, when all of a sudden two heads poke out of one egg! That's how Noël Daniels discovered that he was the proud owner of a rare two-headed tortoise. Probably caused by abnormal cell growth, the two heads shared a body ... but both liked to eat

on their own. This terrific tortoise did get a little, well, *ahead* of itself sometimes. "Once the right head was eating and the left head saw me walk into the pen," Daniels says. "The left side of the tortoise tried to leave, but the right head was still eating. So that side wouldn't move!" —Candice Swarts

### BEAVERS

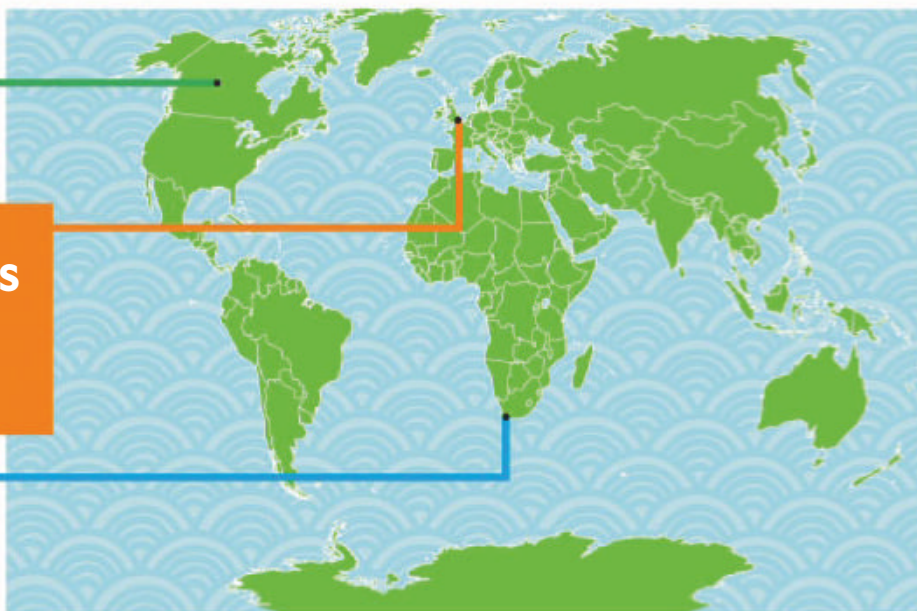
Wood Buffalo  
National Park,  
Canada

### DOG AND DUCKLINGS

Stansted  
Mountfitchet,  
England

### TORTOISE

Wellington,  
South Africa



## Beaver Dam Visible From Space

### Wood Buffalo

### National Park, Canada

You've heard of busy beavers. But these guys take the phrase to a whole new level: They built a 2,800-foot-long dam, the longest known beaver dam on Earth. It's so big it can be seen from space!

The critters' construction zone is in a remote national park accessible only by helicopter, so no one even knew the dam existed until 2010. Researcher Jean Thie accidentally discovered it while studying satellite photos for signs of climate change. Instead he spotted high water levels, dead trees, and lodges—sure signs of a dam.

The steady flow of water from the nearby mountains is a trigger that means the beavers will keep adding on to their dam. "When beavers hear water, they build," research biologist Matt Peek says. "They'll even build a dam on top of a tape recorder playing the sound of flowing water." That's something to chew on. —Jamie Kiffel-Alchek



THIS SATELITE IMAGE  
SHOWS THE BEAVER DAM  
INSIDE THE RED OUTLINE.



Welcome to the

# SPECIAL Save the Ocean! ISSUE



BY KAY BOATNER

This special **Save the Ocean** issue will help you tackle a big problem: **single-use plastic pollution**. You probably use items such as plastic water bottles and grocery bags every day. But unlike paper or food waste, **plastic doesn't decompose**, or break down into pieces that can be reused by nature. Many plastic items **end up in the ocean**, where they can **entangle animals** or make them sick.

Luckily **humans are pitching in** to save these creatures. The next 10 pages tell **five inspiring stories** about freshwater and ocean animals that have been **rescued from life-threatening encounters** with plastic. Plus you'll get **tons of tips** on how you can **reduce your plastic waste** and keep habitats healthy for all animals.

But first, **take this fun personality quiz** to see which of the rescued animals you're most like. Then dive in. It's time to **take care of our oceans**!

## PERSONALITY QUIZ

If these descriptions don't match your personality, don't worry. These questions are just for fun!

CHECK OUT MORE TIPS ON HOW  
TO KEEP OUR PLANET CLEAN.  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



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## Your ANIMAL MATCH

Pick a single-use plastic item to ditch from your daily life.

PLASTIC BOTTLES

PLASTIC CARRY-OUT CONTAINERS

PLASTIC SIX-PACK RINGS

**BOTTLENOSE DOLPHIN** Just like the bottlenose dolphin, you're known for being playful. You enjoy meeting new people and spending time in a pod, or group. Dolphins talk to each other a lot—just like you and your friends. (Well, kind of... dolphins communicate with whistles, clicks, and squawks.) **WANT MORE DOLPHINS?** Head over to **page 16** to find out how a bottlenose dolphin was rescued from plastic wrapped around its mouth and fin.

**WHITE-FACED WHISTLING DUCK** You know how to crank up the volume. Similarly, this duck's high-pitched whistling calls are hard to miss. And you're not afraid of change: New school? No prob. These ducks are also OK with exploring new places. Though typically found in the water, they're called "tree ducks" because they can sometimes be found perched in branches. **WANT MORE DUCKS?** See **page 14** to discover how a caring person saved a white-faced whistling duck that had its head stuck in a ring from a plastic bottle top.

**HARBOR SEAL** This marine mammal is big on routine, and so are you. Harbor seals spend a lot of time switching between napping in groups and hunting on the beach. Sticking to a schedule doesn't mean you're not full of surprises, though. Like harbor seals, you occasionally let your curiosity lead the way. **WANT MORE SEALS?** Check out **page 22** to see how a harbor seal pup was freed from a mass of plastic fishing nets.

**WHALE SHARK** Like the whale shark, you can be quiet and mysterious. But you're just saving your words for when they count. When you do speak up, people listen—you've got some serious leadership potential. Whale sharks are pretty impressive too; this boneless giant is the world's largest fish. **WANT MORE SHARKS?** Flip to **page 20** to learn how a whale shark was rescued after getting tangled in plastic.

**GREEN SEA TURTLE** Green sea turtles are often on the go—just like you. They migrate long distances between their feeding grounds and their nesting sites, up to 1,600 miles. That's farther than New York City is from Dallas, Texas! Though you love to travel, home is a special spot. These turtles might feel the same way. When it's time to lay their eggs, females return to the same nesting grounds where they were born. **WANT MORE TURTLES?** Head over to **page 18** to find out how a green sea turtle survived after swallowing a balloon.

**CHOOSE ONE:** Cook a big breakfast and be late for school, or grab something quick but make it on time.

EAT, OF COURSE!

Pick a single-use plastic item to ditch from your daily life.

BE ON TIME, DUH.

I'D BE AN ASTRONAUT, OBVIOUSLY.

PLASTIC BALLOONS

DESIGNING THE SPACECRAFT

PLASTIC BAGS

FIND OUT WHAT KIND OF PLANET PROTECTOR YOU ARE.  
[natgeokids.com/SaveTheEarth](http://natgeokids.com/SaveTheEarth)



SPECIAL ISSUE

# Save the Ocean!

Freshwater

## DUCK RESCUE

**A CARING HUMAN RESCUES AN INJURED BIRD FROM A PLASTIC RING.**

ALL TEXT BY ALLYSON SHAW

A white-faced whistling duck walks backward with its head between its feet. It shakes its beak, stops to rest, and shakes again. The duck's odd movements catch the attention of Glenda Maguire, who's been watching the visiting animal from her patio in South Africa. Using her camera to zoom in for a closer look, she sees a ring of white plastic—likely from a milk bottle—wrapped around the duck's mouth and neck. "It was painful to watch,"

Maguire says. She wants to help, but she knows if she tries to catch it, the wild duck will fly away and not come back to the lake.

Maguire sets out an animal trap with food pellets near the water, hoping the bird will walk inside. But the duck seems scared of the trap and later flies away. Maguire hopes that someone will save the duck before it's too late.

### RIVER TO SEA

Freshwater streams, lakes, and rivers—where animals like white-faced whistling

ducks live—are often the starting point for plastic that ends up in the ocean. In fact, about four million tons of plastic flow from rivers to the ocean each year. "On a windy

day you can see plastic bags and bottles tumbling around on the ground," says Carlie Herring, a research analyst with the National Oceanic and Atmospheric Administration. "Those items might end up in a stream, then a river, and eventually the ocean."

Polluted rivers are bad for both animals and humans. One group of researchers found hundreds of thousands of pieces of plastic in just one square mile of North America's Great Lakes, one of the world's largest freshwater systems. That includes microplastic—super-small plastic pieces

LUCKY DUCK



PLASTIC RING

1

GLENDAMAGUIRE FIRST SPOTTED THE DISTRESSED DUCK AT A LAKE NEAR HER HOME.



2

MAGUIRE TOOK THE BIRD INSIDE TO REMOVE THE PLASTIC RING STUCK AROUND ITS MOUTH AND NECK.



3

AFTER MAGUIRE REMOVED THE RING, SHE RELEASED THE DUCK BACK INTO THE WILD.



About 90 percent of seabirds eat plastic trash.

More than 40 percent of all plastic trash is single-use plastic, meaning it's used only once before it's thrown away.

When white-faced whistling ducks are alarmed, they stand up straight and freeze.

## WHITE-FACED WHISTLING DUCK

Broederstroom, South Africa

FRESHWATER WETLANDS CAN BE FOUND ALL OVER THE WORLD.

THEY MAKE UP ONLY 2.5 PERCENT OF ALL THE WATER ON EARTH—AND MOST IS IN ICE OR DEEP UNDERGROUND.



Freshwater wetlands

## POLLUTION SOLUTION

### MR. TRASH WHEEL

High-heeled shoes, footballs, plastic water bottles—Mr. Trash Wheel “eats” them all. This googly-eyed machine sits at the end of the 18-mile-long Jones Falls stream in Baltimore, Maryland. The water’s current turns the barge’s wheel so it scoops up litter and places it into a Dumpster. When the Dumpster is full, a boat tows it away and a new Dumpster replaces it. Later the trash is burned to power nearby homes.

Other cities are considering trash wheels too, according to Adam Lindquist, who oversees the wheel as director of the Waterfront Partnership’s Healthy Harbor Initiative. But Lindquist hopes future versions won’t need to consume as much junk: “Our goal is to put Mr. Trash Wheel on a diet!”



about the size of the period at the end of this sentence. According to Herring, microplastics have been found in drinking water and may hurt wildlife like the white-faced whistling duck, which could mistake the plastic for food.

### TAKING FLIGHT

After two days, the little duck returns to the lake. But it’s clearly in trouble. “It was just hanging its head, as if it had given up,” Maguire says.

But finally, three days later, the duck eventually walks into Maguire’s cage and—*snap!*—she pulls a string to close the door. After retrieving the bird, she wraps a towel around it and carefully cuts the plastic loop off before releasing the duck back into the wild.

The exhausted duck spends two days resting and eating nearby as its flock comes and goes. Eventually the duck is ready to fly away and return to its family.

FIND OUT HOW TO REDUCE YOUR PLASTIC USE.  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



SPECIAL ISSUE

# Save the Ocean!

Open Ocean

# DOLPHIN RESCUE

**DIVERS TAKE ACTION TO SAVE A DOLPHIN FROM FISHING LINE.**

A dozen reef manta rays swim in a group in the open ocean near Hawaii, scooping up plankton in their mouths. Divers direct their lights toward the scene, watching the rays. Amid the action, a male bottlenose dolphin swims slowly through the group. The dolphin catches the divers' attention. He's alone, which is unusual since most dolphins travel in small pods, plus he doesn't seem to

be afraid of the noises that the divers are making.

The dolphin passes back and forth in front of the divers a few times, as if to get their attention. "We usually don't interact with wild animals," underwater camera operator Martina Wing says. "But this dolphin was trying to show us that he had a problem." The dolphin, later given the name Notch, is tightly tangled in fishing line.

## OPEN-OCEAN TRASH

Bottlenose dolphins live in almost all of the world's oceans. Plastic can be found at every level of every ocean. Light plastic floats on the ocean's surface, while heavier plastic typically sinks to the very bottom—but a lot of plastic floats somewhere in the middle.

This garbage is carried through the oceans by wind

and water currents, often ending up swirling in one of five garbage patches around the world created by circular ocean currents called gyres. The biggest of these is the Great Pacific Garbage Patch, which floats between Hawaii and California and contains a stretch of waste roughly the size of Texas. Many of the items in this garbage patch are microplastics, tiny pieces of plastic no bigger than a sesame seed. But by weight, the most common item in the garbage patch is abandoned fishing gear—the stuff that's entangling Notch.

## SNIP AND SAVE



DIVER KELLER LAROS USES SCISSORS TO CAREFULLY REMOVE PLASTIC FISHING LINE AND A HOOK LODGED IN THE DOLPHIN'S LEFT FIN.

## SWIMMING FREE

The divers look closer and see that Notch has a hook



Bottlenose dolphins shed their outermost layer of skin every two hours.

The Great Pacific Garbage Patch is estimated to have about 1.8 trillion pieces of plastic in it.

Experts think 8.8 million tons of plastic enter the ocean every year.

THE OCEAN COVERS MORE THAN 70 PERCENT OF EARTH'S SURFACE. ABOUT 97 PERCENT OF THE PLANET'S WATER IS IN THE OCEAN.

## BOTTLENOSE DOLPHIN

Off the coast of Kailua-Kona, Hawaii



## POLLUTION SOLUTION

### CATCH THE TRASH

How do you scoop up a lot of trash? With a really big contraption. Like, *really* big. The Ocean Cleanup system is a 2,000-foot-long U-shaped pipe with an attached net-like skirt. With plans to be afloat in the Pacific Ocean by mid-2019, the system uses ocean currents and wind to gather up trash from the surface down to 10 feet below the structure. Eventually boats will come to collect the trash from the skirt and bring it back to shore, where it can be recycled. The Ocean Cleanup organization hopes to launch 60 more sea sweepers around the world by 2020.



FLOATING PLASTIC COLLECTOR

stuck in his left fin and fishing line wrapped around his mouth. A diver tries to use his bare hands to unwind the plastic line from the dolphin's body, but the string is hard to remove. Luckily, the diver has a pair of scissors and uses them to snip the line. The dolphin waits patiently for the diver to carefully remove the hook next. "He seemed so relieved when he was finally free," Wing says.

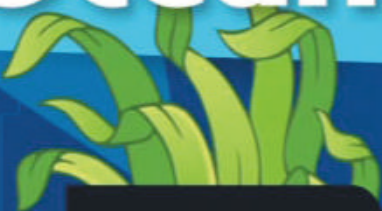
A year later, a group of snorkelers spots a healthy-looking Notch swimming with a potential mate. "I'm so glad we were able to rescue him," Wing says. "And now maybe he's going to have a family of his own."

SEE PICS OF HOW ANIMALS CAN BE AFFECTED BY PLASTIC.  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



SPECIAL ISSUE

# Save the Ocean!



Seagrass

# SEA TURTLE RESCUE

**RESCUERS SWOOP IN TO HELP A SEA TURTLE THAT SWALLOWED A BALLOON.**

A young green sea turtle bobs along the surface of the water off the coast of Florida. Young turtles usually don't hang out at the surface—that's where predators can easily spot them, plus their food is deeper underwater. But something is keeping this foot-long turtle from diving.

Luckily, rescuers spot the struggling turtle and take it back to the Clearwater Marine Aquarium, where they name it Chex. Staff place Chex in a shallow kiddie pool so that the turtle won't waste energy trying to dive. They test Chex's

blood and run x-rays but can't figure out what's wrong. "Then one day Chex started pooping out something weird," biologist Lauren Bell says. The weird object turns out to be a purple balloon and an attached string.

## SOS (SAVE OUR SEAGRASS!)

Sea turtles often mistake floating trash for food. "Even some *people* can't tell the difference between a plastic grocery bag and a jellyfish in the water," Bell says. But plastic doesn't just hurt sea turtles: It hurts their habitat.

Green sea turtles often hang out close to the shore near seagrass, one of their favorite snacks. Plastic trash left on the beach or coming from rivers that empty into the sea often ends up in this habitat. When it settles on the seagrass, the rubbish can smother the grass, causing it to die. That can mean trouble for green sea turtles like Chex that rely on the seagrass for food or shelter.

## BYE, BALLOON

After several days at the aquarium, Chex starts to

improve as the balloon makes its way through the turtle's digestive system. Chex eventually passes the entire balloon, plus a two-foot-long string. A few months later,

## TURTLE POWER



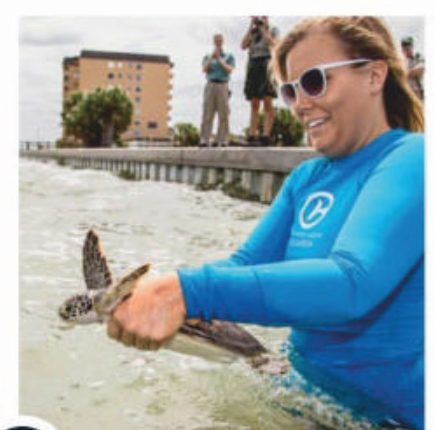
BALLOON STRING

PIECE OF BALLOON

**1** CHEX THE GREEN SEA TURTLE PROBABLY MISTOOK A TWO-FOOT-LONG BALLOON STRING FOR FOOD.



**2** CHEX RECOVERED AT THE CLEARWATER MARINE AQUARIUM, SPENDING LOTS OF TIME IN A KIDDIE POOL. ONCE THE TURTLE STARTED EATING SOLID FOODS AGAIN, RESCUERS DECIDED CHEX WAS READY TO RETURN TO THE OCEAN.



**3** BIOLOGIST LAUREN BELL PREPARES TO RELEASE THE LITTLE TURTLE BACK INTO THE SEA.



It would take six 10-year-olds to weigh as much as an average-size green sea turtle.

## GREEN SEA TURTLE

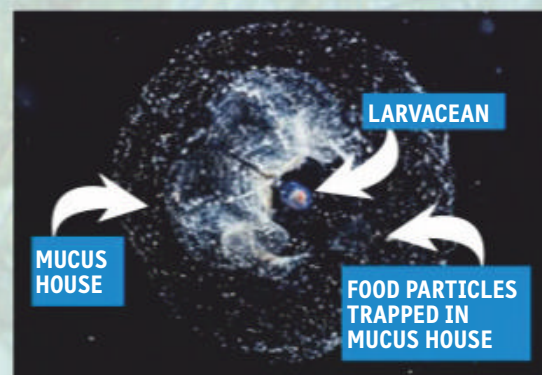
Redington Beach, Florida



## POLLUTION SOLUTION

### PLASTIC PREDATOR

The ocean is full of trillions of pieces of trash called microplastics that are smaller than the period at the end of this sentence—which makes them really hard to clean up. But the solution might be in tadpole-like creatures called larvaceans (lar-VAY-shuns). These marine animals eat by filtering tiny food particles out of the water and through their bodies. The particles are first trapped in what's called a mucus house—a thin, see-through bubble of, well, mucus, that surrounds the larvacean as it travels. Scientists are studying this behavior to see if a similar process could pull harmful microplastics out of the water.



after aquarium staff have successfully introduced solid food back into Chex's diet, rescuers declare the turtle is ready to return to the sea.

Bell stands hip deep in the waves as another staff member hands Chex to her. She carefully places the little turtle in the water and watches it paddle away. "Chex was like, 'Oh, there's the ocean! OK, bye!'" Bell says. Chex's rescue is worth celebrating ... but maybe without the party balloons.

A recent study found that over half of all sea turtles have eaten plastic in their lifetime.

During one three-hour cleanup on a beach in Virginia, volunteers collected over 900 balloons.

**MAKE PLASTIC-FREE PARTY DECORATIONS!**  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



SPECIAL ISSUE

# Save the Ocean!



## Coral Reefs

# WHALE SHARK RESCUE

## BRAVE SWIMMERS COME TO THE AID OF A WHALE SHARK ENTANGLED IN PLASTIC.

A young whale shark swims slowly through a coral reef off the coast of the Philippines in Southeast Asia. At first, divers are thrilled to spot the nearly 13-foot-long fish. But as it moves closer, they see that the shark has a rope and a plastic net wrapped around its midsection, blocking its gills and cutting into its fins and back. “It looked like a ghost floating through the coral reef,” diver Pierlo Pablo says.

If they’re not removed, the netting and rope will become

tighter as the whale shark grows. The already exhausted animal won’t have the strength to find food, or it might become an easy meal for other sharks. So the divers give the whale shark a name—Spooky—and come up with a plan to save it.

### REEFS IN TROUBLE

Whale sharks aren’t the only tropical ocean animals affected by plastic. Corals—the animals that create coral reefs—are in danger too. Living corals can become sick when a piece of

plastic settles on a reef. Scientists think the plastic tears the corals’ skin, allowing harmful bacteria to get in.

Corals can also become entangled in plastic, just like Spooky was. “If a fishing net settles on a reef and a storm comes through, the nets can break off pieces of the coral,” says Carlie Herring, a research analyst with the National Oceanic and Atmospheric Administration. But we need corals to keep the ocean healthy: It’s estimated that about a quarter of all

marine species—including whale sharks like Spooky—depend on coral reefs for their survival.

### SPOOKY CELEBRATION

Back at the coral reef, divers must act quickly to save Spooky. The whale shark becomes still as one of the divers swims under the animal and starts to carefully cut the rope with a knife. “It was like the shark knew we were trying

## A WHALE OF A RESCUE



**1** DIVERS FOUND SPOOKY THE WHALE SHARK COVERED IN PLASTIC NETTING AND ROPE IN THE TUBBATAHA REEF OFF THE COAST OF THE PHILIPPINES.



**2** DIVER JONATHAN TERNO EXAMINES THE NETTING WRAPPED AROUND SPOOKY IN AN ATTEMPT TO FIGURE OUT HOW TO FREE THE WHALE SHARK.

Whale sharks aren’t whales—but they are the world’s largest fish.





A minke whale was found off the coast of France with over 1,700 pounds of plastic bags in its stomach in 2017.

## POLLUTION SOLUTION

### TRAP THE TRASH

Normally you toss your trash in a bin, but this bin grabs its own trash! The Seabin is a waste basket that bobs in the water, sucking in floating trash on and below the water's surface from up to 15 feet away. Workers come to check the bin every day, sorting out the recyclable plastic from the rest of the junk. Each receptacle collects about three pounds of trash every day. The company hopes to install over 5,000 Seabins in marinas and harbors around the world over the course of the next few years—which means we might be seeing a lot less floating trash soon!



FLOATING SEABIN

### WHALE SHARK Tubbataha Reef



Coral reefs

to help it," Pablo says. The diver moves slowly, careful not to cut into the shark's skin. After a few minutes, the diver is able to unwind the rope and the trapped net from around Spooky's body.

Finally free, Spooky moves toward the dive boat and floats alongside the divers for an hour before swimming away. "We felt like he was saying thank you," Pablo says. "I hope Spooky is still out there somewhere—eating, swimming, and exploring."



**3** AFTER DIVERS CUT AWAY THE ROPE AND NETTING, SPOOKY IS FREE. THE WHALE SHARK FLOATED ALONGSIDE ITS RESCUERS FOR AN HOUR BEFORE SWIMMING AWAY.

More than 705,000 tons of fishing nets enter the ocean every year.

GRAB A PARENT TO WATCH INJURED OCEAN ANIMALS BEING RESCUED IN THE VIDEO SERIES *WHAT SAM SEES*.  
[youtube.com/natgeokids](https://www.youtube.com/natgeokids)



SPECIAL ISSUE

# Save the Ocean!

Polar Regions

# SEAL

# RESCUE

## FISHERMEN SCOOP UP A HARBOR SEAL TRAPPED IN PLASTIC NETS.

A harbor seal pup floats in the water off the coast of Maine. The young seal has recently left its mother's care—and it's already in trouble. The little seal has a massive tangle of fishing nets wrapped around its body. Without help, the pup will not escape. Luckily a fishing boat passes by, and the people on board prepare to rescue the helpless animal.

### POLAR PROBLEMS

Harbor seals live in coastal waters in the Northern Hemisphere, which includes polar habitats in the Arctic. It might seem like this region—and southern polar habitats around Antarctica—would be plastic free because few people live there. But ocean currents carry the trash to these regions, where it has nowhere to go.

"The ocean is the ultimate transporter on our planet," environmental engineer Jenna Jambeck says. "Once

plastic that floats enters the ocean, the currents can take it all over the world, including to the Arctic." In fact, one study of the Svalbard Islands near the North Pole found polar bears and reindeer entangled in plastic.

Scientists have also discovered microplastics frozen in Arctic sea ice: One study shows 12,000 particles of microplastic in one liter—or about four cups—of sea ice. "When even the sea ice has microplastic—well, then pollution is everywhere," says Carlie Herring, a research analyst with the National Oceanic and Atmospheric Administration. Experts worry that as the ice caps melt, they'll release these microplastics into the seas, putting more animals like the harbor seal pup in danger.

### SAVED SEAL

The fishermen quickly scoop the seal out of the water and onto their boat. One of the fishermen holds the seal in

place, using a knife to slowly cut the thick netting off the animal, one rope at a time. The seal is still at first but tries to wiggle away as it feels the net loosen. The fishermen keep the marine mammal calm for just a few more minutes until all the rope is off.

Finally the animal is no longer trapped in plastic. A fisherman gently lowers the pup into the water. The uninjured seal floats for a few seconds as it gets used to its surroundings. Then it gracefully swims away.

### SEAL ON BOARD



**1** FISHERMEN PULL A HARBOR SEAL ABOARD THEIR SHIP TO FREE IT FROM FISHING NETS.



Experts think just one fishing net can entangle up to 40 animals.

In the northeast United States, about 880 seals were accidentally caught in fishing nets over a seven-year period.

Harbor seals can't rotate their hind flippers forward to walk on land—they can only scoot forward on their bellies.

**HARBOR SEAL**  
Off the coast of  
Owls Head, Maine



## POLLUTION SOLUTION

### NET CARPETS

Kick off your shoes and take a seat on the ... fishing nets? An initiative called Net-Works helps fishing communities in the Philippines, a country in Southeast Asia, and Cameroon, a country in Africa, to collect abandoned fishing nets from the ocean that endanger marine life. The nets are then recycled and made into carpet. The group has already gathered enough nets to go around the world four times!



2

THE SCARED SEAL ATTEMPTS TO ESCAPE BEFORE THE ROPES ARE COMPLETELY REMOVED.



3

THE SEAL IS FINALLY ROPE-FREE. ONE OF THE FISHERMEN LOWERS THE ANIMAL BACK INTO ITS OCEAN HOME.

**MAKE PLASTIC-FREE STRAWS!**  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



SPECIAL ISSUE

# Save the Ocean!

# 35

## WAYS YOU CAN SAVE THE OCEAN FROM PLASTIC

BY ALLYSON SHAW

You probably use plastic every day, but some types can cause major problems for wildlife. Big pieces can entangle animals, and smaller bits can make them sick if accidentally eaten.

Scientists estimate that about 8.8 million tons of plastic enter the ocean every year. But you can do so much to help solve this problem. Follow these tips to reduce the amount of single-use plastic you use, as well as take care of the plastic you already have. Together we can protect ocean animals and keep Earth clean!

Straws, grocery bags, and water bottles are all examples of **single-use plastic**—items that most people use only once and then throw away.

EARN A **PLANET PROTECTOR CERTIFICATE!**  
[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)

1

**CHOOSE A REUSABLE STRAW** and bring it to restaurants and on car trips. You can pick between bendy silicone, durable metal, smooth glass, or natural bamboo.



2

**GIVE YOUR TEACHER HOMEMADE COOKIES** as a thank-you gift instead of plastic knickknacks.



3

**SOAK IN A TUB** of bubbles made from a bath bomb instead of the bottled stuff.



4

Ask your fave pizza place to **LEAVE OUT THE LITTLE PLASTIC TABLE** in your delivery box.

5

**SPARKLE WITH NATURAL GLITTER** made from eucalyptus plants. (Regular glitter is just tiny pieces of plastic.)



6

Make sure your plastic **BEACH TOYS** don't get washed away by the waves.







7

Carry a bag with a **REUSABLE WATER BOTTLE**, cup, and utensils so you can skip the plastic stuff wherever you go.



8

**GET CRAFTY** with crayons and colored pencils instead of markers.

9

## FISH AROUND

Abandoned plastic fishing supplies, called ghost nets, often entangle ocean animals. You can help by being careful about the fish you choose to eat. Online guides like Seafood Watch investigate the use of dangerous fishing practices to give fish a grade. Try to eat only the best choices, and leave the rest off your plate.



10

Bring your own **REUSABLE BAG** to parties and stores to stash your haul.



## PROJECT PLASTIC

You can't avoid plastic all the time, so here's how to keep the stuff you have from harming the environment.

11

Don't put garbage on top of an overflowing trash can. It'll likely be blown into animals' habitats.

12

Never leave behind fishing gear, especially fishing lines. That way they won't entangle animals.

13

Swap plastic toys with your friends instead of asking for brand-new things.

14

Take old electronics with plastic pieces to a recycling station or back to an electronics store instead of putting it in the regular trash. (Make sure the store accepts the item first.)

15

Give single-use plastic a new job, like using newspaper sleeves to pick up pet poo.

16

Use junk mail and old newspapers instead of bubbled plastic to **PAD BREAKABLE STUFF**.



# MAKE NOISE

If you *really* want to make an impact, ask businesses and governments to get involved too.

- 17 Does your favorite restaurant or ice-cream shop offer plastic straws and spoons? Ask an adult to help you reach out to these businesses about swapping the items for paper or plant-based options. Learn how online. [natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)
- 18 Report plastic litter to your local government. By tracking the items people see most often, the government might change laws about trash.
- 19 Send your used plastic food wrappers back to the company with a letter asking them to change the packaging.
- 20 Ask your teacher to help you create a plastic project in your classroom. Start by recording all the plastic your class throws away in one week, then talk about ways to reduce what you see. Get more plastic-free classroom ideas online. [natgeokids.com/april](http://natgeokids.com/april)
- 21 Send a letter, postcard, or drawing to your local representative or even the president asking them to do something about plastic pollution.

22

Make a sandwich out of **FRESH BREAD FROM A BAKERY** instead of packaged grocery store bread.

25

Order your **ICE-CREAM SCOOPS** served in a cone instead of a cup. No plastic spoon needed!

23

Give your friends **PLASTIC-FREE GIFTS** like homemade treats, sidewalk chalk, or movie tickets.

24

Bring your lunch in a reusable bag, and wrap your sandwich in a pouch made of **CLOTH, PAPER, OR BEESWAX**.

26

**TO FRESHEN UP A STINKY ROOM**, place a bar of soap in your laundry hamper and spritz your shoes and sheets with white vinegar instead of using plastic plug-ins or spray bottles.



## RECYCLE RIGHT

Experts estimate that only about 9 percent of the world's plastic gets recycled. Follow these steps to make sure your local recycling plant can accept the plastic in your bin.

27

Decorate for a **BIRTHDAY BASH** with colorful banners, streamers, paper confetti, and pom-poms instead of balloons.

28

Get **SQUEAKY CLEAN** with a bar of soap instead of bottled liquid wash.

29

Instead of packaged treats, snack on **STOVETOP POPCORN**, nuts, trail mix, cereal, and candies bought from the bulk-foods section of your grocery store (and gathered in reusable bags).

Trying to reduce the amount of plastic that you use can feel overwhelming. It's OK if you can't do everything—just getting started is the important part.

30

Sip store-bought drinks out of a **CAN INSTEAD OF A PLASTIC BOTTLE**. Even better? Ask your parents to buy it in a cardboard case instead of a plastic six-pack ring.

31

Visit your city's website to learn what your local recycling plant can take.

32

Clean and dry your recyclables. (If items are covered in food and grease, they might be sent to the landfill instead.)

33

Screw the lids back on containers like soda bottles, shampoo bottles, and mouthwash containers to ensure that the lids get recycled too.

34

Put all of your items into the recycling bin separately, not in bags or containers.

35

Plastic grocery bags, bubbled plastic, and Styrofoam can gum up the sorting machines, so keep these items out of the recycling bin. Instead, take Styrofoam packing peanuts to a mailing center to be reused, and bring the rest to the grocery store to be recycled separately.





# FUN

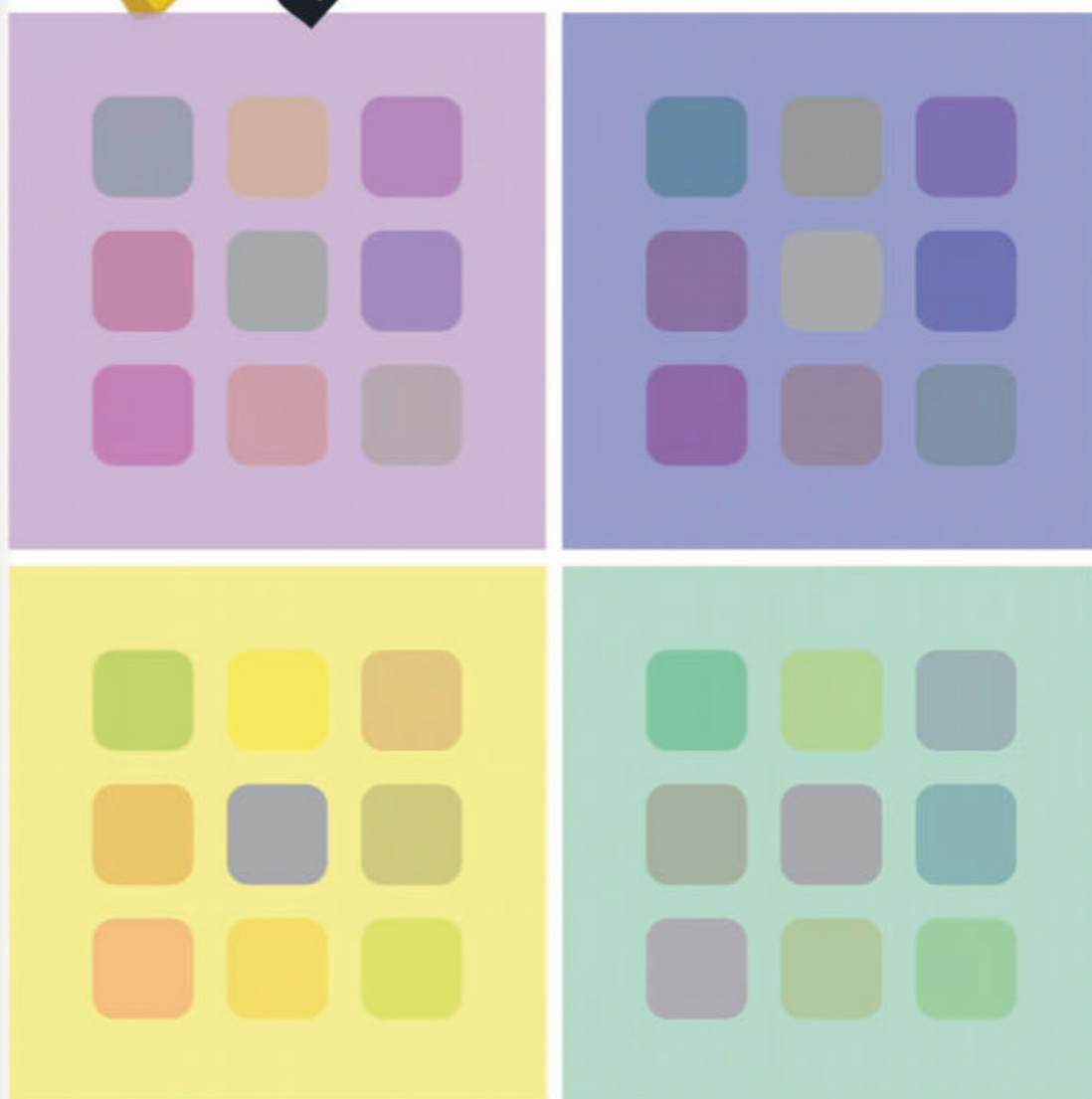
# STUFF

GAMES,  
LAUGHS,  
AND LOTS  
TO DO!

## Brain Games

Trick your noodle with these mind-bending optical illusions.

TEXT AND PUZZLES BY  
GARETH MOORE



### COLOR CONFUSION

If you think that the center tiles of each box are green, yellow, blue, and pink, think again. Each center tile is actually gray—just like the gray box below. To check, poke a small hole in a piece of scrap paper and place it over the page so you can see the center tiles without the surrounding colors.

#### BEHIND THE BRAIN

You know how an apple looks red whether it's in a park or a cupboard? That's because your brain can adjust to see the same color no matter how much natural light is shining on the apple. But sometimes brains get confused. In the four boxes above, your brain thinks that *colored* light is shining on each box's tiles. The result? Your brain doesn't see some tile colors correctly.

For instance, in the top left box, your brain thinks a pink light is shining on the nine tiles, which makes it see the gray box as green. Why? Because when you combine pink and green, you get gray. So when your brain tries to adjust for the "pink light" to see the gray box, it overcorrects and shows a complementary color.



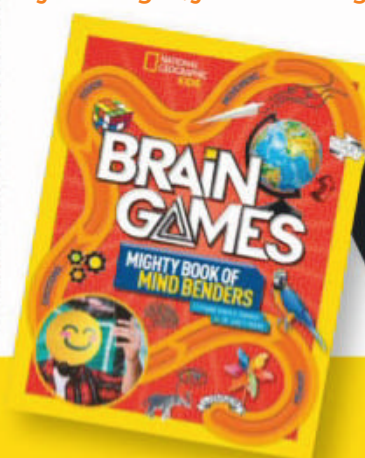
### BRIGHT LIGHT

Stare at the center of this cartoon bulb for 20 seconds and then quickly look at a blank wall surface that isn't too far away. You should see a glowing light bulb!



#### BEHIND THE BRAIN

After staring at the same thing for a while, the color receptors in your eyes (cells that tell your brain what color you're seeing) lose some sensitivity to that color. When you look away, the *other* color receptors are working extra hard to make up for the lost hue, showing you the negative for each color: Since the negative of blue light is yellow light, you see a bright yellow bulb.



CHECK  
OUT  
THE  
BOOK!



# Just Joking

**KNOCK, KNOCK.**

Who's there?  
Dinosaur.  
Dinosaur who?  
Dinosaur  
because he fell  
down!

**YOU'VE  
GOT TO BE  
JOKING ...**

**Q**

What do  
patriotic  
apes wave  
on Flag  
Day?



**A**

Star-  
spangled  
bananas



**Q**

What  
happened  
when 500  
hares got  
loose in  
the center  
of town?



**A**

The police  
had to  
comb  
the area.

**Q**

What do you  
call a very  
popular  
perfume?



**A**

A best smeller

**TONGUE  
TWISTER**

Say this fast three times:  
**Six slick sightseers click.**



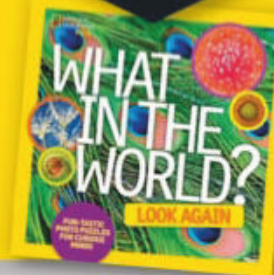
**CHECK  
OUT  
THE  
BOOK!**





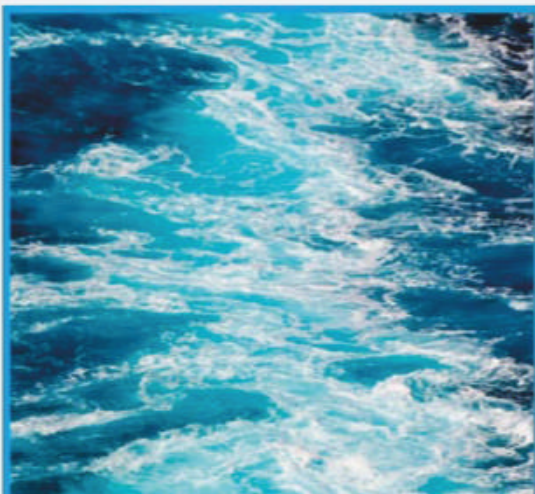
# WHAT IN THE WORLD?

CHECK OUT  
THE BOOK!



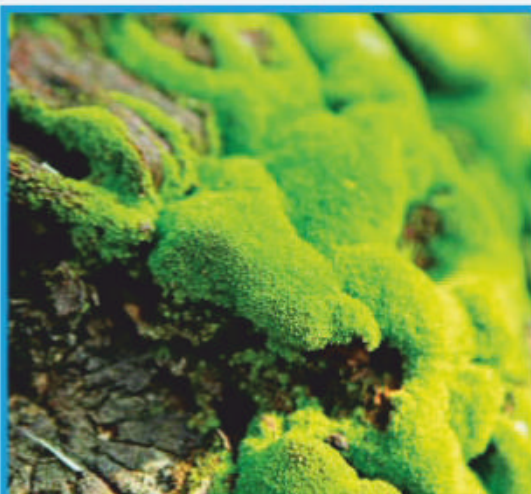
## DOWN TO EARTH

These photos show close-up and faraway views of patterns and textures in nature. Unscramble the letters to identify what's in each picture. **ANSWERS ON PAGE 35**



EVSWA

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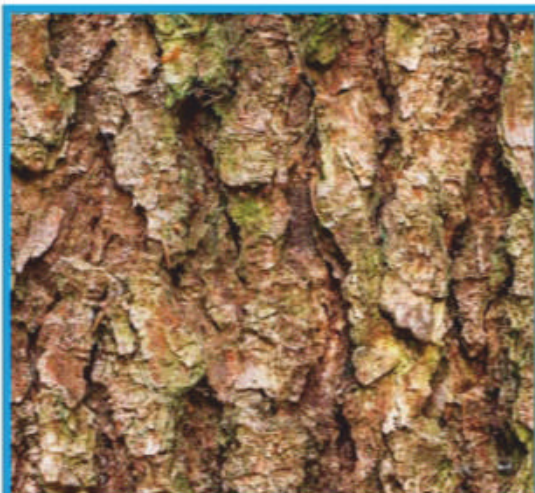
OSMS

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BUGLIBN UDM

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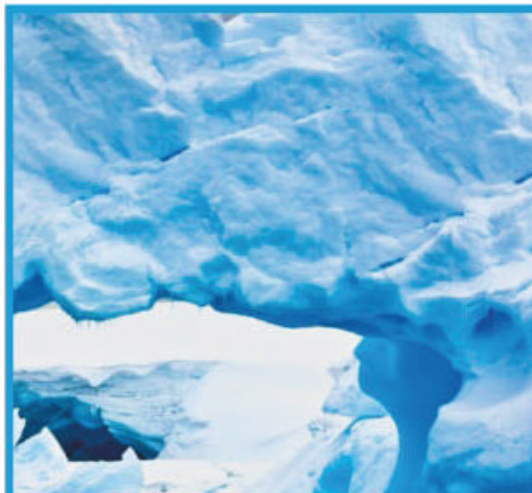
RETE KBRA

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VAAL

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GCBEERI

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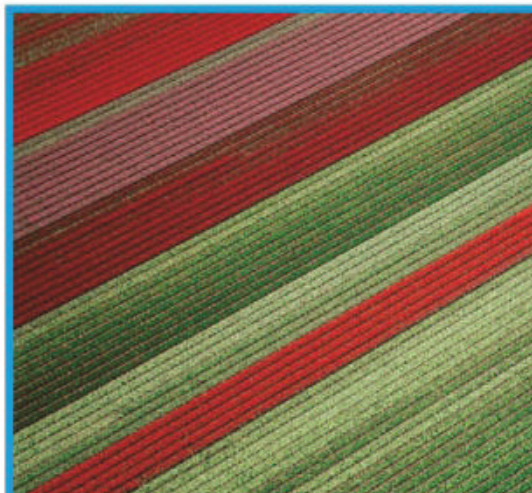
SWDAEEE

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ADSN UNED

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FELRWO IDLEF

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TOP ROW (LEFT TO RIGHT): MEUNIERD / SHUTTERSTOCK; LEUNGCHOPAN / SHUTTERSTOCK; PAUL SOUDERS / WORLDPHOTO. MIDDLE ROW (LEFT TO RIGHT): CARSTEN REISINGER / SHUTTERSTOCK; STOCKBYTE / GETTY IMAGES; VOLODYMYR GOINYK / SHUTTERSTOCK. BOTTOM ROW (LEFT TO RIGHT): JURAJ KOVAC / SHUTTERSTOCK; VIKTORIYA / SHUTTERSTOCK; FRANS LEMMENS / GETTY IMAGES.



## WATER WORLD

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.

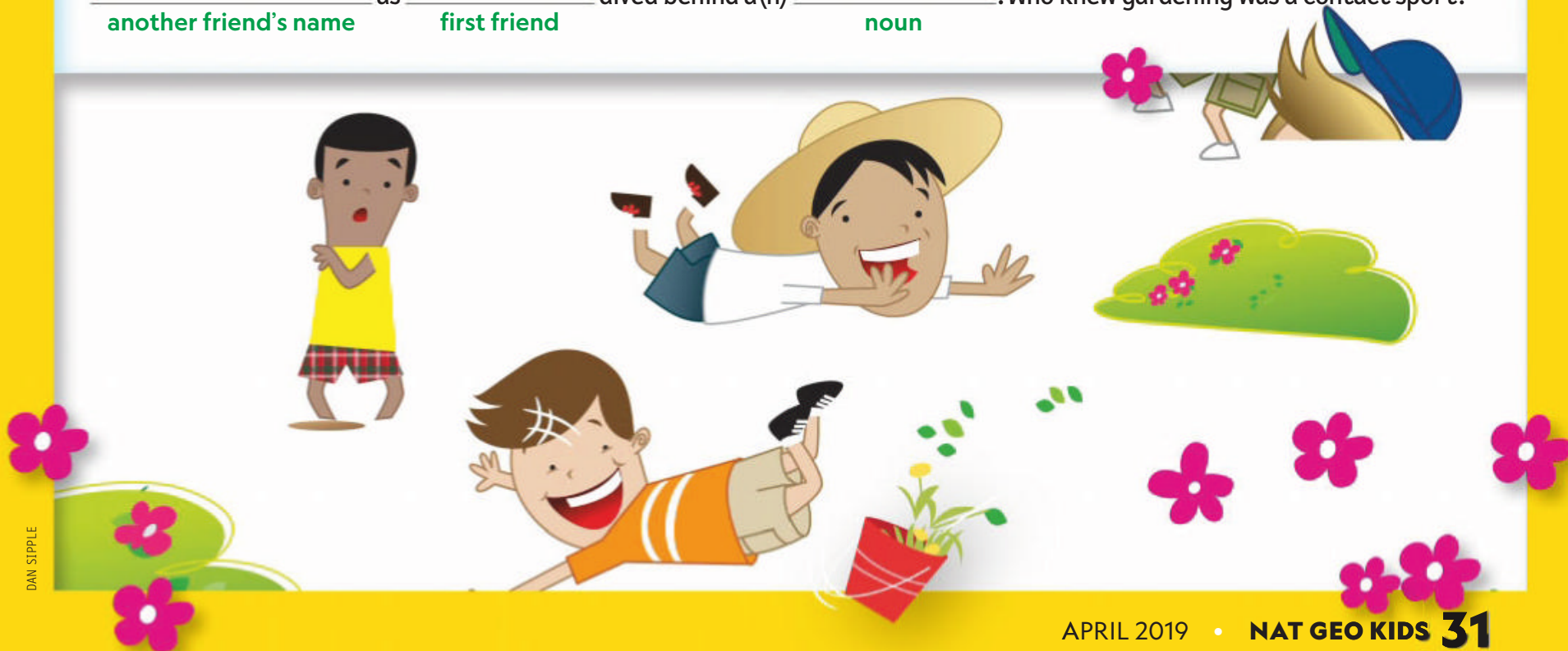
BY SALLY KING

PLAY MORE FUNNY FILL-IN!

[natgeokids.com/ffi](http://natgeokids.com/ffi)



My friends and I have the \_\_\_\_\_ job \_\_\_\_\_ gardens for Mrs. Johnson, the \_\_\_\_\_  
 lady who lives down the \_\_\_\_\_. One day, while \_\_\_\_\_ pulled \_\_\_\_\_ and  
 \_\_\_\_\_ the lawn, I watered the \_\_\_\_\_. Then I had a(n)  
 \_\_\_\_\_ idea. Wouldn't it be more fun to water my *friends* instead? But just as I turned the hose on my pals,  
 Mrs. Johnson \_\_\_\_\_ into the path of the water spray—and got \_\_\_\_\_. My friends and I  
 froze. Then to our surprise, she yelled, “\_\_\_\_\_ fight!” She pulled a water \_\_\_\_\_ from her  
 back pocket and squirted my \_\_\_\_\_. Then she aimed another \_\_\_\_\_-shaped \_\_\_\_\_ at  
 \_\_\_\_\_ as \_\_\_\_\_ dived behind a(n) \_\_\_\_\_. Who knew gardening was a contact sport?





# EXPLORER ACADEMY

In the new book *Explorer Academy: The Falcon's Feather*, 12-year-old Cruz Coronado breaks secret codes in order to fight dangerous villains and solve mysteries. Test your own skills by cracking the code on this page, then check out more about the book at [ExplorerAcademy.com](http://ExplorerAcademy.com).

TEXT AND PUZZLE BY GARETH MOORE

## THE CODE: IRSA

Over the phone, it can be hard to hear the difference between letters like *b* and *d*, or *m* and *n*. So pilots, police officers, and military organizations use the International Radiotelephony Spelling Alphabet (IRSA) to spell words clearly.

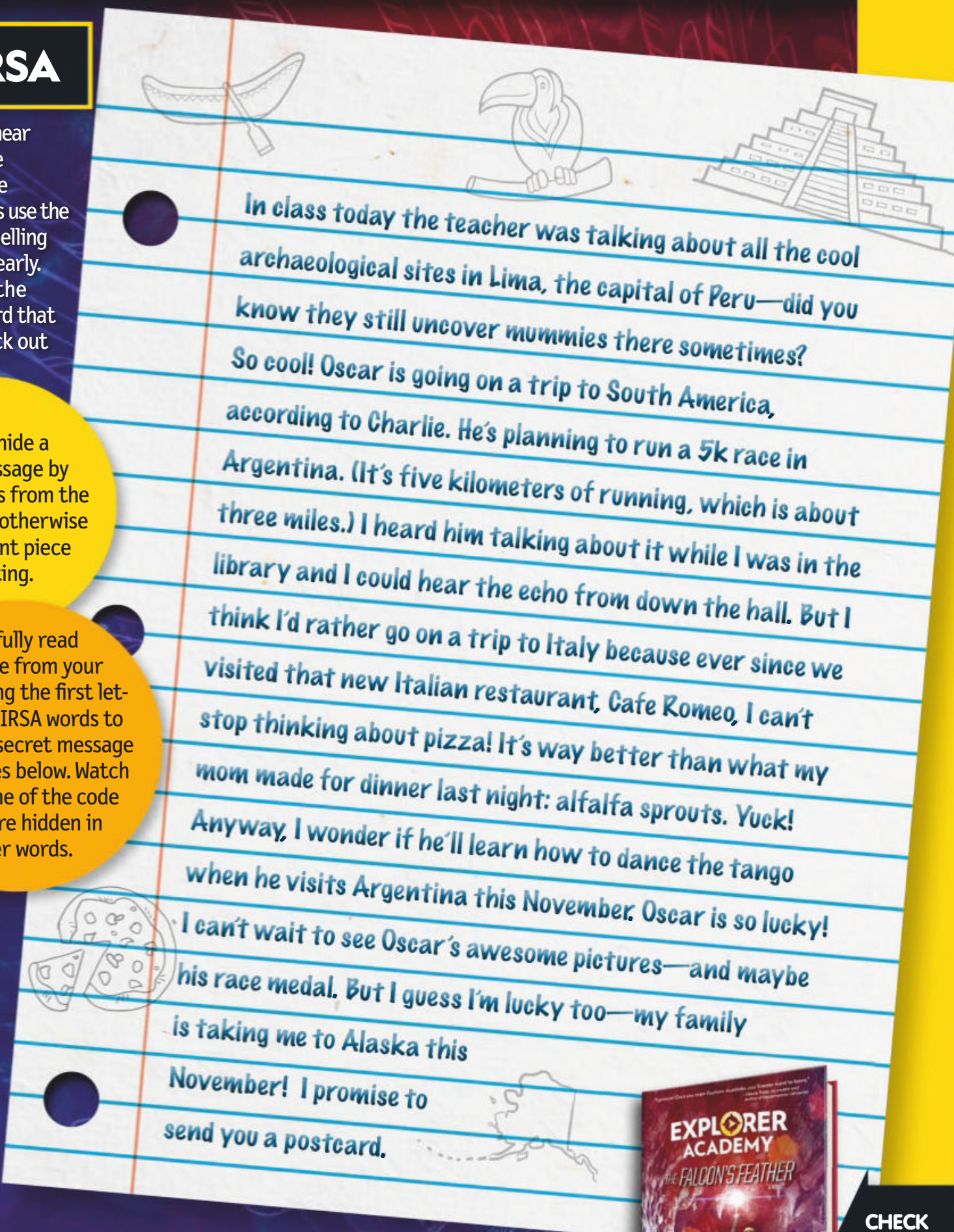
In this code, each letter of the alphabet is represented by a word that starts with the same letter. Check out the IRSA below.

### IRSA

- A** Alfa
- B** Bravo
- C** Charlie
- D** Delta
- E** Echo
- F** Foxtrot
- G** Golf
- H** Hotel
- I** India
- J** Juliet
- K** Kilo
- L** Lima
- M** Mike
- N** November
- O** Oscar
- P** Papa
- Q** Quebec
- R** Romeo
- S** Sierra
- T** Tango
- U** Uniform
- V** Victor
- W** William
- X** X-ray
- Y** Yankee
- Z** Zulu

You can hide a secret message by placing words from the IRSA into an otherwise unimportant piece of writing.

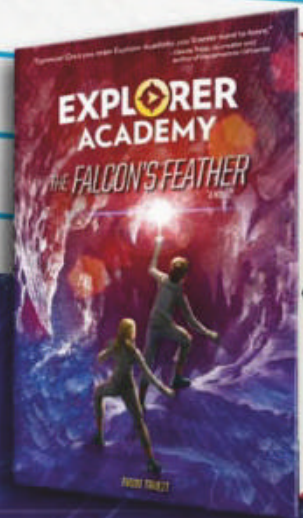
Carefully read this note from your friend, using the first letter of the IRSA words to spell out a secret message in the boxes below. Watch out—some of the code words are hidden in other words.



**CRACK  
THIS  
CODE!**


**BREAK MORE CODES!**  
[ExplorerAcademy.com](http://ExplorerAcademy.com)

ANSWER ON PAGE 35



**CHECK  
OUT  
THE  
BOOK!**



### POM-POM PUFFS

Help keep the Earth healthy by ditching single-use plastic items. This month, decorate your next party with paper pom-pom balls instead of balloons.

Why? Balloons released into the air or left outside can end up in the ocean, where they might entangle animals or be mistaken for food.

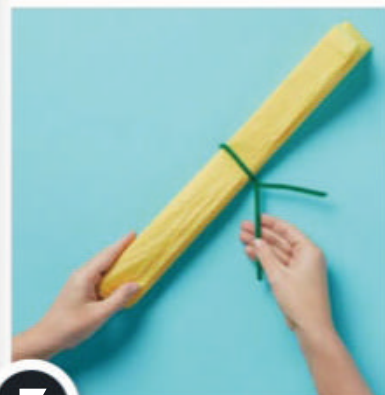
#### MATERIALS

- 8 sheets of equal-size tissue paper (Bigger tissue paper will make bigger pom-poms.)
- 1 craft pipe cleaner
- Scissors
- String (optional)

#### STEPS

**1** Stack 8 sheets of tissue paper together. (You can use the same color or mix it up.)

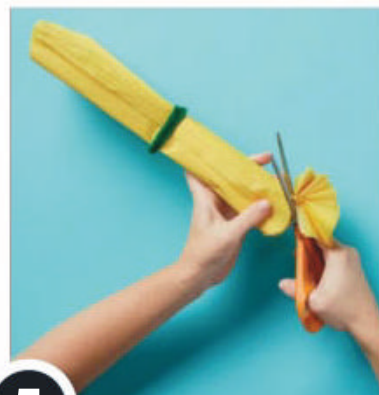
**2** Fold the tissue paper back and forth in 1-inch sections like an accordion. Press each fold firmly.



**3** Wrap the pipe cleaner around the center of the folded tissue-paper stack, then twist the pipe cleaner to secure it.



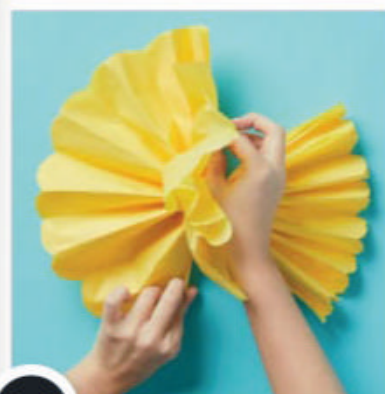
**4** Trim the pipe cleaner with scissors, then wrap the end of the pipe cleaner around itself so the wire doesn't poke out.



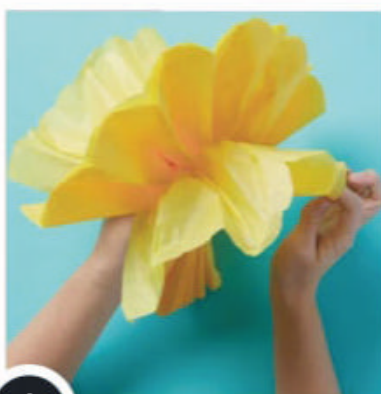
**5** Cut both ends of the tissue-paper stack into rounded, pointed, or frilly shapes.



**6** Flip the tissue-paper stack on its side.



**7** Separate each layer of tissue paper one at a time.



**8** Pull the layers up and toward the center.

**9** To hang your pom-pom, tie a piece of string to the center of the pipe cleaner.

#### PLANET PROTECTOR TIP

Instead of releasing a balloon to make a wish, blow out candles.



Keep the party going with other ideas on throwing a plastic-free bash. Then take a Planet Protector pledge and find more Earth-saving tips!

[natgeokids.com/KidsVsPlastic](http://natgeokids.com/KidsVsPlastic)



# ARTZONE

## OCEAN ANIMALS

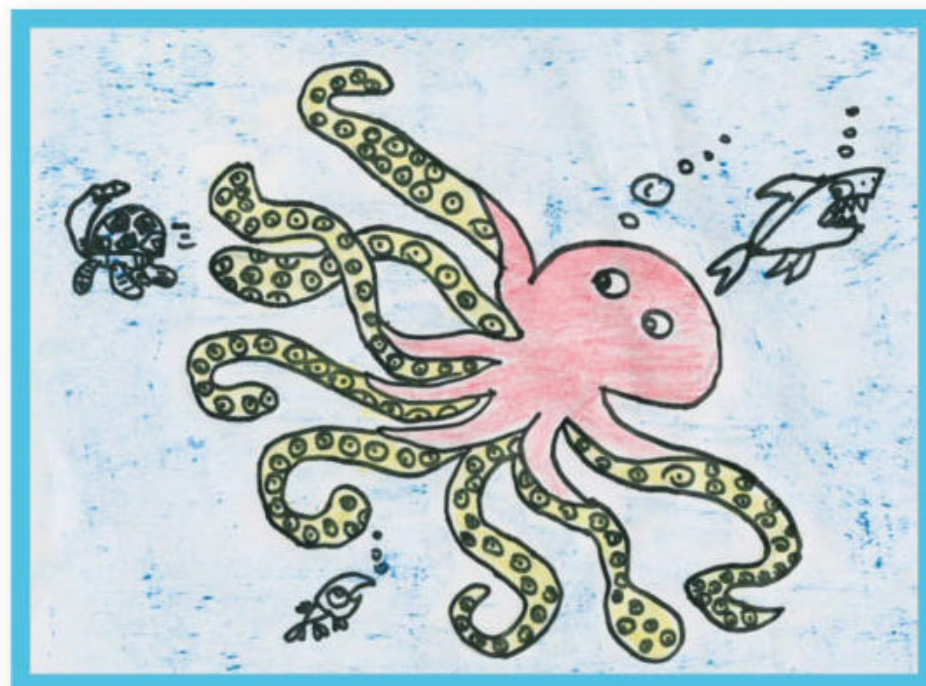
*Nat Geo Kids* readers show off their favorite marine animals in these drawings.



▲ **Green Sea Turtle** Marie R., 9, Gaffney, South Carolina



▲ **Hammerhead Shark** Chance H., 12, Marshall, Michigan



▲ **Amazing Octopus** Rishan C., 9, Portland, Oregon



# Draw a new superhero!

Send us  
your  
original  
drawings:

**Nat Geo Kids—  
Hero Art Zone**  
P.O. Box 98002  
Washington, DC  
20090-8002

Include your name, address, phone number, date of birth, a title for your drawing, a statement that it is your own work, and the name of your parent or guardian. Your parent or guardian must sign a release for publication if your illustration is selected. Submissions become the property of National Geographic Partners, and all rights thereto are transferred to National Geographic Partners. Submissions cannot be acknowledged or returned. Selection will be at the discretion of *Nat Geo Kids*.



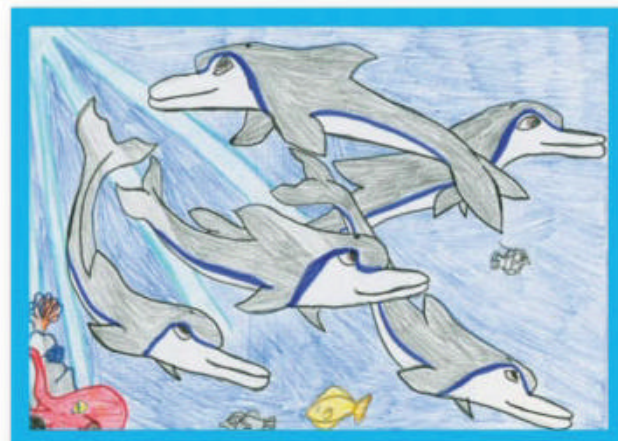
▲ **The Green Sturgeon** Jaden C., 10, Philadelphia, Pennsylvania



▲ **Meeting a Gentle Giant** Logan N., 8, Waverly, Iowa



▲ **Killer Whale** Henry W., 12, Carlsbad, California



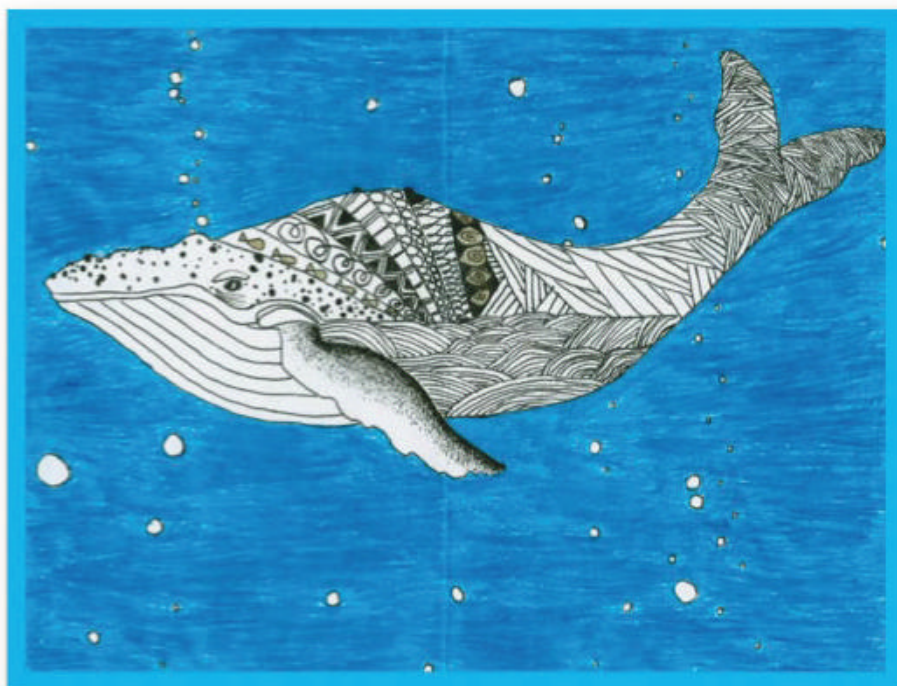
▲ **Dolphin Pod** Sabina C., 10, Albuquerque, New Mexico



▲ **Otter of the Sea** Maryanne G., 11, Olathe, Kansas



▲ **Penguins** Katelyn P., 10, Randolph, New Jersey



▲ **Abstract Humpback** Hannah P., 12, Puyallup, Washington

**Answers**  
"What in the  
World?"  
(page 30): Top row:  
waves, moss, bubbling  
mud. Middle row: tree  
bark, lava, iceberg.  
Bottom row: seaweed,  
sand dune, flower field.  
"Explorer  
Academy"  
(page 32): Locker at  
noon