LINDA HOYT

ANTHOLOGY OF MAGAZINE ARTICLES AND STUDENT WRITING

CONVENTIONS and Craft

GRADE 1

SCHOLASTIC

Dedication

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STUDENT WRITING

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Mmmm . . . Chocolate!

Your favorite chocolate treat doesn't start out so sweet. Discover how science turns a bitter bean into melt-in-your-mouth chocolate.

by Britt Norlander

I love chocolate. I bet you do, too! Every year, Americans spend a whopping $1 billion buying treats for their valentines. That's a lot of chocolate hearts!

Though Valentine's Day is a good excuse for a chocolate feast, Americans love this tasty treat year-round. It's no wonder then that chocolate makers spend a lot of time getting chocolate to look and taste just right.

It's a Fruit!

While chocolate may seem like a dream come true, it actually starts out as a fruit that grows on trees. Cacao (kuh-KOW) pods—fruits roughly the size and shape of a football—grow on cacao trees in warm regions around the world.

After about six months of soaking up the sun, the pods are ready for harvesting. They are cut down by farmers and then split open. Hidden inside each pod are 20 to 50 purple cacao beans.

The dark beans may look like a tasty treat, but don't pop one in your mouth yet. Raw cacao beans

CHOCOLATE STARTS WITH FERMENTATION

Farmers pick more than 1 million cacao pods each year! A cacao pod contains many pulp-covered beans. Farmers scoop out this pulp-and-bean mixture and place it into shallow boxes to ferment.

CLEAN THE BEANS

As the beans dry, farmers remove any dirt and broken pieces they find.

IT'S LIQUID CHOCOLATE

To create a unique flavor, chocolate makers mix liquid chocolate with different ingredients and then pour or squirt it into molds.

taste bitter and are so hard they might chip your tooth! The beans are also covered in a sticky, cream-colored pulp.

Sun Baked

To start the chocolate-making process, farmers prepare the cacao beans for fermentation (fur-men-TAY-shun)—a process by which complex sugars are broken down into simpler substances. They scoop out the bean-and-pulp mixture and place it in shallow wooden boxes. Then they cover the boxes with banana leaves and place them out in the sun for about a week. "They stir [the mixture] around by hand every few days," says Jonathan Haas of the Field Museum of Chicago. The sun's heat—which can raise the temperature of the beans to 52°C (125°F)—helps enzymes (EN-zimes) in the mixture to ferment the beans.

The beans are then dried to keep them from rotting on the long trips to chocolate factories around the world. Farmers lay the beans out to bake in the sun for a few days. They check the beans frequently, removing broken ones and cleaning out any dirt. After a few days, the beans have dehydrated (dee HYE-dray-tid)—had water removed—and weigh about half as much as they did before. They are then ready to be shipped to factories and made into yummy chocolate.

Hot Chocolate

Ever wonder why different chocolates have different flavors? It's the result of the ingredients added to the chocolate and the method by which the cacao beans are processed. "Every chocolate maker has a secret formula," says Susan Smith of the National Confectioners Association and the Chocolate Manufacturers Association.

First, the chocolate makers roast the cacao beans. They place them in a hot oven—at least

121°C (250°F)—up to two hours. Each company has its own special roasting method.

After the beans have cooled, the shells are removed. What's left behind is a chocolate solid called a "nib." About half of this nib is cocoa (koh-koh) butter—a naturally occurring fat.

Large discs or blades are then used to crush the nibs. This motion heats the mixture and melts the cocoa butter into a liquid called chocolate liquor [LIK-ur). This liquid is the main ingredient in chocolate.

Secret Recipe

Liquid chocolate may sound like something great to gulp, but it is still bitter-tasting. "It takes a little getting used to," says Rose Potts, a food scientist from Blommer Chocolate Company. She tests the liquid's flavor to make sure their product is top-notch.

To make a tastier treat, different amounts of liquid chocolate are mixed with ingredients like sugar and milk. Food scientists create the perfect recipe by experimenting with various amounts of each ingredient. They also use cacao beans from different parts of the world, because each region produces beans with their own unique taste.

Once the liquid chocolate is mixed just right, chocolate makers pour it into molds, where it sits for about 20 minutes at a temperature of 13°C (55°F). This allows the chocolate to harden into the shapes you pop into your mouth.

To make sure every batch of chocolate is just right, Potts and her coworkers have to do a lot of nibbling. You might think they get sick of snacking on chocolate. But they all still love it. "We just become more selective about [the chocolate] we eat."

SOLID AS A BAR

After the liquid chocolate has hardened into a solid bar, it is removed from its mold.

BABY ON BOARD

Discover why some animals spend their childhoods tucked inside a pouch

by Ruth A. Musgrave

A female kangaroo bursts through a tangle of branches and bounds across the field. She bounces toward a patch of green grass, leaping two car lengths per hop. Suddenly, she slams to a stop. A baby pops its head out of a pocket on her belly and calmly looks around. It's hard to believe the baby kangaroo survived such a wild ride. But tucked inside its mother's pouch, the joey is as safe as a baby in a crib. Like other marsupials, the baby 'roo spends its childhood living in a soft pouch on its mother's belly. Read on to discover what it's like to grow up inside a pocket.

A grey kangaroo carries her young in her pouch until the baby is about 8 months old.

Tiny Tots

Kangaroos are one of nearly 300 species of marsupials. Other marsupials include wallabies, koalas, and opossums—the only marsupial found in North America.

Marsupials are mammals just like you. But these animals grow up very differently from other mammals. Before they are born, most mammals spend a long time developing inside their mothers' bodies. Marsupials, however, are born very early. But not to worry: A marsupial does most of its growing in a pouch on the outside of its mother's belly.

Because they are born so early, newborn marsupials are very small. Take the red kangaroo. It is the tallest marsupial when fully grown—it can be taller than a human. But a red kangaroo joey weighs less than a gummy bear at birth. Newborn opossums are tiny too. You could fit 20 of them in a teaspoon!

Baby marsupials are also underdeveloped at birth. They are hairless and blind, and their hearts, lungs, and kidneys are barely formed.

Marsupial Marathon

The only body parts that are well developed when a baby marsupial is born are its front limbs and chest muscles. That's because—despite its tiny size—the baby must make a death-defying trek to safety within a few minutes of being born.

The newborn has to find its own way into its mother's cozy pocket—dragging itself along with its front limbs. The baby can't live on its own at this point in its life cycle. So if it falls or cannot find its mother's pouch, it does not survive.

For some marsupials, the trek is also a life-or-death race against other littermates. For instance, opossum moms give birth to far more babies than they can care for and feed. Only the first babies that reach the mother opossum's pouch will survive.

Pocket Protector

Once a newborn settles inside its mom's built-in sleeping bag, it nurses day in and day out. Muscles around the mom's pouch keep the baby tucked inside, even when a mother kangaroo is hurtling at 40 kilometers (25 miles) an hour.

While a kangaroo's pouch opens on top, most marsupials have pouches that open from the bottom, like an upside-down pocket. One reason is that many marsupials dig and burrow in the dirt. An upside-down pouch may keep the baby from getting covered in dirt. Some marsupials, like the small mouse opossum, don't even have a fully formed pouch. Instead, mom tightens a circle of

At 130 days old, a baby red kangaroo is just beginning to open its eyes.

When baby opossums get too big to be carried in mom's pouch, they hang onto the fur on her back.

muscles to form folds of skin that hold her baby.

Pocket of Change

Safely attached to its mom, a baby marsupial feeds and sleeps while its body continues to grow and develop. Fur sprouts, its body fills out, and its organs fully develop. The time it takes for a baby marsupial to be able to survive outside the pouch depends on the species.

At about 4 months old, a baby kangaroo begins to peek outside the pouch. About a month later, it leaves the pouch for the first time. But it quickly hops back in the pouch if there is danger around.

Eventually, a baby gets too big for its mother to carry around. When a kangaroo joey is about 12 months old, its mother will push it away if it tries to stick its head back in the pouch. That lets her "pouch potato" know it's time to live on its own.

A koala baby weighs less than an ounce at birth. It doesn't get all of its fur until it is 6 months old.

POLAR BEAR NATION

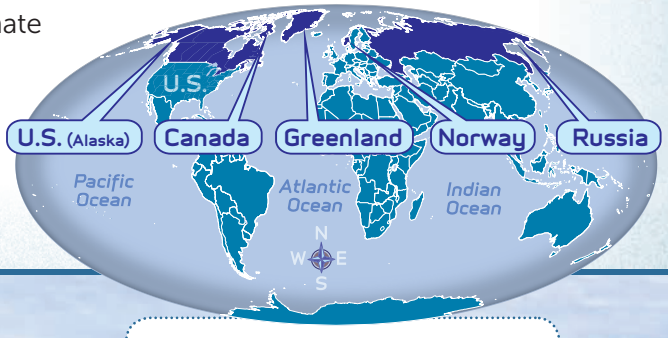
TEEN TRIPLETS FIGHT TO SAVE A THREATENED SPECIES

by Kristin Lewis

Connor, Hayley, and Emma Gilbert are 16-year-old triplets on a mission: They want to save polar bears from extinction—and they're doing it one T-shirt at a time.

Polar bears roam the Arctic ice in the northernmost parts of the world. But global climate change is causing the ice to melt—and that's bad news for these majestic creatures. That's why the Gilberts decided to start Polar Bear Nation. Their goal is to raise money for and awareness of the polar bear's plight.

Earlier this year, the U.S. government put polar bears on the "threatened species" list



POLAR HOMES
Polar bears live in the Arctic regions of these five countries.

Melting ice shrinks the polar bear's habitat.

Polar bears hunt seals, their main food source, from atop sea ice. As warmer temperatures cause the ice to melt, the bears have fewer places to catch their dinner.

of the Endangered Species Act. The bears are the first animals to make the list because of anticipated habitat loss from global warming. While the decision is a step in the right direction, conservationists like the Gilberts worry it isn't enough.

TAKING ACTION

When the triplets' dad, a photojournalist, returned from a trip to the Arctic in 2006, the teens were shocked to learn how dire the situation is for polar bears.

"They're a great species to show climate change because here we have this bear that has been surviving in the harshest environment on the planet and what we're doing in our daily lives is going to kill them," says Connor. "It's already begun with some bears reverting to cannibalism and the number of cubs falling off."

Polar bears hunt seals, their main food source, from atop sea ice. As warmer temperatures cause the ice to melt, the bears have fewer places to catch their dinner. While most of these colossal animals aren't in immediate danger, they soon will be if things don't change. A United States Geological Survey study last year estimated that polar bears could disappear by the year 2050.

Connor, Hayley, and Emma put their heads together and came up with an idea. Why not start a clothing line and donate a portion of the profit to Polar Bears International, a nonprofit organization that works to preserve the bear's habitat?

They designed a line of T-shirts, sweats, and sweatshirts called Polar Bear Nation. The name and logo depict the five nations where polar bears reside: the U.S. (Alaska), Canada, Russia, Norway, and Greenland (administered by Denmark).

"When we wear Polar Bear Nation shirts, people ask 'Oh, what's that?' and then we have an opportunity to tell them," says Connor. "It's a great way to get into other people's lives with the message."

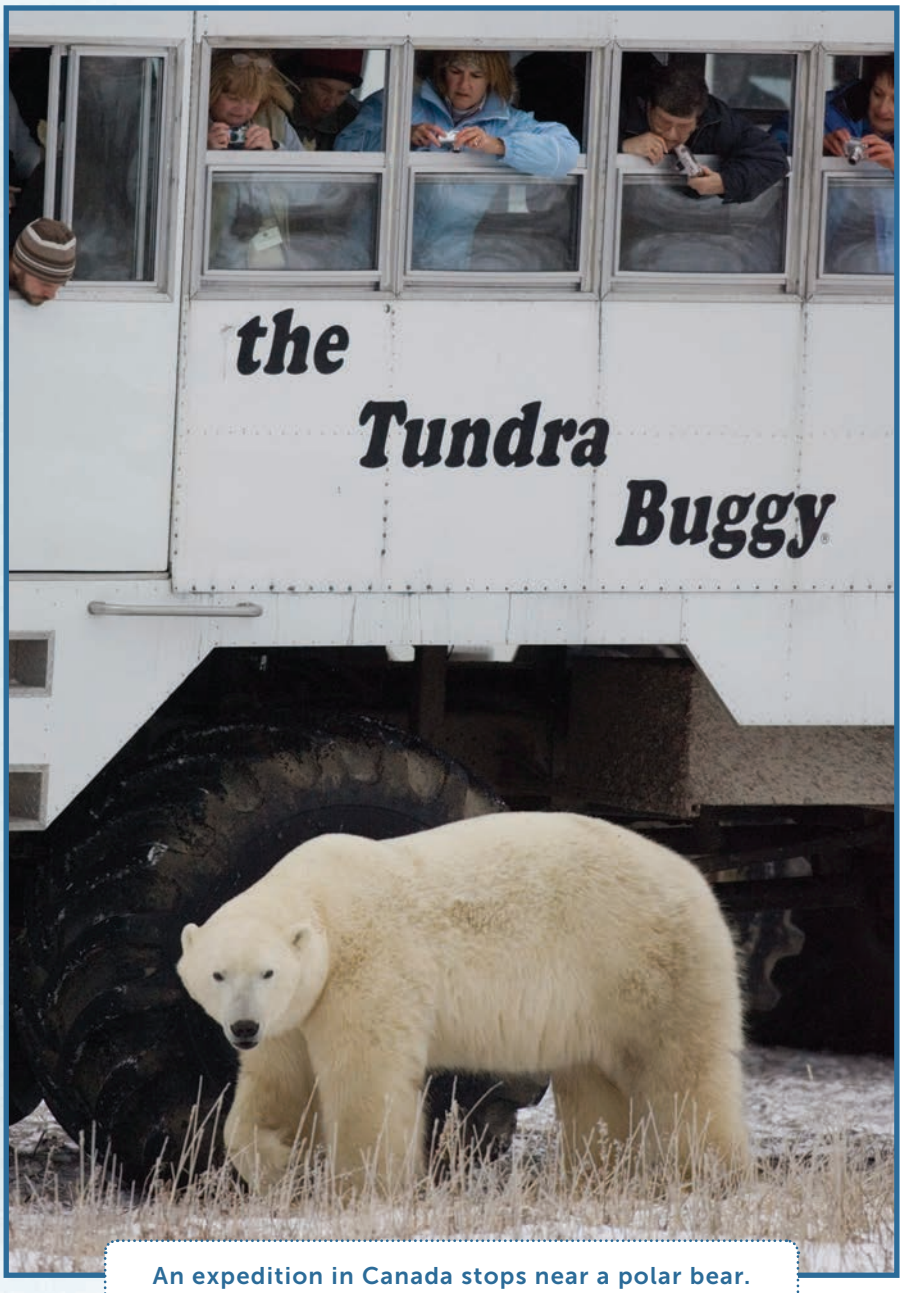
Since launching the clothing line last year, the response has been overwhelming. Besides the U.S., the triplets get orders from Australia, Denmark, and Canada. CNN even featured them on its Young People Who Rock show. "It's great because we're bringing the world together," Connor says.

LOOKING AHEAD

The triplets have big plans for Polar Bear Nation. They recently launched a website, polarbearnation.org, to create an international community of polar bear conservationists. "We've always envisioned it to become a group of citizens of the world," says Connor. "We want this whole group to be like a social network—a group of people who are empowered to create change."

When it comes to creating change, the Gilberts have strong ideas about how every person can help stop global warming and save the polar bear's habitat. The first step is to use less energy. That means sharing car rides with friends, taking public transportation, turning off lights when you leave a room, and unplugging electronics when not in use.

"The little things you do in your daily life add up. That's the point a lot of people miss," says Connor. "People say, 'Oh, I don't have the power to curb global warming; it's too huge for me.' But if everyone does a little bit, you can make a real change."



An expedition in Canada stops near a polar bear.

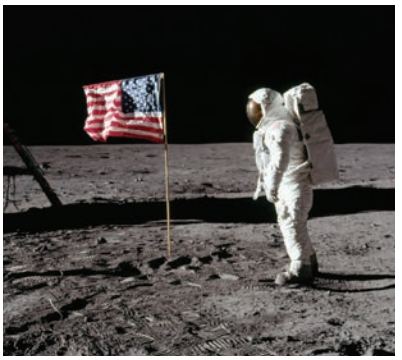
RETURN TO THE MOON!

Astronauts Are Heading Back to Earth's Nearest Neighbor—Eventually, to Stay

by Christy Brownlee

On July 21, 1969, millions of television viewers around the world tuned in to the news to watch an amazing event. For the first time ever, people were walking on the moon!

The now-famous moonwalkers were American astronauts Buzz Aldrin and Neil Armstrong. For two hours, the astronauts kicked up dust and left long-lasting footprints in the moon's powdery gray soil. The experience caused Armstrong to utter some unforgettable words: "That's one small step for man, one giant leap for mankind."



Astronaut Buzz Aldrin was one of the first humans to walk on the moon's surface.

Moon Mission

Since Aldrin and Armstrong's first moon walk, 10 more people have set foot on the gray globe's chalky surface. But no one has walked on the moon in more than 34 years. Now, the National Aeronautics and Space Administration (NASA) is planning another giant leap for mankind. It's gearing up to send astronauts back to the moon—eventually, to stay!

Why send astronauts back? Because our nearest neighbor in space is a great place to learn more about Earth and the rest of the universe. It could also serve as a launching pad for destinations farther than people have ever traveled.

Old Pals

The moon is much more than a chunk of lifeless rock orbiting Earth. "It's actually a piece of Earth itself," says Tony Colaprete, a scientist who works at NASA's Ames Research Center in Moffett Field, California.

Scientists believe that 4 billion years ago, a small planet the size of Mars smashed into Earth. The crash was so powerful that it chipped off a gigantic chunk of our planet and kicked it into space. That chunk is now the moon.

That's one reason to make a return trip, says Colaprete. Since the moon is made of ancient Earth, some scientists think that studying it up close will tell us what our home planet was like long ago.

MOON LANDING LOG

Six manned spacecraft have landed on the moon. Each touched down in a different place. Can you find the touchdown sites on this image?

	Spacecraft Name	Area of Touchdown
1	Apollo 11	Sea of Tranquility
2	Apollo 12	Ocean of Storms
3	Apollo 14	Frea Mauro Formation
4	Apollo 15	Hadley-Apennine
5	Apollo 16	Plain of Descartes
6	Apollo 17	Taurus-Littrow

The moon could also give scientists a better look at what the rest of our universe is like. Earth's atmosphere and city lights can alter the images that scientists see in telescopes. But the moon doesn't have an atmosphere. Nor does it have any of Earth's big city lights. So by setting up telescopes there, researchers could get a clearer view of space.

Home Base

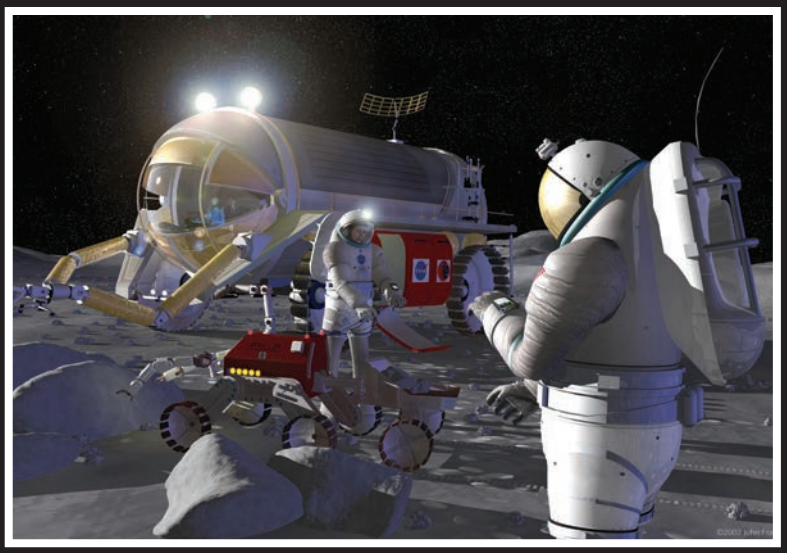
Eventually, the moon could also act as a training camp for trips to planets. The 384,400-kilometer (238,855-mile) trip to the moon takes a spacecraft only two and a half days. Mars, though, is much farther. Its closest distance from Earth has measured 54,500,000 kilometers (33,864,730 miles). So a trek to Mars could take almost nine months. "That lengthy time makes it much more difficult to go back if something goes wrong or there's something that we forgot," explains scientist Chris McKay, who works at NASA's Ames Research Center.

After it sends four astronauts to the moon for a brief period in 2018, NASA will have other astronauts visit it for longer stretches of time. Eventually, colonies of astronauts could live there for six months.

But the moon has no food or oxygen, a gas that humans must breathe to stay alive. So how can astronauts remain there for such long periods? They'll use the same trick that extreme mountaineers use to survive in the wilderness, says McKay. On their first few trips, astronauts will take some supplies, such as oxygen packs and tasty meals, with them in separate cargo vehicles. But eventually, they plan to

mine some supplies from the moon's surface itself. Some researchers believe that there's oxygen buried in the moon's dirt, and water hidden in its deep craters.

Figuring out how to live on the moon could teach scientists the skills needed to keep exploring the rest of the universe. Says McKay: "A moon base is the first step to an essentially endless voyage into space."



This is what astronauts and robots working together on Mars might look like.

The astronauts will fly to the moon aboard a new spacecraft that NASA is developing.

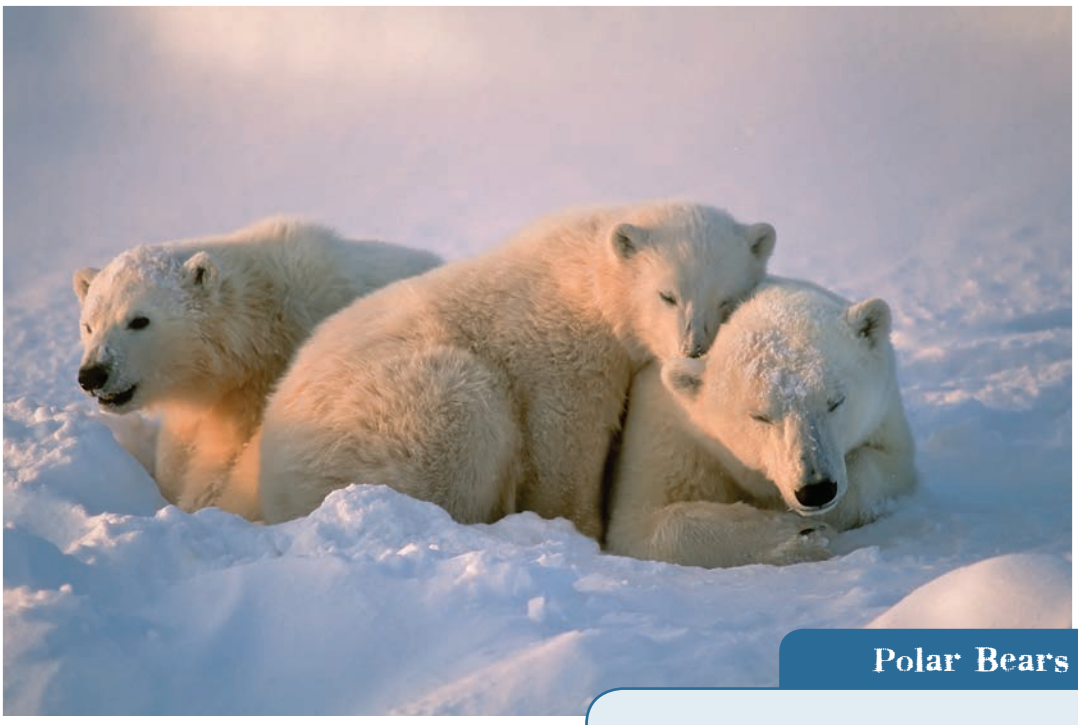
Wild About Winter

by Emily Costello

It May Be Freezing Outside, But These Animals Still Feel the Heat

Brrr! Below-zero temperatures, howling winds, deep snow—winter can get pretty extreme. Now imagine being stuck outside without your warm winter gear. You'd scramble inside quickly, right? Yet some animals thrive outside in winter.

Hundred-ton blue whales frolic in the freezing Arctic Ocean. Huskies sleep comfortably in snowdrifts. River otters belly-slide down snowy slopes into icy waters. How do they withstand the cold? They have special adaptations (AD-ap-TAY-shuns) that help keep them warm.



Polar Bears

Polar bears love cold water and ice. Scientists have spotted them swimming 80 kilometers (50 miles) from land! In the Arctic Ocean, they ride huge chunks of floating ice and hunt for seals swimming below. So how do these 450-kilogram (1,000-pound) heavyweights keep from freezing? Part of the answer lies in the skin that's underneath their fur. Unlike the polar bear's fur, the skin is black. This dark color absorbs (soaks up) heat from the sun, allowing the bear to stay cozy in the cold.

Emperor Penguins

Emperor penguins spend the winter on the ice in Antarctica—Earth's southernmost landmass. They stay warm—at least part of the time—by huddling in a big group. They take turns braving the chilly wind and below-zero temperatures along the group's outskirts. Then they move into the group's center to warm up. The birds also have layers of scale-like feathers to keep the wind out. On really frigid days, emperor penguins puff out their feathers. That traps air for even better insulation (in-su-LAY-shun).

Emperor penguins are also plump. Up to a third of their weight can be blubber. The blubber adds a layer of warmth and packs away needed energy for the times the birds don't feed, such as when they are mating.

Musk Oxen

Musk oxen know how to dress for cold weather—in layers! These large mammals grow thick overcoats of shaggy hair. Under that, they have a coat of fine hair called qiviut (KIV-ee-oot) that works like a layer of thick fleece. The qiviut keeps heat from escaping a musk ox's body, and allows the animal to stay warm in freezing temperatures. In the spring, musk oxen shed their fine coat of hair to keep from overheating. Some residents of cold regions then collect the qiviut and knit it into super-warm hats and scarves.

Arctic Hares

Arctic hares can't talk, but if they could they'd tell you to wear your earmuffs. Like humans, animals lose some body heat through their ears. Why? A lot of it has to do with circulation (SIR-kyoo-LAY-shun). As warm blood circulates the body, it must travel through blood vessels in the ear. These vessels are close to the body's surface, which is in contact with cold air.

Unlike hares living in warmer climates, Arctic hares have short ears; this means that the blood has a short path to take through the vessels in the ears. The shorter the path, the less time the blood has to cool off. Now, that's an earful!

Snow Monkeys

Snow monkeys live in Northern Japan, where winter temperatures plummet as low as -23° Celsius (-9° Fahrenheit). That's unusual because primates (PRY-mates) usually live in the tropics, where fruit grows all year. Like many animals living in cold regions, snow monkeys get by because of their shape: They have stocky bodies, and short arms and legs.

The monkeys' compact and rounded shape means less surface area is exposed to the cold than those animals with long bodies and limbs. With less surface area exposed, less body heat is lost. If that isn't enough, they go swimming! These red-faced monkeys have been known to take dips in steaming-hot pools of water—just like humans might on a relaxing spa holiday.

Rivers are home to many animals. Millions of people get their drinking water from rivers too. So when garbage gets into the water, it is a big problem. One man decided to do something about trash in our country's rivers.

River of Trash

Cleaning Our Rivers

Where can you find a basketball, an old stove, a broken piano, and car tires? It is all junk you might find in a garbage dump. But believe it or not, one man has found all of this trash in our country's rivers.

Chad Cleans Up

Chad Pregracke (pruh-GRAK-ee) grew up near the Mississippi River. He fished and swam in the river. But there was a problem. Chad saw a lot of trash in the water, and it really bothered him. "I got sick of seeing it and just wanted to do something about it," he says.

He started to clean up the river, all by himself. He would go out in a little boat and pull the trash out. Chad was able to pick up a lot of trash on his own. But he wanted to do more. So he started a group called Living Lands and Waters. The group helps clean up rivers all over our country.

Path of Pollution

How does trash get into rivers? Sometimes people throw their garbage right into the water. But trash can get into rivers in another way too. When people throw litter on the ground, the wind or rain can carry it into storm drains. Then the drains carry the trash to rivers.

Taking Out the Trash

Over the past 15 years, Chad's group has cleaned up 22 rivers. The group travels to different states and works with the community's people. Together, they have pulled out 7 million pounds of trash!

Chad teaches people that they can make a big difference in their own community. "The garbage got into the water one piece at a time," he says. "And that is the only way it is going to come out."

Chad sits among many tires that he has pulled from rivers.

One of Chad's volunteers lifts a refrigerator from a river.

What's in the Water?

Here are some of the things Chad and his team have pulled out of our country's rivers. Chad recycles most of the trash he finds.

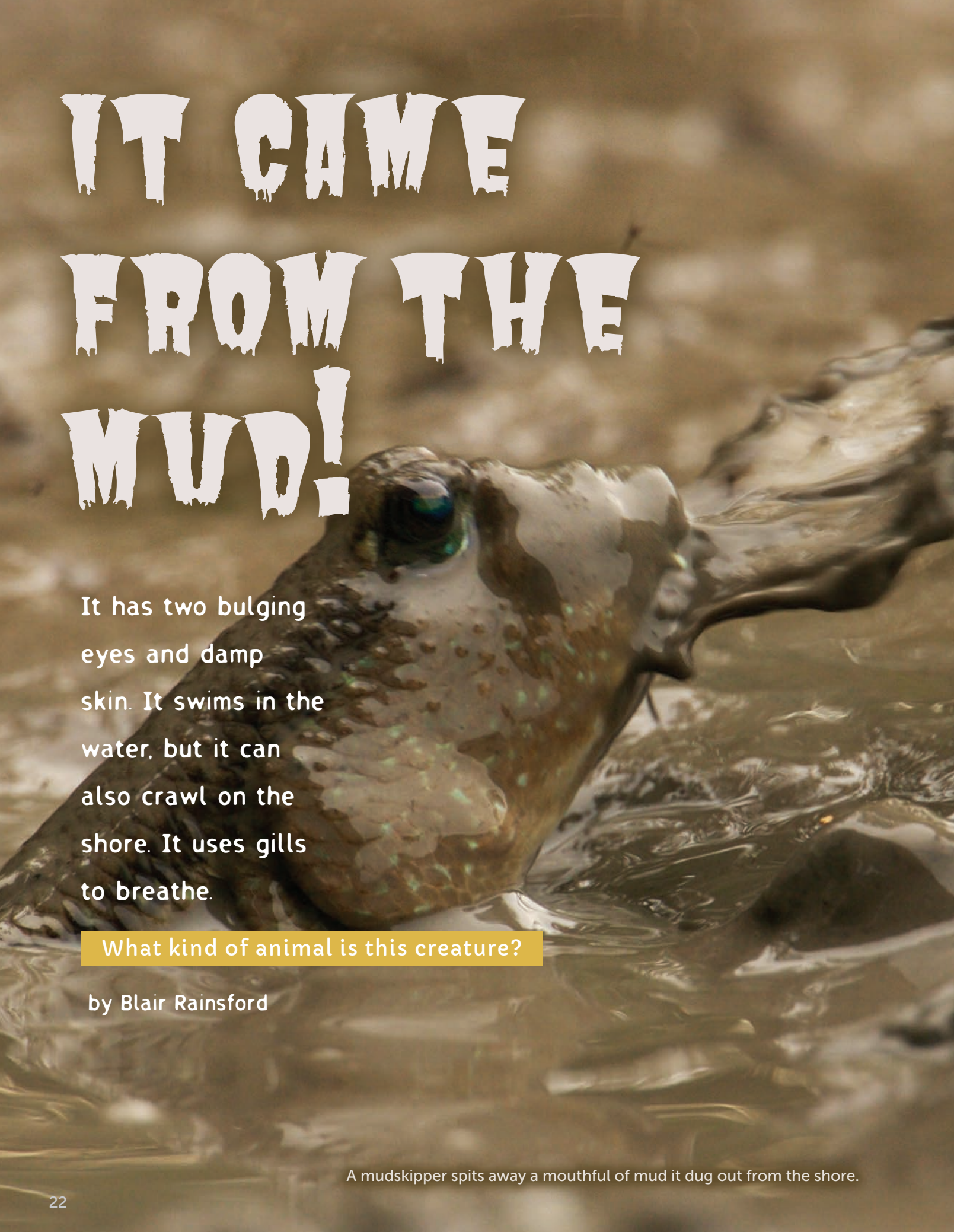
951 refrigerators	**67,000 tires**
233 stoves	**4 pianos**
19 tractors	**218 washing machines**

IT CAME FROM THE MUD!

It has two bulging eyes and damp skin. It swims in the water, but it can also crawl on the shore. It uses gills to breathe.

What kind of animal is this creature?

by Blair Rainsford



A mudskipper spits away a mouthful of mud it dug out from the shore.

Mudskippers sometimes open their mouths wide when they are fighting over places to live on the beach.

Male mudskippers jump to get female mudskippers' attention.

Fish on the Shore

A little brown fish swims in the shallow water by the muddy seashore. It's a mudskipper!

As the fish swims, the water slowly pulls back from the shore. Now it's low tide, and the mudskipper is left on the shore. For most fish, being left on land would be a big problem. But it's not a problem for the mudskipper.

Most fish need to stay underwater to survive, but the mudskipper is different. It is an amphibious (am-FIH-bee-us) fish. Its body parts help it breathe in water or on land, so it can live both places.

Fantastic Fins and Tails

Most fish have fins and tails to swim in the water. Mudskippers do too.

But the mudskipper also uses these body parts to move on land. How? It lies on its belly on the mud, and it reaches forward with its fins. Then it drags itself along the muddy shore on its belly. It can crawl really fast!

The mudskipper uses its tail to jump across the beach. First, it curls its tail. Then it straightens its body and pushes off the ground. Up it goes!

Great Gills and Damp Skin

All fish need oxygen to breathe. But most fish do not have lungs. They use their gills to get oxygen from the water. Mudskippers use gills to breathe in the water too. They do not have lungs.

But the mudskipper's body lets it breathe on land too. The mudskipper has little pockets near its gills. When it's swimming, it fills the pockets with water. Then, when it's on land, it gets oxygen from the water in the pockets. It can breathe just fine!

The fish has one more way to breathe on land. It can breathe through its damp skin to get oxygen right from the air.

Shovel Mouth

All fish have mouths for eating. Mudskippers do too. But mudskippers also use their mouths to build a home for their eggs.

Fish eggs need to be moist to survive. A father mudskipper uses his mouth to dig a burrow. He digs out a mouthful of mud from the seashore. Then he spits it away. He does this again and again to make the burrow longer and deeper. He builds the burrow close to the ocean so that it fills with water.

The mother mudskipper lays her eggs in the burrow. The eggs are safe—and wet—inside the burrow that the dad made with his mouth.

A mudskipper has the same parts as other fish. But it uses them in unusual ways. That's how it survives in the land and water of its seashore home!

Masters of Disguise

Meet animals who hide in plain sight

by Judith Jango-Cohen

Harry Potter's invisibility cloak is magic. When Harry pulls it on—poof!—he disappears. Like this wizard, many animals have "disappearing" acts of their own. With a trick called camouflage, animals use colors, patterns, and shapes to blend into the background. Masked in these disguises, animals prowl for prey or hide from hungry hunters. "The better concealed an animal is, the better its chance of surviving," says Innes Cuthill, an animal coloration expert at England's University of Bristol. Read on to sneak a peek inside these magicians' bags of tricks.

polar bear

Matching Act

A polar bear's white coat fades perfectly into a frosty snow bank. The polar bear is so well suited to its snow-covered Arctic environment, it often can be spotted only by its black nose! The bear's white fur helps it sneak up on its prey, such as seals, undetected. With this camouflage strategy, animals match the background, blending into their surroundings.

Presto Change-o!

For creatures like the Arctic hare, one color combination isn't enough. A changing environment can call for changes to camouflage too. In the summer, an Arctic hare's

Puzzling Patterns

The boa constrictor relies on surprise to snare its snacks. But there's a problem. Even if an animal exactly matches its background, a slight mismatch at the body's edge may give away its outline. The boa has a clever solution. Its chocolate- and cream-colored scales blend with bark, soil, and leaves. These contrasting colors are arranged in scattered patches like mismatching puzzle pieces. This design gives a boa's body a disconnected look and breaks up the strangler's shape. Prey may not detect its slinky form until it is too late. Chomp!

boa constrictor

stick insect

Mimic Trick

Stick insects look just like twigs, so lurking birds often ignore them. They go undercover by imitating other organisms. Animals who use mimicry often disguise themselves as a harmless plant or a foul-tasting critter. So even if prey or predators detect it, they take no interest. As for stick insects, these master mimics even sway with the wind. If a bird approaches, they tumble to the ground like a broken branch. Thunk!

fur is brown and gray. These colors blend in with shrubs, grasses, and rocks. But as the winter nears, the hare loses its dark fur and grows a snow-white coat. The switch helps the hare hide from predators during the winter months. Arctic hares are slowpokes at switching colors compared with other animals like the octopus. This magician can change its hue in seconds by opening tiny color sacs in its skin. Need speckles or stripes? Snap! No problem. An octopus can "turn on" two or more colors to blend perfectly with coral, sand, or stones.

Hocus Pocus

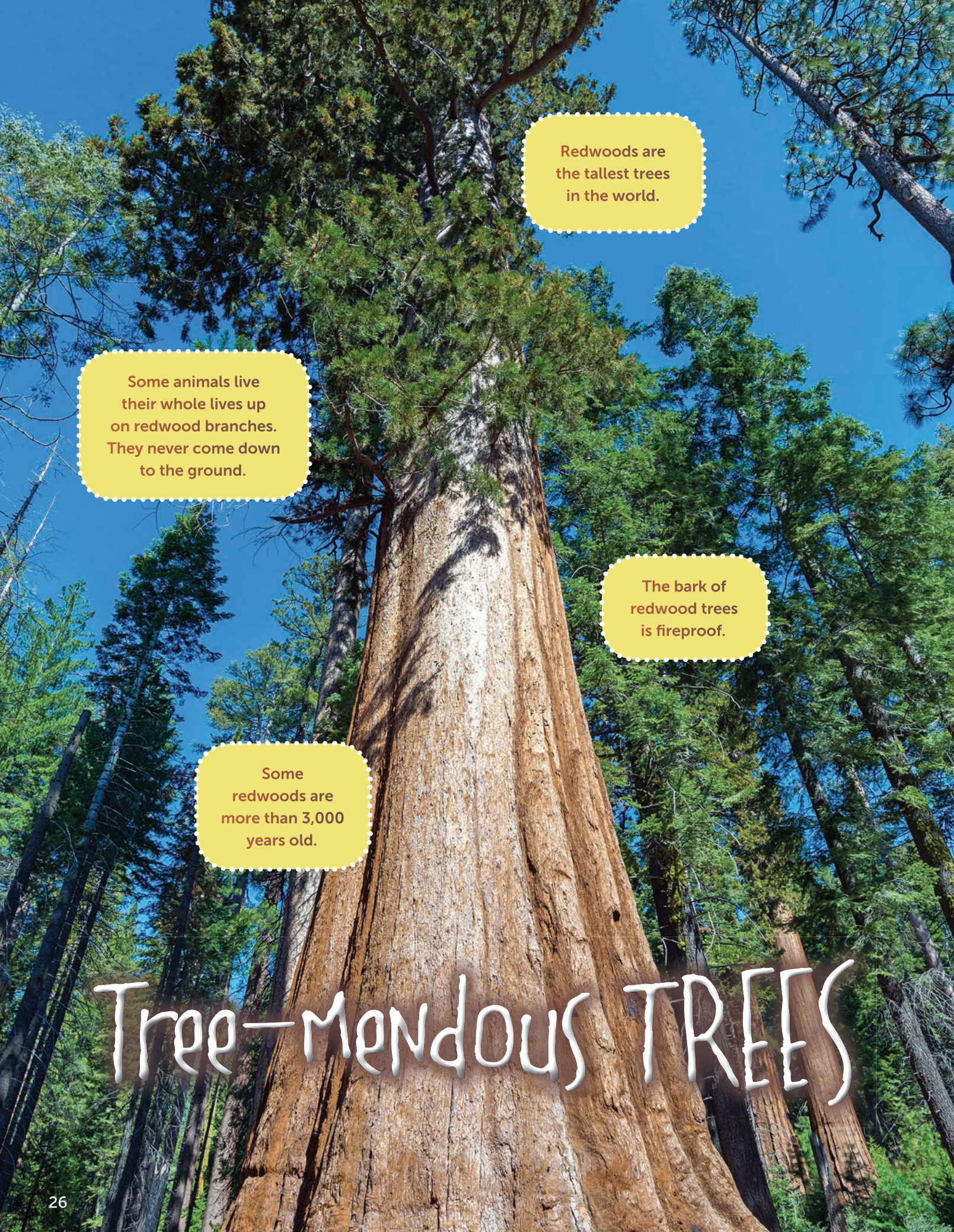
On the open plains of Africa, zebra herds have nowhere

Arctic hare

to hide from lions. Unable to blend in, zebras take a different camouflaging tact. It may seem like their bold black-and-white stripes stick out on the savanna like a neon sign, but they actually help individual zebras hide. When a lurking lion spies a herd, it sees a jumble of

zebras

black-and-white lines. This camouflage technique, called dazzle coloration, creates confusion for the cat. It's difficult for the hunter to tell where each zebra begins and ends. The lion can't pinpoint one animal to determine its size, its shape, or the direction it is facing.



Tree-mendous TREES

The Parts of the World's Tallest Trees

If you're scared of heights, you may want to stop reading. Redwoods are the biggest trees you'll ever see. One kind of redwood is called the coast redwood. Coast redwoods are the tallest living things on Earth. They are so huge, scientists have actually gotten lost while climbing through their branches! Are you brave enough to keep going? Let's examine these super trees from their roots to their crown.

Giant Roots

You may never have thought about how a tree stands up. That's the job of the tree's incredible roots. It takes a lot of support to keep a tree this enormous from crashing down. The roots grow out really far on all sides of the tree. That helps the big redwood stay balanced. The roots have another huge job. They soak up water from the soil. The water travels from the roots up the gigantic trunk.

Massive Trunk

A redwood's massive trunk holds amazing secrets inside. Bugs can harm some trees by eating them. But bugs don't eat the redwood's trunk. There is a chemical in the wood and bark that is harmful to insects. The trunk is also fireproof! That's because there is not much resin in it. Resin is a thick liquid that flows through trees and can catch on fire.

Big Branches, Tiny Leaves

To study the branches, scientists climb to heart-pounding heights. They may spend days up there. The branches are so sturdy, the scientists hang hammocks from them and sleep right in the tree! Most of the parts of a redwood are massive, but its needle-like leaves are tiny! Each one is about the size of a grain of rice. But billions of these leaves work together to help make food for the whole tree. They do this in a process called photosynthesis.

The Secret Giant

Why are redwoods so big? They live for thousands of years. During that time, they never stop growing. Scientists have named the tallest redwood in the world Hyperion. But they won't tell anyone where it is. They want to keep it safe so that it can live for many more years.

The redwood is so thick, a car can drive through it! The tunnel doesn't hurt the tree.

A harbor seal carries its pup to shore.

Seal Rescue

by Karen Kellaher

Picture this: A baby seal snoozes on a beach in Seattle, Washington. Its mom is out fishing for food in the water. It's a peaceful day for this seal family—but not for long. Suddenly, people on the beach rush over to the seal pup to get a closer look at it. Some try to feed or pet it.

The pup is now scared—and the mom, looking on from the waves, is just as frightened.

"If anyone crowds around the pup, the mother might be too afraid to come back for her baby," explains Noemi Reche-Ley. Noemi, who is in third grade, volunteers with a group called Seal Sitters. They help keep seal pups living in Puget Sound safe from people.

A volunteer for Seal Sitters closing off the areas around sleeping seal pups with yellow tape.

Beach Baby-sitters

Everyone who volunteers for Seal Sitters is asked to find sleeping seal pups and close off the areas around them with yellow tape. "Then the other volunteers and I stand guard from about 100 yards away and watch over the pups with binoculars," says Noemi. If others try to get near the pups, the Seal Sitters stop them and explain to them why the seals shouldn't be disturbed.

One big reason is that seal pups really need their moms. Like most baby mammals, seal pups rely on their mothers' milk. It has the nutrients they need to survive. If the babies are kept apart from their moms, they are likely to die.

Seals are also threatened by pollution. People leave garbage, such as plastic bags, on the beach. Noemi and the group try to keep the beach clean. They don't want the animals swallowing things that could make them sick.

"My fellow volunteers and I love seals," says Noemi, "and we want to protect them."

POEM

A Seal's Life

Flippers swishing from
side to side.

Through the cool water,
I speed and glide.

Furry head poking out of
the ocean blue,

I love the water but need
air, too.

Diving deep, in search of
a meal.

Yum! Fish and crabs hold
great appeal.

Whiskers twitching, now
I should flee.

A shark's nearby, and it
might eat ME!

Warm shore calling, and
one by one.

My friends and I wiggle
out to rest in the sun.

Ice Cream in a Bag

By Carlos

1. Get a quart size zip lock bag.
2. Pour ½ cup of half and half into the bag.
3. Add 1 tayblespoon sugar.
4. Add ¼ teaspoon vanilla.
5. Add chopped fruit or flaevorings.
6. Seal the bag.
7. Get a gallun size zip lock bag.
8. Fill it with 3 cups of ice and 1/3 cup of rock salt.
9. Add the closed zip lock with the creamy ingredients.
10. Make sure both bags are sealed tight.
11. Put on mitteyns and roll the bag around until the ice cream gets firm.
12. Eat it!

Yummy!

Poison Dart Frogs

By Gaëtan

Finding Dinner

Peeking through the dense plants, a golden dart frog searches for prey. As he slowly turns his head, this minuscule little frog spots an army of marching ants scurrying through the leaves. Patiently, he waits. Then his long legs propel him into a huge leap and his long, sticky tongue hungrily laps up his ant dinner. Now that's a happy frog.

Brilliant Warning

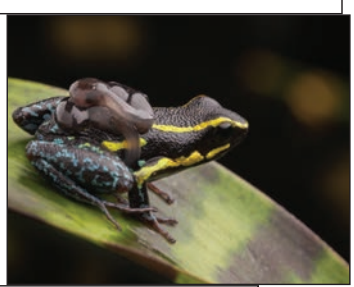
This frog is best known for its beautiful colors. They are so gorgeous that a person might want to touch one, but that is a bad idea. A simple touch could be enough to kill you—and predators know that the brilliant coloring of this tiny amphibian is a warning to **stay away!**

Tiny but Deadly

Even though it is tiny—less than 1 inch—this miniature frog carries a huge impact. It has enough poison in its system to paralyze or kill 10 adult humans—or 10,000 mice! That's a lot.

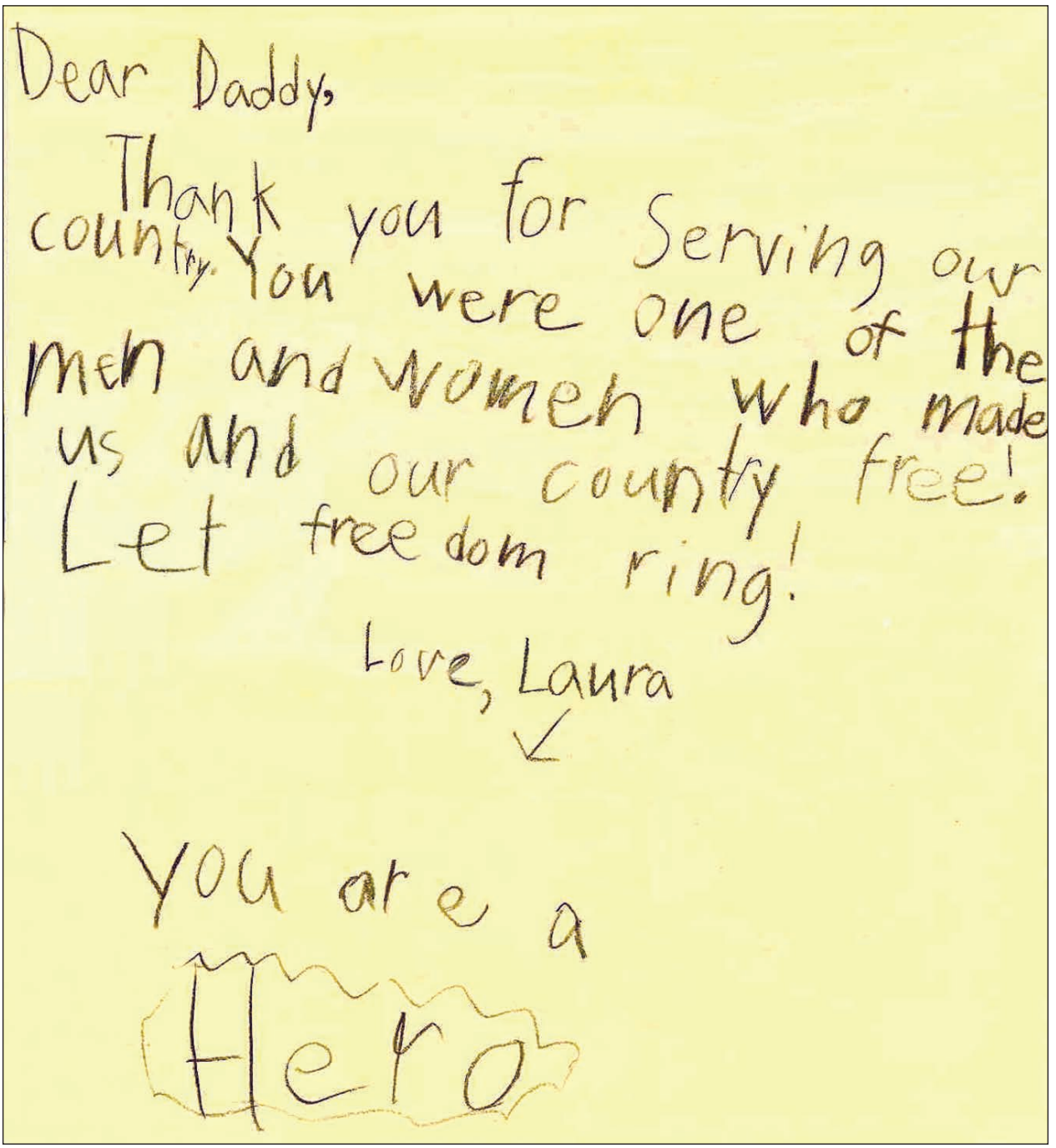
Habitat

This poison dart frog is primarily found in moist, tropical areas in South America. It prefers rainforests with ample precipitation as the water that pools in the curled leaves of trees provides drinking water and a place for eggs to hatch and develop.



Caring Parents

It is interesting that this species of frog lays its eggs on the ground, then puts them on their backs to transport them to the top of trees in the rainforest. Once in the treetops, this tiny frog slips the eggs into a pool of water captured in a leaf and carefully nurtures them until they transform from eggs to tadpoles to frogs.


Dear Daddy,
Thank you for Serving our country. You were one of the men and women who made us and our country free! Let freedom ring!
Love, Laura
You are a Hero

A mother sea turtle leys her eggs and she leves and they hach and they go to the water and they beter wach out because they cud get etend...

Whitney