



NATIONAL
GEOGRAPHIC

MAKE
PEBBLE
PEOPLE!



KIDS

BEST AND
WORST
ANIMAL
PARENTS!

NINE
GREAT
INVENTIONS!



30
COOL
DINO
FACTS!



HISTORY'S
GREATEST
HITS

HARRY
HOUDINI



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JGI New Zealand coming soon!

Hello!

Your parents might drive you crazy sometimes, but imagine what it would be like to be brought up by an orangutan mum, or a cockroach dad!

We investigate the best and worst animal parenting styles on page 10!

Also this issue, we travel to Canada to witness the world's highest tides. Plus, we discover some ways that YOU can help wildlife affected by the terrible bushfires.

Find out what on earth the 'circular economy' is on page 30 and learn why it's great for the planet! We also hear from a frog expert in West Africa, and dig up 30 fab facts about dinosaurs!

See you next month,
The NG KiDS team



The NGK team!

4 WILD POSTERS!



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Oi, no cheating!

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Wacky World!

There are some crazy things going on out there!

INSIDE SCOOP

The latest news from around the globe...

Toxic sunscreen banned in Palau!



Suncream is brilliant at **protecting our skin** from the **Sun's harmful rays**.

But unfortunately some of the ingredients in them are **toxic** to **coral** and other sea life. That's why the **Pacific nation** of **Palau**, famed for being a paradise for divers, has **banned all sunscreen that contains harmful chemicals** – it's the first country to do so. The US state of **Hawaii** will introduce a ban in **2021**. Great news for planet lovers!



Palau is made up of hundreds of islands!



Human library books!



Thanks to a project by **Human Library Australia**, visitors to **Queensland State Library** can now borrow **human story tellers** alongside **novels, toys, mags and music**!

These special '**human books**' are **real people** – **volunteers** from all walks of life who want to **share their personal stories** and answer **any questions** their '**readers**' – like you – might have. The '**reading**' is in the form of a **conversation**, which means the chat can go exactly where you want it to – so you can learn all about someone very **different to yourself** and talk about things you've always wanted to know. Cool!

Just like in conventional libraries, visitors to the **Human Library** can choose a '**book**' from a range of **titles and descriptions**. You can't take *these* books home with you, though!

● Find out more at humanlibraryaus.org



Meet Shelly Moreton, a '**human book**' sharing tales of growing up Indigenous in Brisbane!

3

FAST FACTS!

Pancake Day

Also known as Shrove Tuesday, **25 February** is a day to scoff flippin' delicious circles of fried batter – but why? Read on to find out...

1 **Shrove Tuesday** is the day before the beginning of **Lent**, the **40-day period** when **Christians fast** or **give up bad habits** to remember the time that **Jesus Christ** spent fasting in the **desert**.


2 **Eating pancakes** on this date became a custom because it was a good way to **use up all the eggs, milk and fat** that couldn't be eaten during Lent. It also stopped any waste and was the last chance to have a **good old feast**!

3 The record for the **most pancake tosses in one minute** was set by **Australian chef Brad Jolly** in **2012**. He flipped his tasty treat an incredible **140 times**. See if **YOU** can beat that this Pancake Day!

Best served with sugar and lemon!



Teen discovers planet!

 Bright star **Wolf Cukier**, 17, was just three days into his **internship** at **NASA** when he spotted something interesting through the powerful **TESS satellite** he was monitoring. TESS takes **images** of **distant solar systems** so that scientists can observe how the brightness of stars changes over time, and Wolf noticed a **dip in the brightness**... it turned out to be a previously unknown **planet**!

Further investigations revealed that the planet, named **TOI 1338 b**, is **6.9 times larger than Earth**, orbits **TWO stars** and is only the **13th planet** of its kind ever discovered. Nice one, Wolf!



Crazy new tech!

 The latest **new technology** was showcased in **Los Angeles, USA**, last month, at the **Consumer Electronics Show** – and it was as **wacky** as ever! Some of our fave inventions include a **bike that can ride on water** (right) and a yummy new **meat-free 'pork'**. If you **hate brushing your teeth**, you'll love the **Y-brush**, a **toothbrush** that cleans your gnashers in **10 seconds** – just place it over your teeth and let it jiggle about! Plenty of **robot pets** were on display, too, including an extremely lifelike **cuddly puppy** called **Tombot**, designed to be a **friendly companion** for **elderly people**. Aww-some!



Turn to page 34 for more top tech!



Busójárás

FEB

20-25

FEB

It's carnival season in **Hungary**, which means loads of festivals are taking place with the aim of **scaring winter away**! **Busójárás**, held in the town of **Mohács** is one of the biggest, and was created by an **ethnic group** of people known as the **Šokci**.

According to legend, the tradition began in the 16th century, when **Ottomans** invaded. The townspeople hid in the nearby swamps, until an old Šokci man told them to **carve masks** and **prepare for battle**! When they reappeared, the invaders thought they were **demons** and fled!

Today there's a **six-day party** with 'Busós' dressed in **sheepskins** and **masks dyed with animal blood**. Yikes!

MAKE IT A DATE

What's going on this month?

FEB

17

Random Acts of Kindness Day

Do something sweet for no reason!

FEB

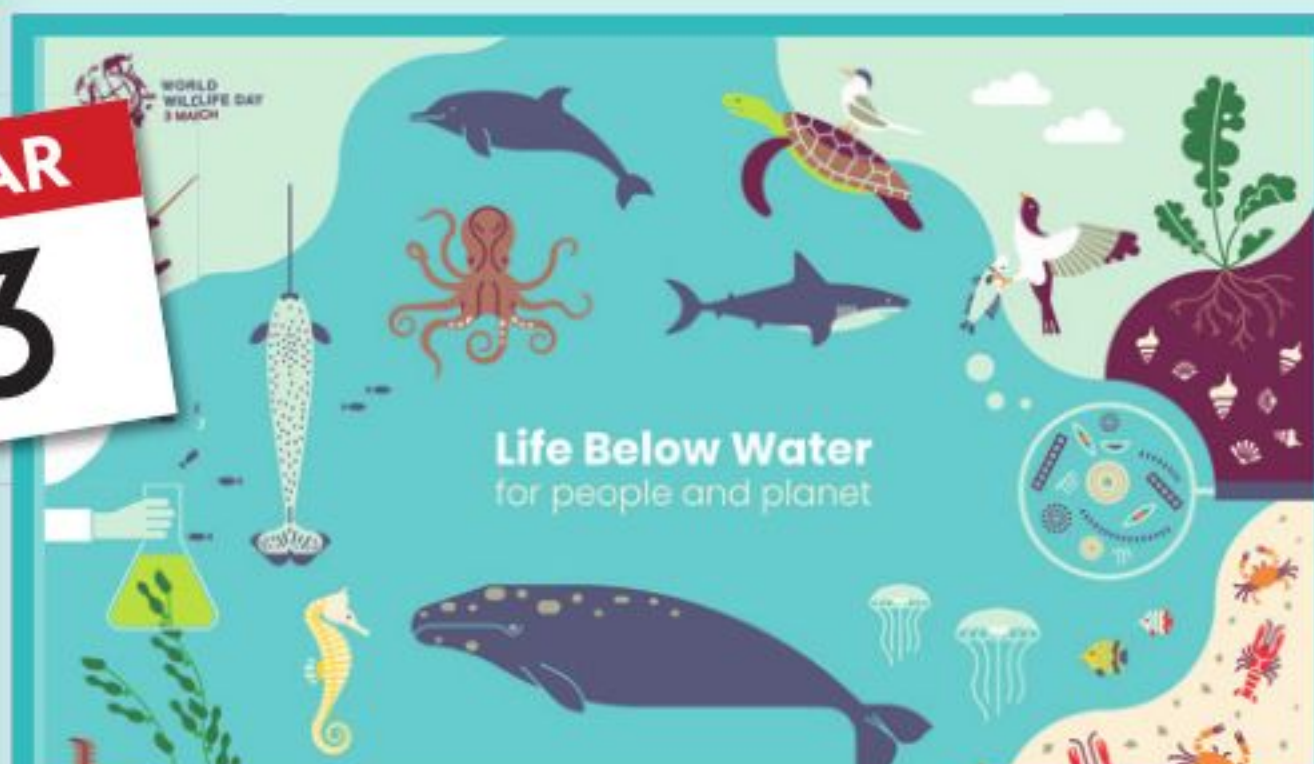
28

School Clean Up Day

Step up to clean up!
cleanupaustraliaday.org.au

MAR

3



World Wildlife Day

The theme is *Life Below Water*!
wildlifeday.org

MAR

8



International Women's Day

Celebrate the achievements of women around the world!

MAR

21



World Poetry Day

Today is the time to make things rhyme!

WHAT'S UP?

Films, TV, books, events and podcasts to get excited about this month...

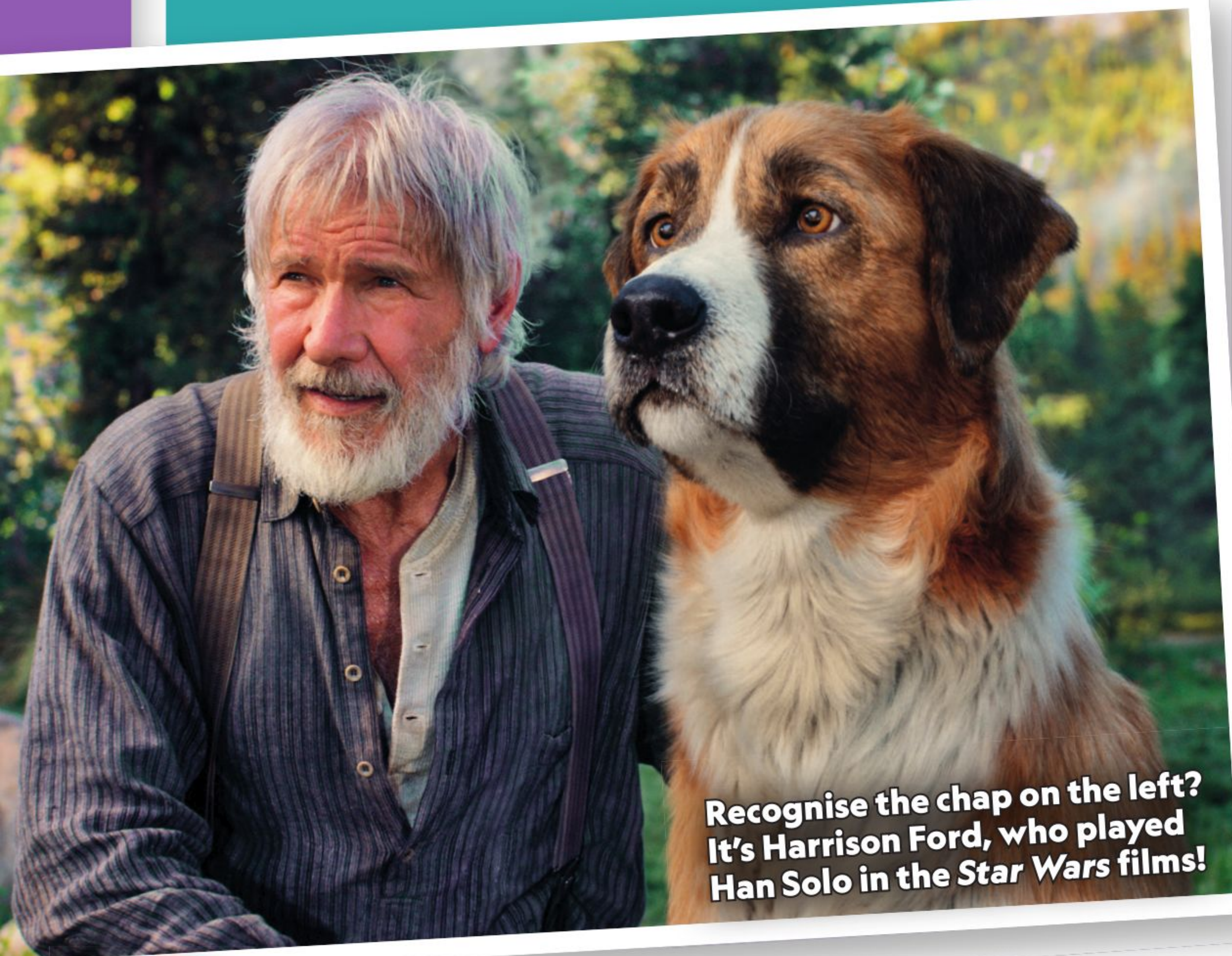


The Call of the Wild

Here's a film to get your tails wagging. It tells the *tail* of pet dog **Buck**, who has a pretty sweet life in sunny **California, USA**. But everything changes one day when he's snatched and taken north to the icy wilderness of the **Yukon**. *Brrr!*

The once pampered pup has to adjust to a new life working in a **dog sled team**. Pretty *ruff*, right? But Buck's experiences in this frozen land will help him find his true place in the world, as he befriends **John** (below) and answers *The Call of the Wild*.

● In cinemas 28 February



Recognise the chap on the left? It's Harrison Ford, who played Han Solo in the *Star Wars* films!



Sonic the Hedgehog

Your **folks** probably played the **Sonic** video game when they were kids – so they might be even more excited about this **live-action movie spin-off** than you are! Sick of everyone pinching his powers, the **world's speediest hedgehog** comes to Earth. But after accidentally knocking out the power supply, the authorities – led by sinister **Dr. Robotnik** – are on his spiky tail! Can his new human pal **Tom** help him evade capture and save the day?!

● In cinemas from 23 February

WIN! Ten winners will each scoop a **goody bag** containing a **double pass**, **protein shaker**, **light up shoe clip** and **phone grip**. Cool! Head to **natgeokids.com** to answer this question...

Q What's the name of the actor who plays Dr. Robotnik?
a) Jim Carrey b) Jim Careless c) Jim Karoo



ARTY FARTY: A Podcast for Kids

Think **podcasts** are just for **adults**? Think again!

The **Sydney Opera House** has **two brilliant series** for its **Arty Farty** kids' podcast. ***Creative Conversations*** features in-depth chats with top children's authors like **David Walliams** and **Jessica Townsend**, who wrote the ***Nevermoor*** books, and investigates the secrets behind their stories. And ***This Kid Life*** is a series that puts kids behind the microphone to discuss life as they see and experience it. Tune in!

● Listen via **iTunes**, **Spotify** or **SoundCloud**

Arty Farty

A Podcast for Kids



It's David Walliams!



Author Jess!



Check out Dr. Robotnik's tremendous 'tache!



Watch out, Sonic's about!

Enter ALL comps at
natgeokids.com

KEY



Show



Movie



DVD



Podcast



Book



TV

Taronga: Who's Who in the Zoo

Go **behind the scenes** in one of the world's most famous zoos in this gripping new **documentary series**. Cameras capture all aspects of zoo life from the logistical task of **transporting gorillas** within the zoo, to **emergency surgery** on koalas affected by **bushfire**. Plus, learn about special **Australian sea lion breeding programmes** and watch as keepers struggle to **clean an elephant's teeth**. Nowhere is off limits!

● Starts Saturday 8 February, 7pm on Nine

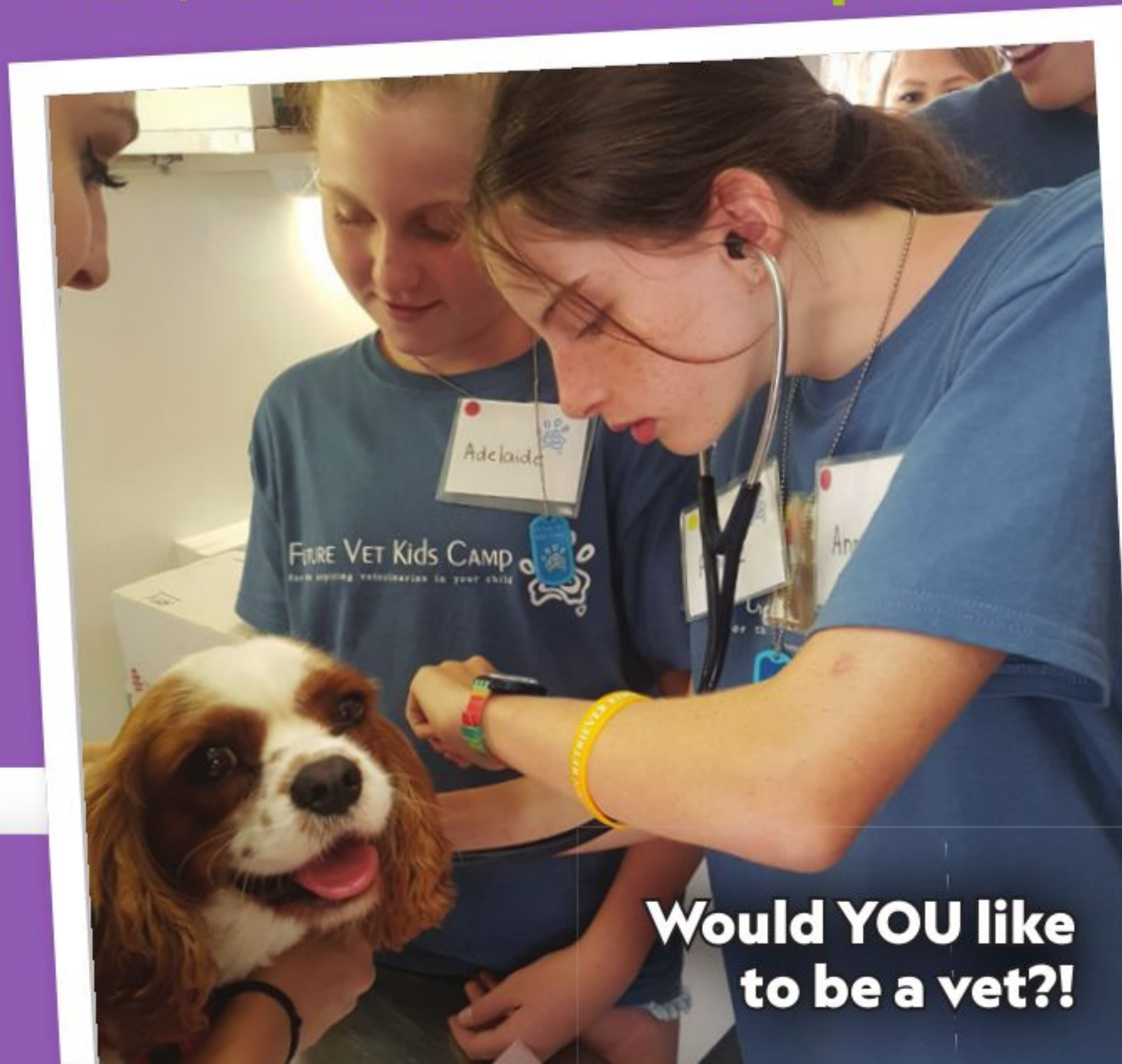


Taronga Zoo is 101 years old!

Future Vet Kids Camp

Fancy being a **vet** when you grow up? Well, now you can **try out the career** of your dreams at this amazing **holiday camp**! If you sign up, you'll be **taught** by highly qualified, enthusiastic **instructors** and specialised **animal handlers**. It's the perfect place to explore all things furry, fuzzy, four-legged, creepy, crawly, feathery or scaly!

● Future Vet Kids Camp will run during Term 2 NSW School Holidays from 20–24 April, in Stanmore, NSW. To discover more, visit futurevetkidscamp.com

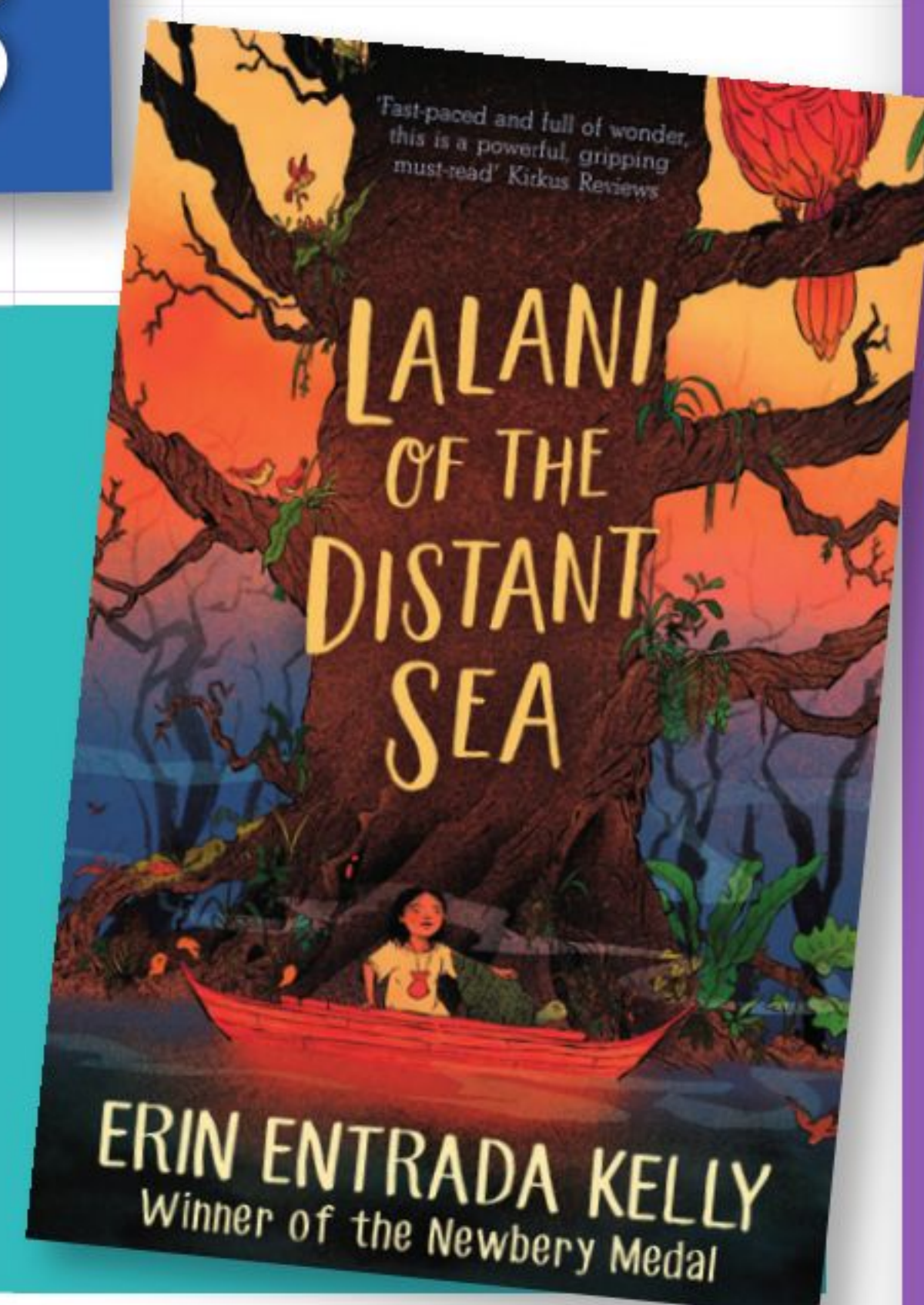


Book Reviews

Lalani of the Distant Sea

Erin Entrada Kelly

Twelve-year old **Lalani** isn't what you might consider **bold** or **adventurous**. So when her **mother** falls under a **deadly curse**, this **brave young heroine** must summon all her **courage** and **journey** to the **mythical mountains** to find a cure. But if no **grown man** has ever returned from such a dangerous mission, what hope does an **ordinary girl** have? Inspired by **Filipino folklore** and full of **magical creatures**, this book will have you racing through the pages.



Edie's Experiments

HOW TO MAKE FRIENDS



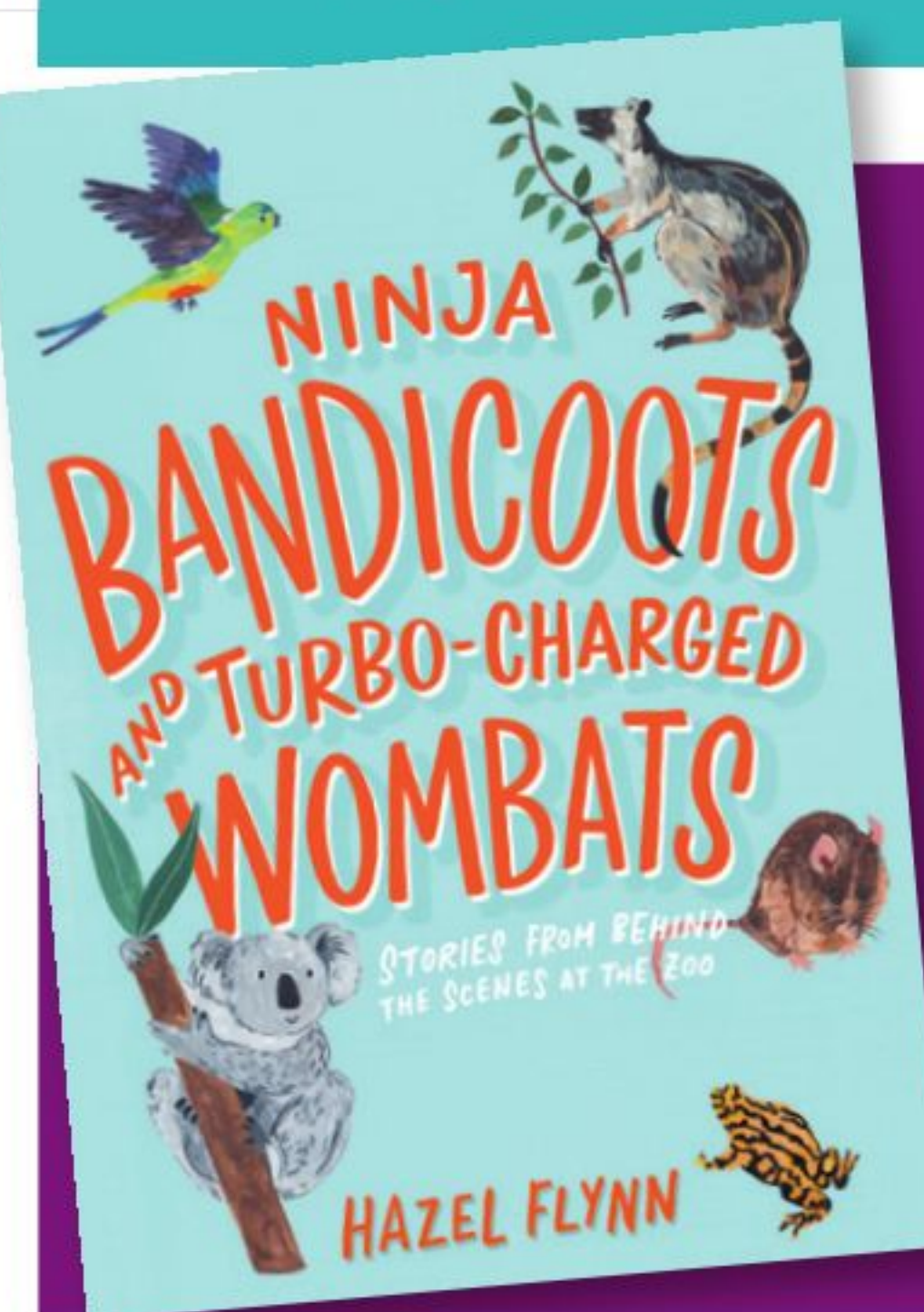
Edie's Experiments

Charlotte Barkla

When **science-loving Edie** starts at a **new school**, her attempts to **make new friends** are scuppered by her **explosive experiments**! Because **sliming an entire classroom** and mixing up the **wrinkle cream** aren't the best ways to stay out of trouble with teachers, new class-mates and the principal. This heartwarming, fun story is a blast – literally!

Madam C.J. Walker Builds a Business & Ada Lovelace Cracks the Code

These new **fictionalised biographies** tell the tales of two **awesome women** – **Madam C.J. Walker**, America's **first self-made millionaire**, and Britain's **Ada Lovelace**, who was the **first ever computer programmer**, despite living in the **Victorian era**! Find out about their early lives and **inspiring achievements** – then turn to the back pages to try out some **interactive exercises**!



Ninja Bandicoots and Turbo-Charged Wombats: Stories from Behind the Scenes at the Zoo

Hazel Flynn

Why are **1,000 trees** needed for every **koala** in a zoo? How do you **check a tree-kangaroo's pouch** for **joeys**? And how do **dogs** help look after 'extinct' **bandicoots**? Find the answers to all these questions and more in this book of **behind-the-scenes stories** from an **Australian zoo**! Plus, discover what it's **really** like to be a **zookeeper**, and learn **fascinating new facts** about some of **Australia's most loveable and rare creatures**. Wild!

There are 14 different species of tree kangaroos!

WIN! Five winners will grab all of these books! Head to natgeokids.com and answer this question...

Q Where do tree kangaroos NOT live?

a) Australia b) England c) Papua New Guinea

Enter by
26 March!

THE

BIG PICTURE

NAT GEO KIDS'
image of the month





Why did the sloth cross the road?!



Photographer **Andrew Whitworth** got a surprising sight when he drove along **Costa Rica's Osa Peninsula** one dark stormy day – a female **three-toed sloth** was *very slowly* **crossing the road**! Luckily, the drivers spotted her in plenty of time and she got all the way to the other side!

The sweet snap scooped Andrew first place in the **People and Nature category** of the **British Ecological Society's** annual **photo competition**, which asks entrants to capture **flora** and **fauna** from across the planet.

WILD PAREN



First up, let's meet some of the animal kingdom's most **selfless** and **caring** parents – and they're NOT the ones you might expect...

Self-sacrificing spiders!

Most mums would do anything for their kids, but some spider species take it to the limits! Like the **black lace weaver spider**, found in **Europe** and **North America**, for example. So that her precious spiderlings get enough nutrients, this spider mum lets them **eat her alive**. Arrgh! First, she lays some **unfertilised eggs** for them to scoff. And when the eggs have been gobbled, she encourages her babies to devour *her*. Snack attack!



There's a nifty name for when mums feed themselves to their babies – **MATRIPHAGY**. Don't get any ideas, kids!

I've made a right meal of myself!

I can't tell my eggs apart – they're i-tentacle!



Egg-cellent octo-mums!

Octopus mums only reproduce once in their lifetime, so they make it count! When a female lays her **clutch** of eggs – and some lay **tens of thousands** – she devotes herself to them full time. She gently **cleans** them, **blows** water over them, and **protects them from predators**. What a great mum!

Unfortunately, she takes no time off to **feed herself**, not even a lunch break, and so **dies shortly after her eggs have hatched**. One deep-sea octopus was recorded guarding her eggs for nearly **four-and-a-half years**... and may not have eaten for the entire time. That's dedication!

...TING!

Do your folks ever drive you potty? Well, let's see how their parenting styles stack up against some of the best – and worst – animal parents!

Caring cockroaches!

It might be a surprise to find that creepy **cockroaches** make adoring parents! They **feed** and **guard** their young, and **keep them close!** **Pacific beetle cockroaches** and some **hissing cockroaches** (shown here) produce a type of protein-packed '**cockroach milk**' which they feed their nymphs. Yum!

Termites, which evolved from cockroaches, feed their young a **chemical** which **stops them from leaving home**. But is that out of love? It's more likely that they want their kids to help around the 'house'... forever!

Bad parents bug me!

Only about **1% of insect species** show **parental care!**

My mum's better than your mum!

Orangutan mums **carry their babies everywhere** for up to **five years**. They also **hold hands** with their young, known as **buddy travel**. Aww!

Great ape mothers!

Orangutans care for their young for **longer** than any other mammal, except humans. But the mothers don't just **protect** and **feed** their kids – they spend up to **nine years teaching them** how to be wild orangutans. They show them **what to eat** and **where to find food**, how to make tools, and **how to build nests** for treetop sleeping – and nest building is truly tricky, taking **four years of training!** With one of nature's strongest bonds, it's no wonder female orangutans keep coming back to visit their mums until they're **15 or 16**. Maybe they should be called *boomerang-utans*!

Turn the page to read about some parents that *aren't* so adoring...

BAD DADS AND MEAN MUMS!

Would you want to be born to any of this lot?!



Er,
mum, what
happened to
my twin?!

Pick 'n' choose pandas!

These big bamboo-biters may be cute, but in the wild they're **far from perfect parents**. Females often give birth to **twins**. They'll care for them **both** at first – just long enough to work out which cub's the **strongest** and which is weakest. Then they'll focus all their attention on the **strongest cub**, not feeding or caring for the weaker one at all.

Sounds mean? Well, unlike the pandas, it's not that black and white. The mother knows it would be hard to care for them both, and so she'd rather raise **one strong cub** that **survives** than **two weak ones** that might not.

Blood-sucking ants!

Dracula ants, found in the **tropics** of **Asia** and **Africa** don't just feed their young – **they feed ON them!** Unable to digest solid food, instead the adult ants **feed prey to their larvae**, and then **suck their babies' blood** to get the nutrients they need. Wahhhh! Luckily the babies aren't damaged by this blood-thirsty behaviour – but they are permanently scarred!

One ant species from the **floodplains** of **Switzerland** uses its babies to help it float! When **river levels rise** the ants float to safety by **building rafts** from the **fat bodies** of their young!

Thank you,
my precious!



Dracula ant
larva

A Marsh Warbler is shown in a green, leafy environment. It has a blue label with a white arrow pointing to it.

Marsh Warbler

Blimey, they grow up fast, don't they?!

Crafty cuckoos!

Cuckoos don't bother building their own nests – and they don't look after their young, either! Instead, they sneakily **lay their eggs in other birds' nests**, so those unwitting adopters can bring up their chicks. One cuckoo can lay up to **25 eggs** in different nests in a single summer!

The **cuckoo chicks do well** out of it, though – despite being a complete nightmare for their new 'family'! They **shove the other eggs – or chicks – out of the nest** so they can claim it for themselves. Then they feed quickly, often growing larger than their 'parent'. How rude!

A cuckoo chick is shown in a nest made of straw. It has a blue label with a white arrow pointing to it.

Cuckoo chick

A large bass fish is shown swimming in water. It has a blue speech bubble with text.

Er, bass-ically, I got hungry!

Baby-killing bass!

Male **bass** fish start out being top dads, **protecting their newborns**, until most have swum away. But then they decide to reward themselves for being such great fathers by **eating the remaining young**. Yikes!

In fact, **many species** of fish **eat some of their offspring**. Confusingly, it's most common in fish that also **care** for their young. Some experts think it may be to help the others to survive as there'll be **less competition for grub**. That's *food* for thought!

Other bad dads include polar bears, who attack their young, and grizzly bears, who sometimes eat their offspring when hungry. It doesn't *bear* thinking about!

A snake is shown with its mouth open, eating a red egg. It has a blue speech bubble with text.

Muum! Come back!

SORRY KID, YOU'RE ON YOUR OWN!

Many animal eggs or babies are completely **abandoned at birth**, left to take care of themselves. Most **snake mums** desert their eggs soon after laying them, and don't come back (left). **Butterflies and moths** lay their eggs on plants, then *leaf* them to fend

for themselves. But some babies that *seem* to be abandoned may not be. For example, **rabbit mums** spend lots of time away from their young, but they're not being uncaring. Quite the opposite! It helps to **stop predators finding the burrow**.

Who you callin' terrible?

1 English scientist **Richard Owens** coined the term '**dinosaur**' in the 1800s. It means '**terrible lizard**.'

PLATEOSAURUS

2 **Mamenchisaurus'** neck was up to **9 metres long**. A giraffe's neck is only about **1.8 metres long**.

5 Dinosaurs roamed the Earth for about **175 million years**. Humans have only been around for about **200,000**.

A **Spinosaurus** (right) battles an **Onchopristis**

3 Most dinosaurs could swim.

4 In 1823, English fossil collector **Mary Anning** discovered the world's first complete fossil of a **Plesiosaur**, a prehistoric marine reptile.

6 Reaching speeds of up to **40kmph**, a **Velociraptor** could have kept up with a slow-moving car.

7 **Tyrannosaurus rex** could gulp down **45kg of meat** in one bite.

That's about the same weight as **187 Big Mac burgers**.

30 COOL THINGS ABOUT

8 All dinosaurs walked on their toes.

9 **Sinornithosaurus**, a feathered turkey-sized dinosaur, might have had a **venomous bite**.

10 One tooth is all palaeontologists need to identify a dinosaur.

12 On average, a new species of dinosaur is found every week.

TARBOSAURUS

13 **Shantungosaurus** had **1,500 teeth**, likely more than any other dinosaur.

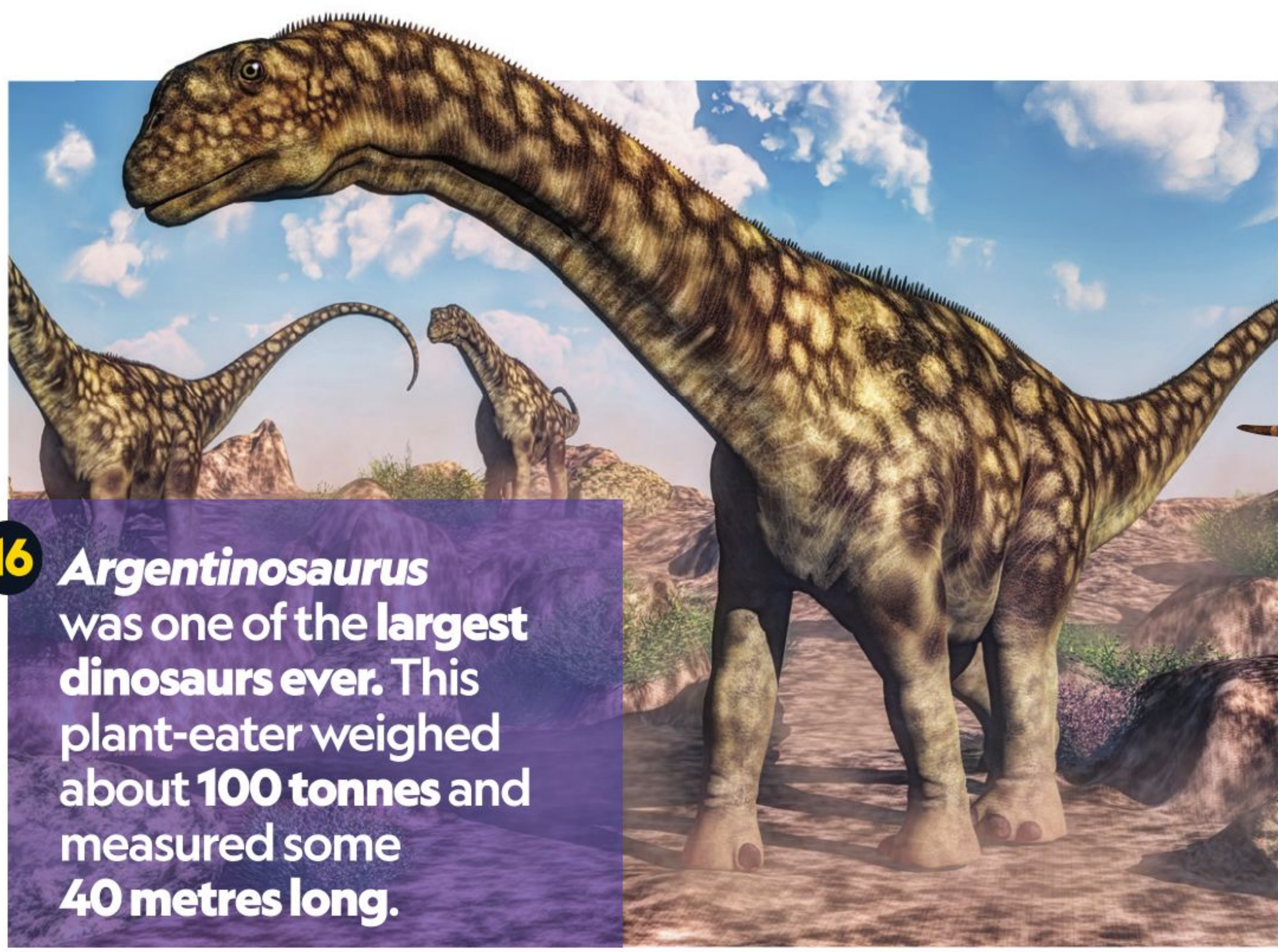
IGUANODON FOSSIL

More than 80% of all dinosaur fossils are **discovered by accident**.

14 A baby **T. rex** was about the size of a **chicken** when it hatched.

15 Only about **2,000 nearly complete dinosaur skeletons** exist in the world.

T. REX SKELETON



16 **Argentinosaurus** was one of the **largest dinosaurs ever**. This plant-eater weighed about **100 tonnes** and measured some **40 metres long**.



MICRORAPTOR

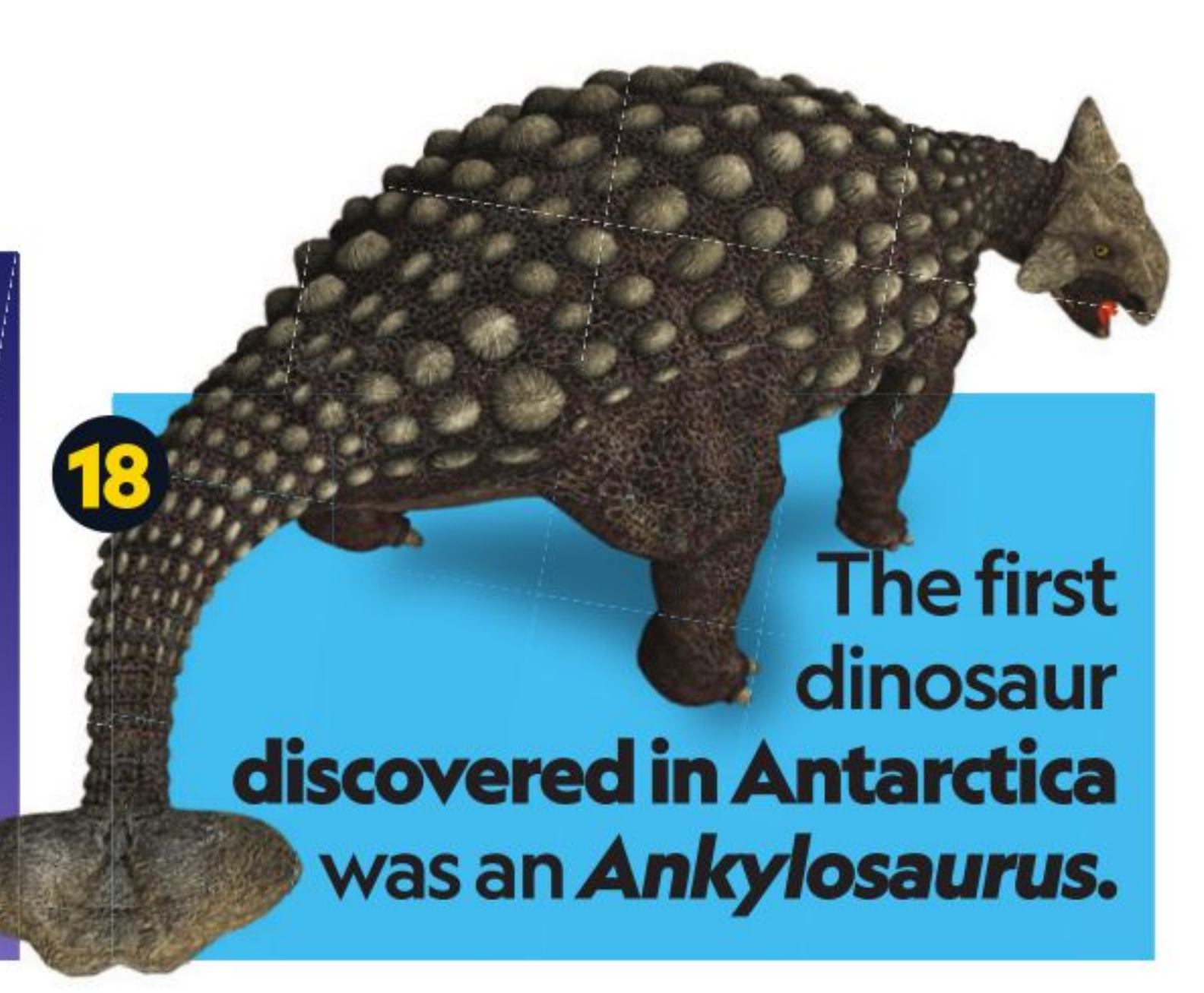
20 The **smallest dinosaurs** were tiny enough to hold in your hands.



21 The slow-moving **Ankylosaurus** used its **clubbed tail** to beat off attackers.



17 **Fruitadens** was about as tall as a **toy poodle**.



18 The first dinosaur discovered in **Antarctica** was an **Ankylosaurus**.

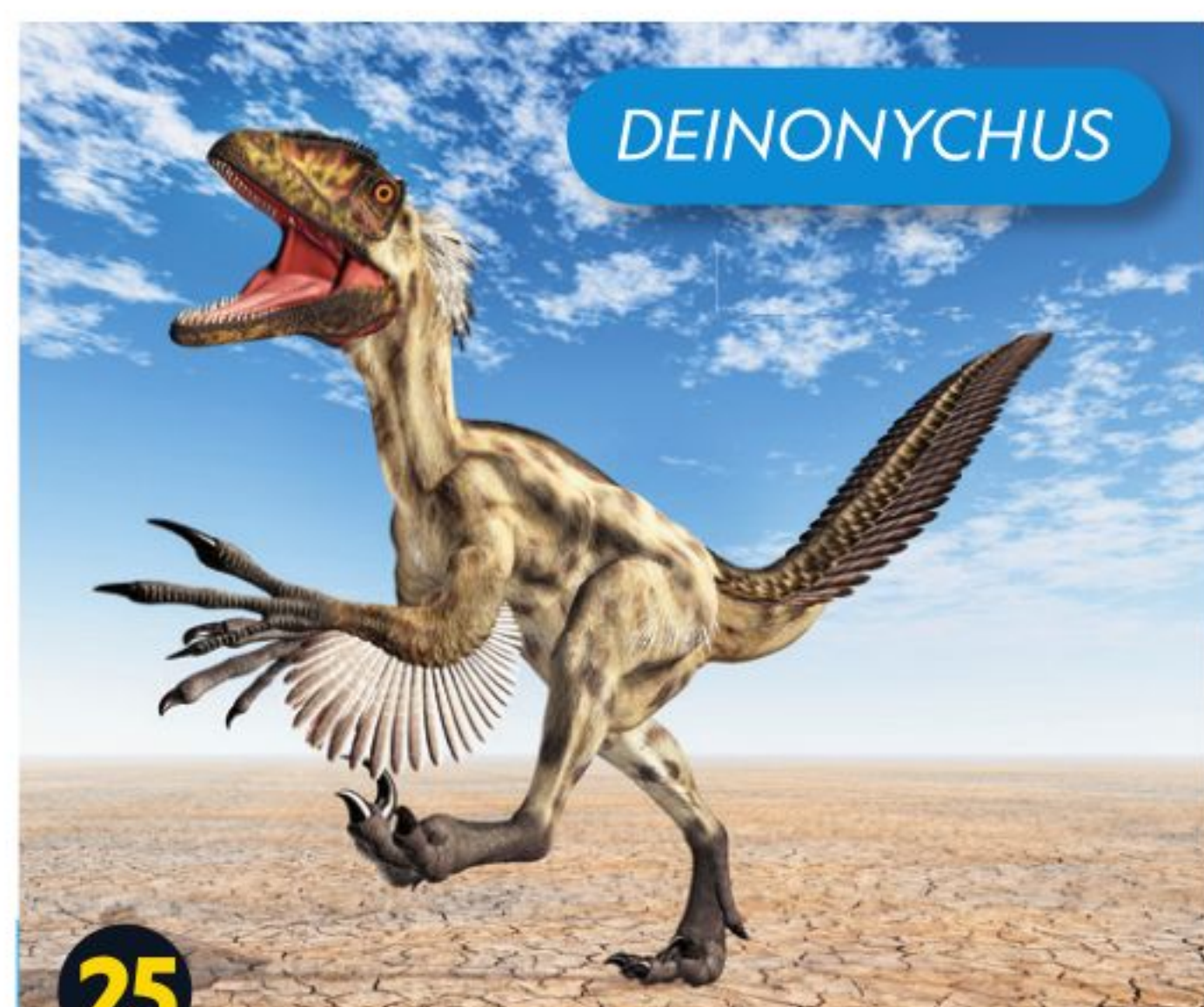
19 The toothless **Conchoraptor** was named for its beak, which was believed to have been **strong enough to crack open conch shells**.



EINIOSAURUS

22 You drink the same water that the dinosaurs did.

DINOSAURS

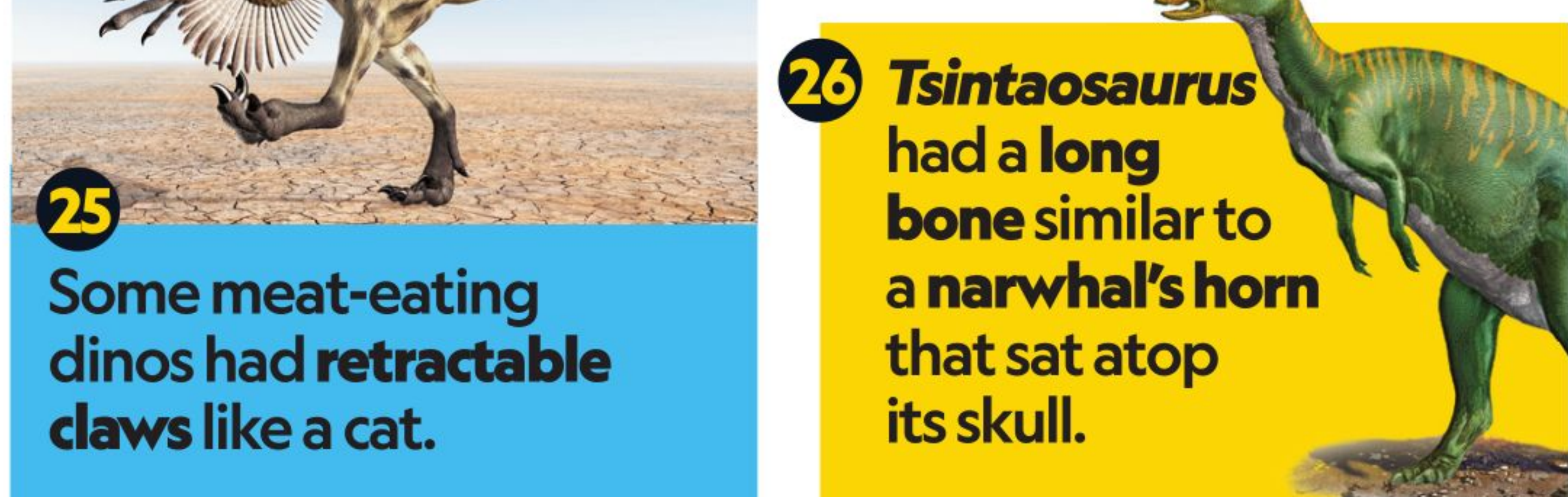


DEINONYCHUS

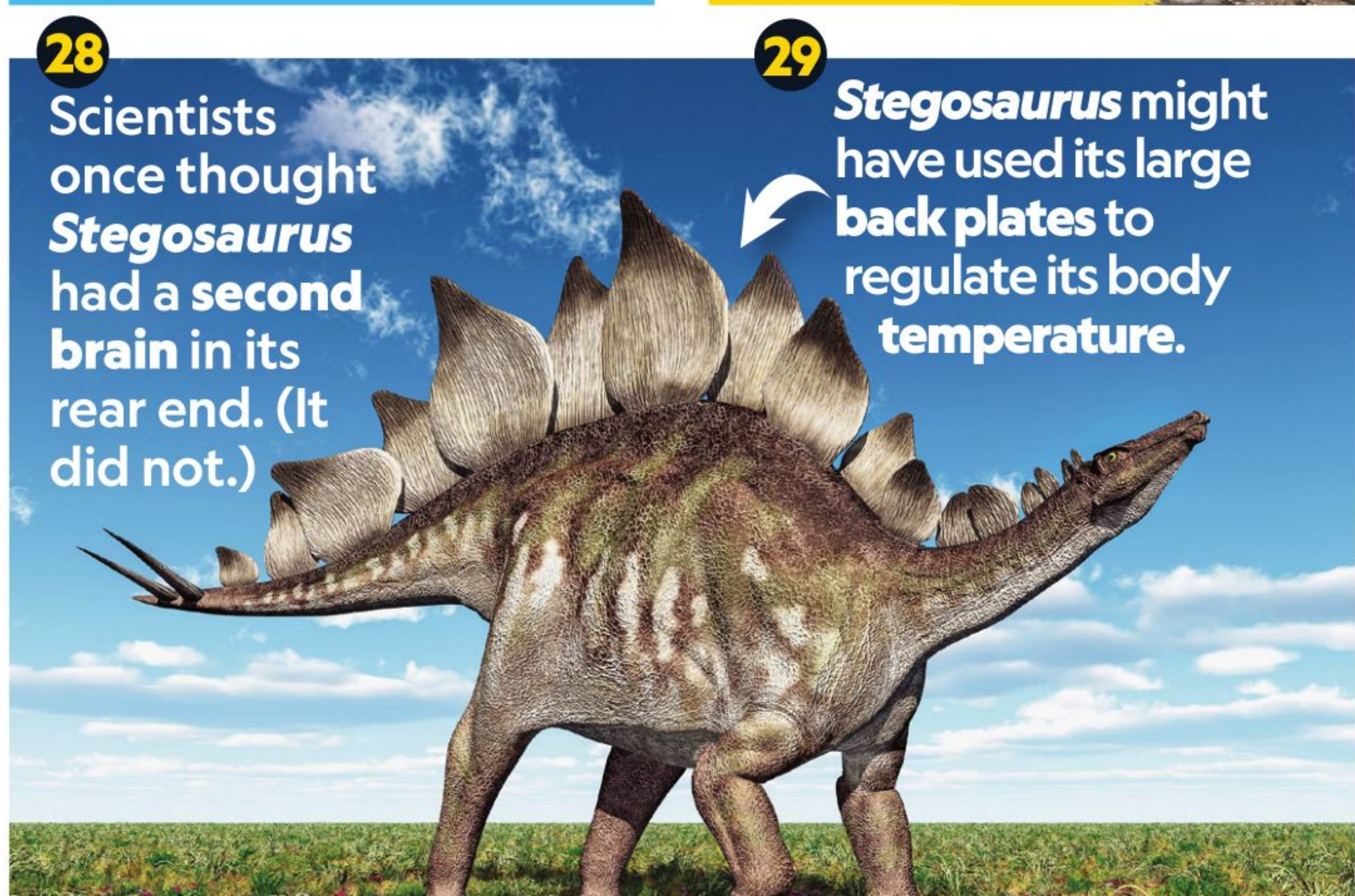
25 Some meat-eating dinos had **retractable claws** like a cat.



23 **Leaellynasaura**, a dinosaur that lived near the **South Pole**, had **large eyes** to help it see during the coldest, darkest months of the year.



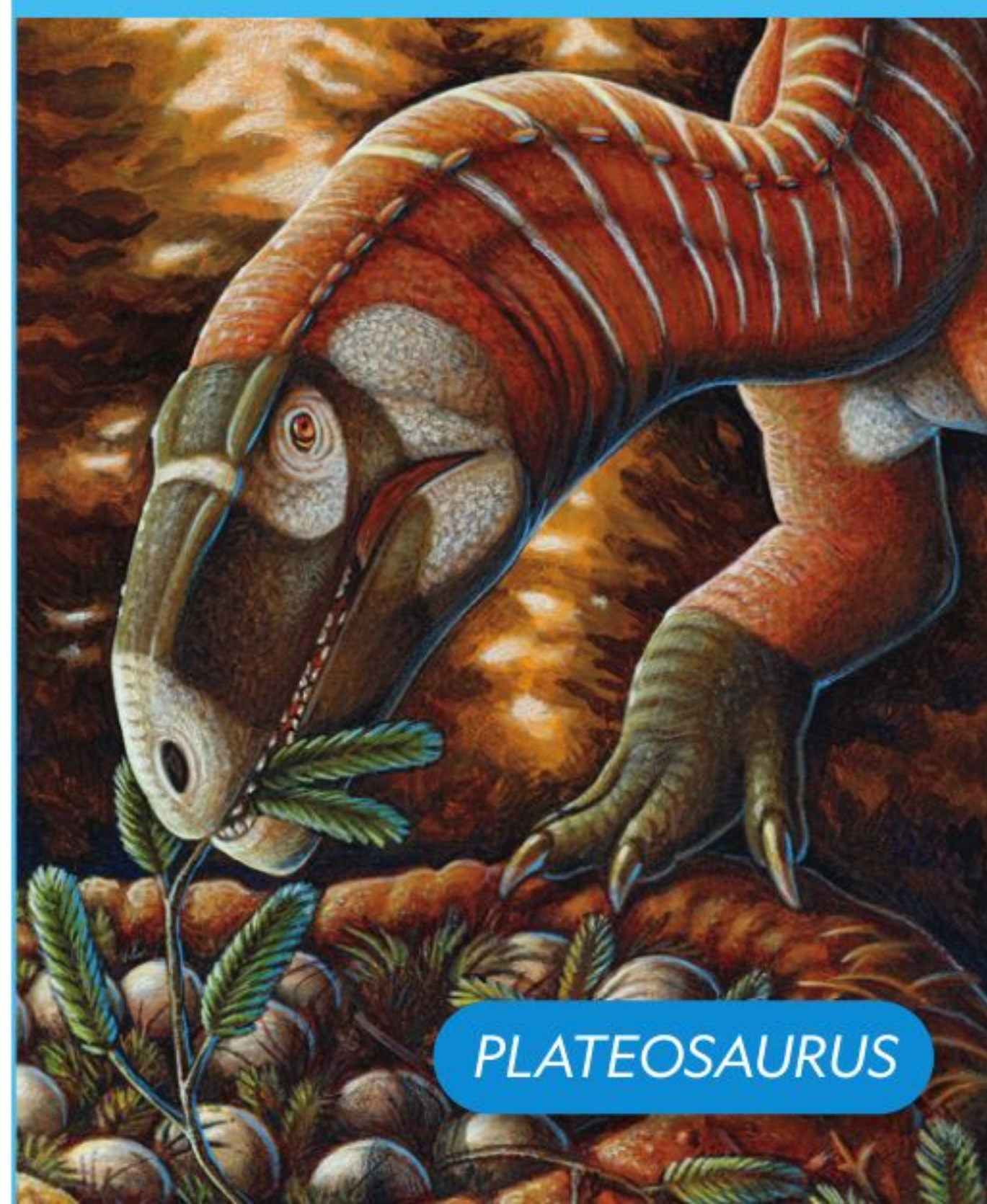
26 **Tsintaosaurus** had a **long bone** similar to a **narwhal's horn** that sat atop its skull.



28 Scientists once thought **Stegosaurus** had a **second brain** in its rear end. (It did not.)

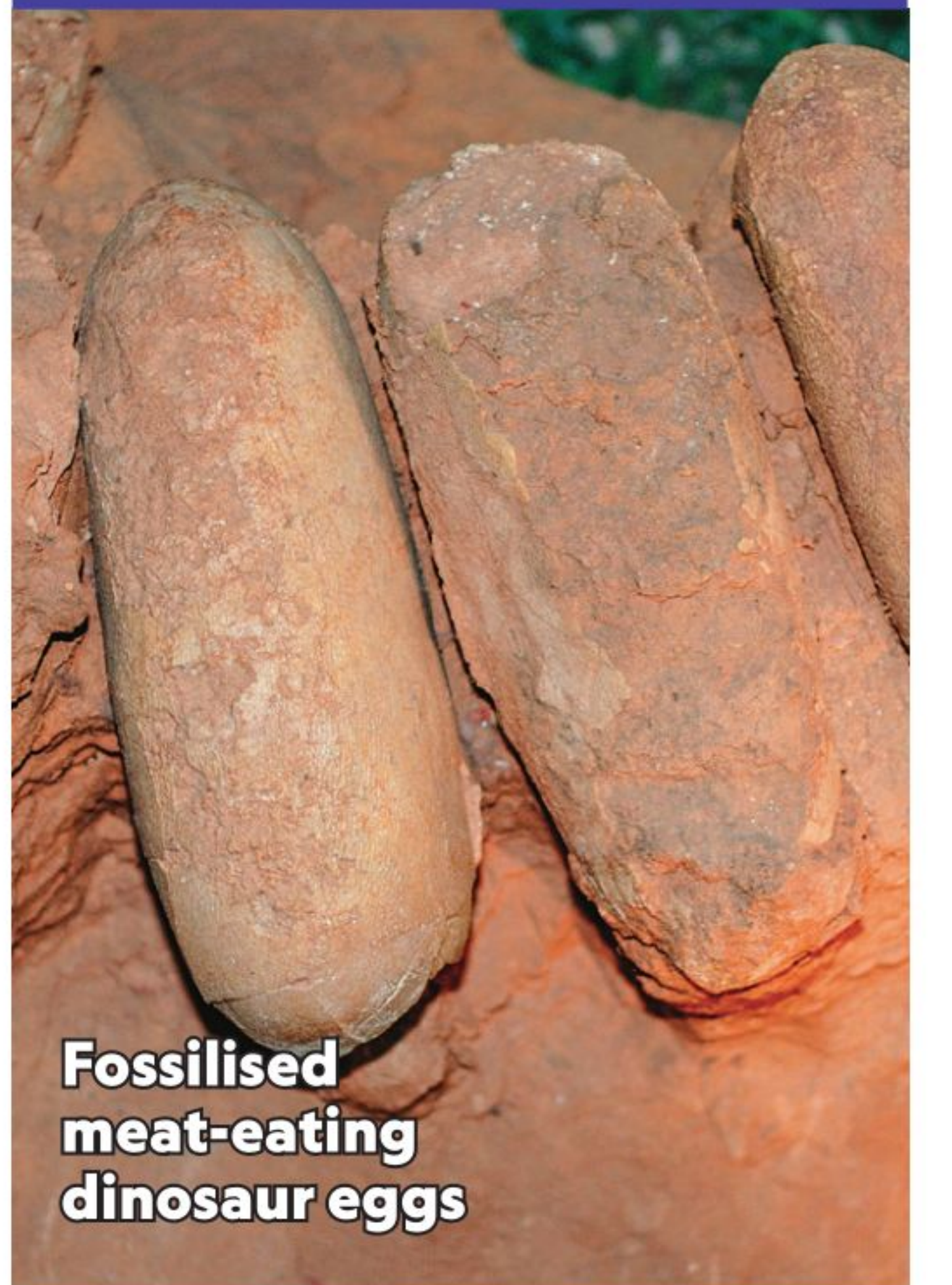
29 **Stegosaurus** might have used its large **back plates** to regulate its body temperature.

27 Scientists think big dinosaurs were probably **too heavy to sit on their eggs**, so instead they piled plants on top to keep them warm.



PLATEOSAURUS

24 **Meat-eating dinosaurs** laid long, thin eggs, but **plant-eaters** laid round eggs.



Fossilised meat-eating dinosaur eggs

30 No one knows what **colour dinosaurs** were.

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WHAT IS AVAXHOME?

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HOW TO HELP

Australia's animals are suffering in the terrible bushfires. Here are some ways to help...

AT HOME...

If you live near where fires are burning and have a **garden or yard**, animals may pass by seeking **shelter** and **water**. Here's what you can do for them...

1 PUT WATER OUT

Leave containers full of **cool water** all around the outside of your property at different heights and locations. **Change the water every day**. Remember to **place sticks or stones** in the container so **smaller animals can get out** if they fall in!



2 KEEP PETS INSIDE

If there are injured or vulnerable animals in your garden, **make sure your pets stay inside your home** – they could cause more distress to the wild creatures.



3 MAKE YOUR POOL SAFE

Got a **swimming pool**? Drape something over the **edge of your pool** so that animals can **grab hold of it** and **climb out** if they need to, such as a length of **heavy duty rope**. You could also place **bricks** to the side of each pool step to make it easier for animals to climb out.



4 REMEMBER THE REPTILES!

Place some **water containers** around the outside of your property on the **fence line** to provide water for **reptiles**. This will also deter them from coming closer to the house!



ON THE ROAD...

Many animals fleeing from fires are searching for **food** closer to **roads** – so get your family clued up on **wildlife road awareness**...



1 DRIVE WITH CAUTION

Keep an eye out for wildlife on roads – especially during **early mornings, late afternoons** and through the **night** when many **native animals** are out and about. If you do accidentally hit an animal, carefully stop your car and check to see if the animal needs **emergency assistance**.



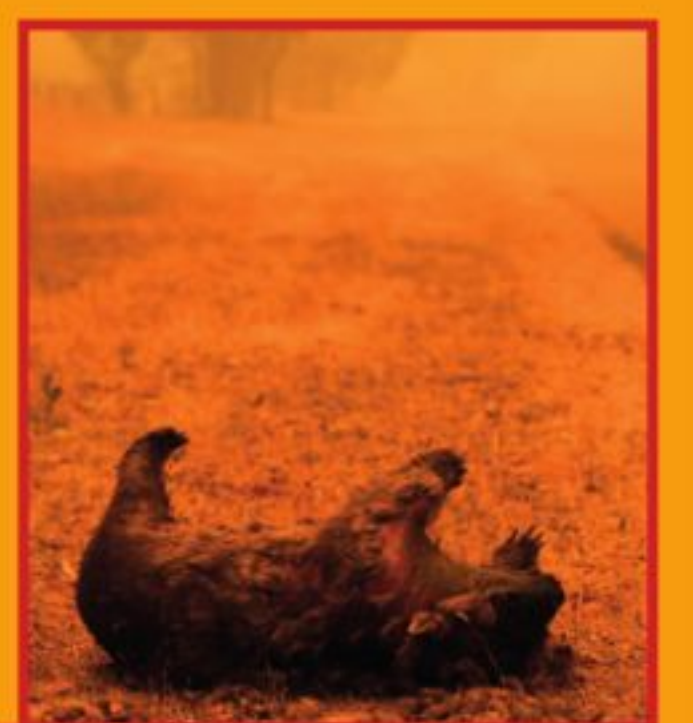
2 LOOK FOR BABIES

Kangaroos, wombats and **echidnas** may be carrying **babies**, so if one has been hit, have a look in their **pouches**. Check the **surrounding area**, too, in case the young have been **thrown from the pouch** during the **collision**. If you find one, **wrap it up** and keep it **warm** and **safe** while you call for help.



3 MOVE DEAD ANIMALS

Large dead creatures can attract **scavenger animals** towards the road to feed, increasing the chances of even **more collisions**. So, **if safe** to do so, you could move the dead animal a few **metres away from the road**.



4 CALL IT IN!

If an animal is **struck by a car**, or you see an **injured** creature by the side of the road, ask your parents to call a wildlife rescue organisation (try **WIRES** on **1300 094 737**).



WHAT TO DO IF YOU SEE A DISTRESSED ANIMAL!

- Offer it **water** in a **shallow dish** and **allow the animal to approach** and **lap by itself**.
- **Gently mist** distressed animals with a **very light spray** of **water** or place a **sprinkler** nearby if possible.
- If you see a **koala** that's too **weak** to approach water, you can try **holding a water bottle in front** of (not above) the koala's mouth and **letting water dribble** from the bottle so the koala can lick it up.



Volunteers give koalas water with a syringe

WHAT TO DO IF YOU FIND AN INJURED ANIMAL!

- First, **call your local wildlife rescue organisation**.
- If safe to do so, **gently wrap** the animal in **100% cotton fabric**, avoiding touching it as much as possible.
- Place it in a **cardboard box** or **well-ventilated container**.
- Either **transport the animal** to a **local vet** or **stay nearby** while you wait for a rescuer.
- Keep the creature in a **quiet dark place** until it can be treated. Place **water** in a shallow dish close by.



WIRES to the rescue!

HELP WILD LIFE!



WARNING!

Never touch a **bat**, **snake**, **flying fox**, **large macropod**, **raptor** or **monitor lizard**, even if they're in trouble. Instead, call a **trained wildlife rescuer**!

A kangaroo's burnt paws have been wrapped in bandages



A baby flying fox being bottle fed by a vet!



CAR RESCUE KIT

If you've got a **car**, think about **carrying these items** in the **boot** so you can always be ready to help!

Hand sanitiser



Torch



100% Cotton

Pillow cases



Towels



Water and a shallow dish



Gloves



Cardboard box with lid or ventilated rescue box



This little joey was orphaned after his mother was sadly hit by a car

For more tips on how to help, visit wires.org.au

THE TIDE IS HIGH!

Nat Geo Kids travels to the Bay of Fundy, on Canada's Atlantic coast, to see the highest tides in the world!



Have you ever built a sandcastle and then

watched as the tide came in and washed it all away? Well, in parts of the Bay of Fundy in New Brunswick, the tides are SO ginormous that even if you built sandcastles the size of four-storey buildings they'd STILL be swept out to sea – the water on this coast can rise 16 metres! As we squelch across the mudflats, our guide Kevin Snair, from Hopewell Rocks Park, tells us why the tides are so freakishly high!



and back out to sea again, it's time for the next high tide to arrive, **pushing the wave of water back up the bay.**

WALKING THE OCEAN FLOOR

At the moment though, the tide is out and we're looking out for birds pecking **mud shrimp** out of the beach. "It's more accurate to describe this as the **ocean floor** than a beach," laughs Kevin. "In just a few hours this spot will be covered with **many metres of sea water.**" Yikes!

DANGER ON THE BEACH!

Soon Kevin checks his watch and tells us it's time to move off the beach. With each tide cycle, over **160 billion tonnes** of water flow in and out of this bay – more than the **combined flow of the entire world's freshwater rivers.** Whoa!

Part of Kevin's job is to 'sweep' the ocean floor for **people**, checking all the coves so that **no-one gets caught by the quickly rising water.** He ushers us up some **steep access steps.** And as the people clear off, watery **wildlife** whooshes in...

FUNDY FEAST

Fundy's powerful tides are the reason for its **thriving marine life.** **Nutrients** are constantly being flushed up and down the bay, creating an **ecosystem** that's rich in **plankton, squid, herring and mackerel,** which in turn

provide food for larger animals such as **dolphins, porpoises, seals** and at least **eight** species of **whale**, including **minke, humpbacks** and **North Atlantic right whales.** This brilliant bay is an **ecological wonder!**



North Atlantic right whales feed in the bay – they're thought to be one of the rarest whale species in the world!

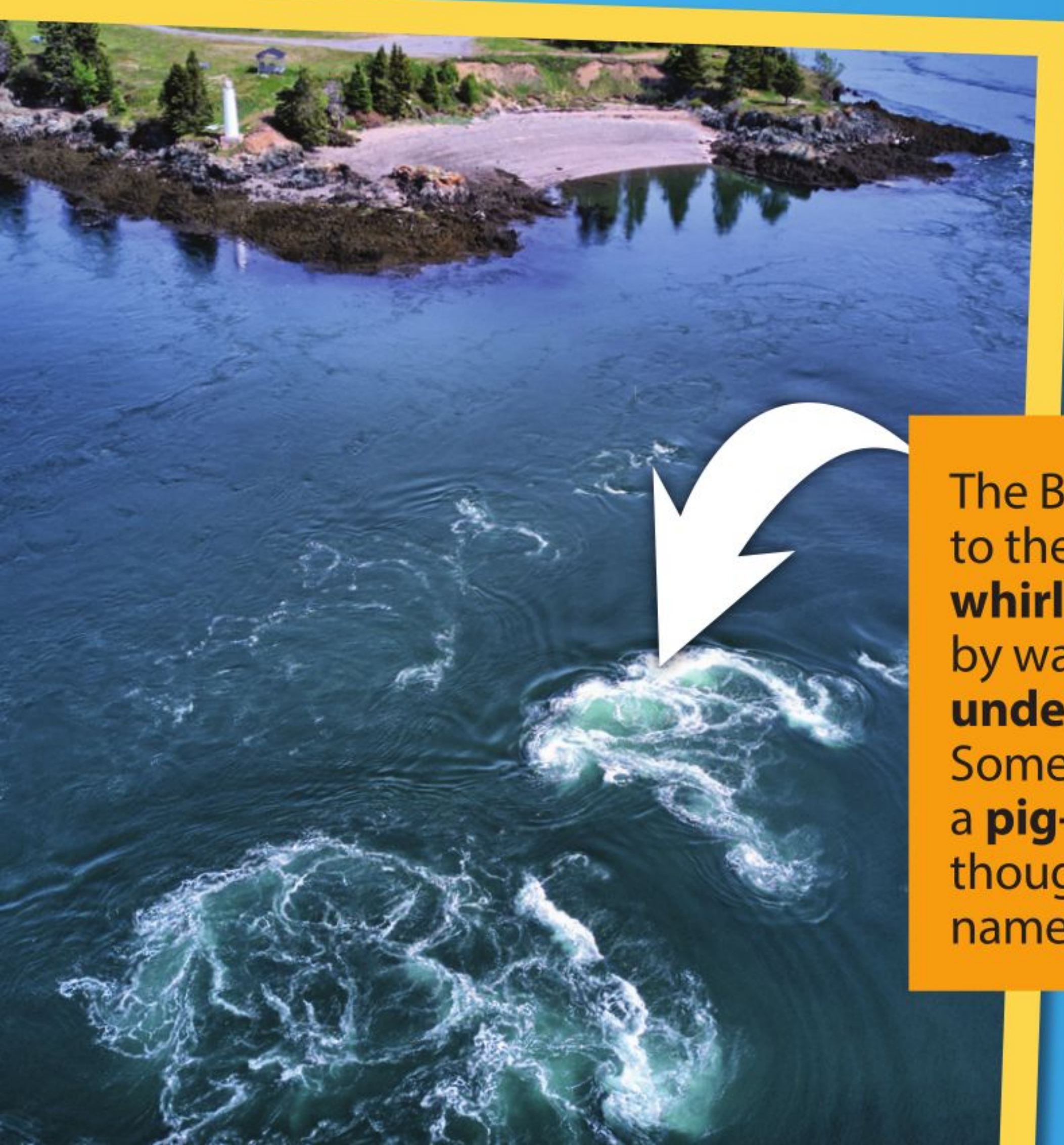
The semi-palmated sandpiper is one of many rare birds that feed here!

MIGHTY MOVEMENT

"It's all because of the **unique shape of the bay,**" Kevin explains. "The Bay of Fundy is shaped like a **long funnel**, wide at its **mouth** and increasingly **narrow** towards the **head** where the bay ends – so, as the sea flows in the water is forced higher. The Bay of Fundy's **length** plays an important role in the height of the tides as well. By the time the tide has flowed all the way to the head of the bay

WHAT ARE TIDES?

Tides are the **regular rise and fall of water levels** in the world's **oceans.** They're caused by the **gravitational pull** of the **Moon** and **Sun** on the **Earth,** and our planet's **rotation.** This **pulling force** causes the **oceans to rise** when the **pull is strong** and **fall** when the **pull is weak.** Most coasts get **two high tides** and **two low tides** every day, with roughly **12 hours** between each high tide.



The Bay of Fundy is also home to the **second largest natural whirlpool** in the world, created by water rushing around an **underwater mountain.** Some say the whirlpool makes a **pig-like noise,** which is thought to be why it gets its name – **Old Sow.** Oink!



The rising tides are so powerful they make the nearby **Saint John River flow backwards!** Water rushes from the ocean into the mouth of the river, causing the flow of water to reverse – creating some **spectacular rapids for kayaking.** Wheeee!

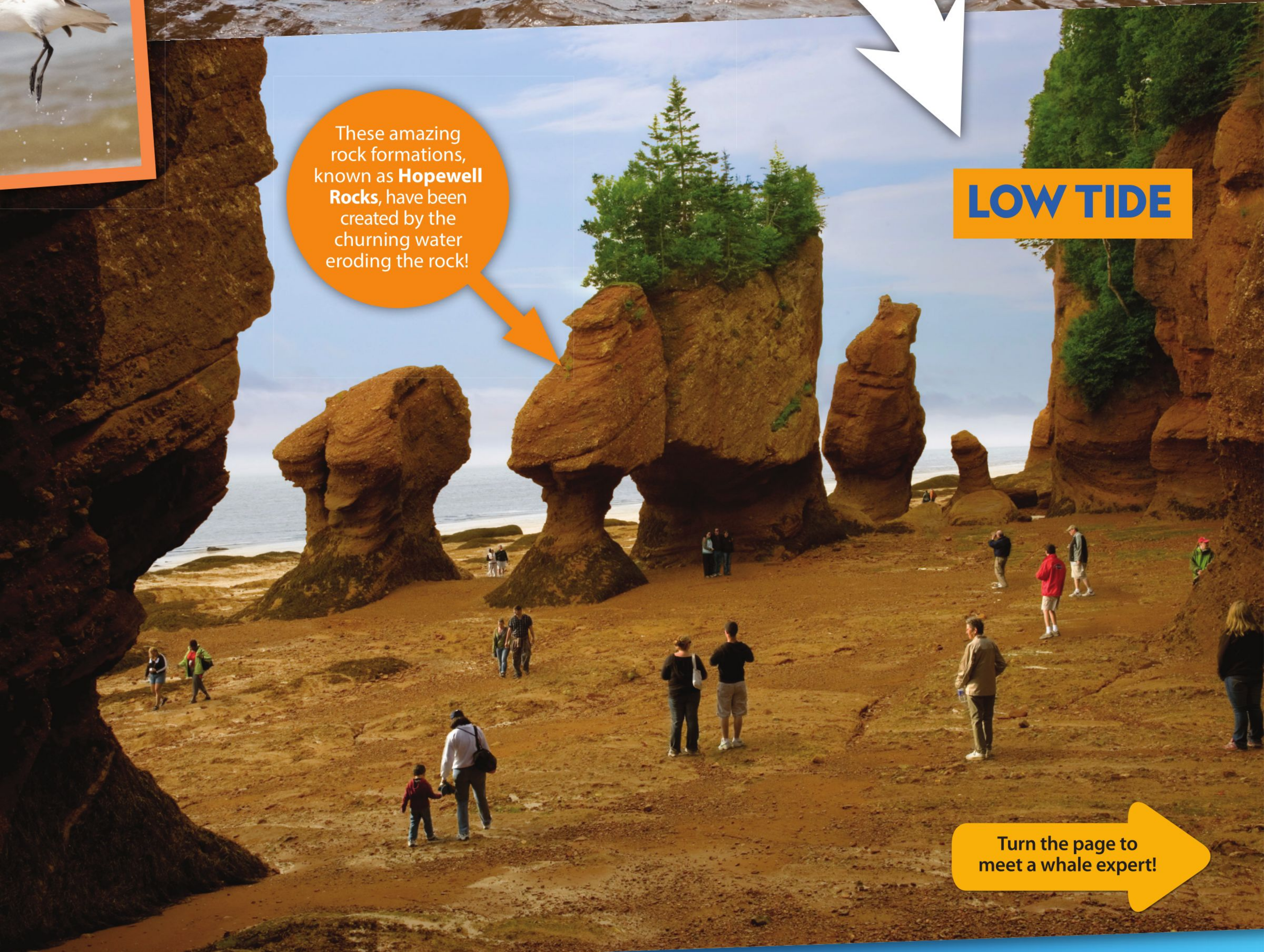


HIGH TIDE



These amazing rock formations, known as **Hopewell Rocks**, have been created by the churning water eroding the rock!

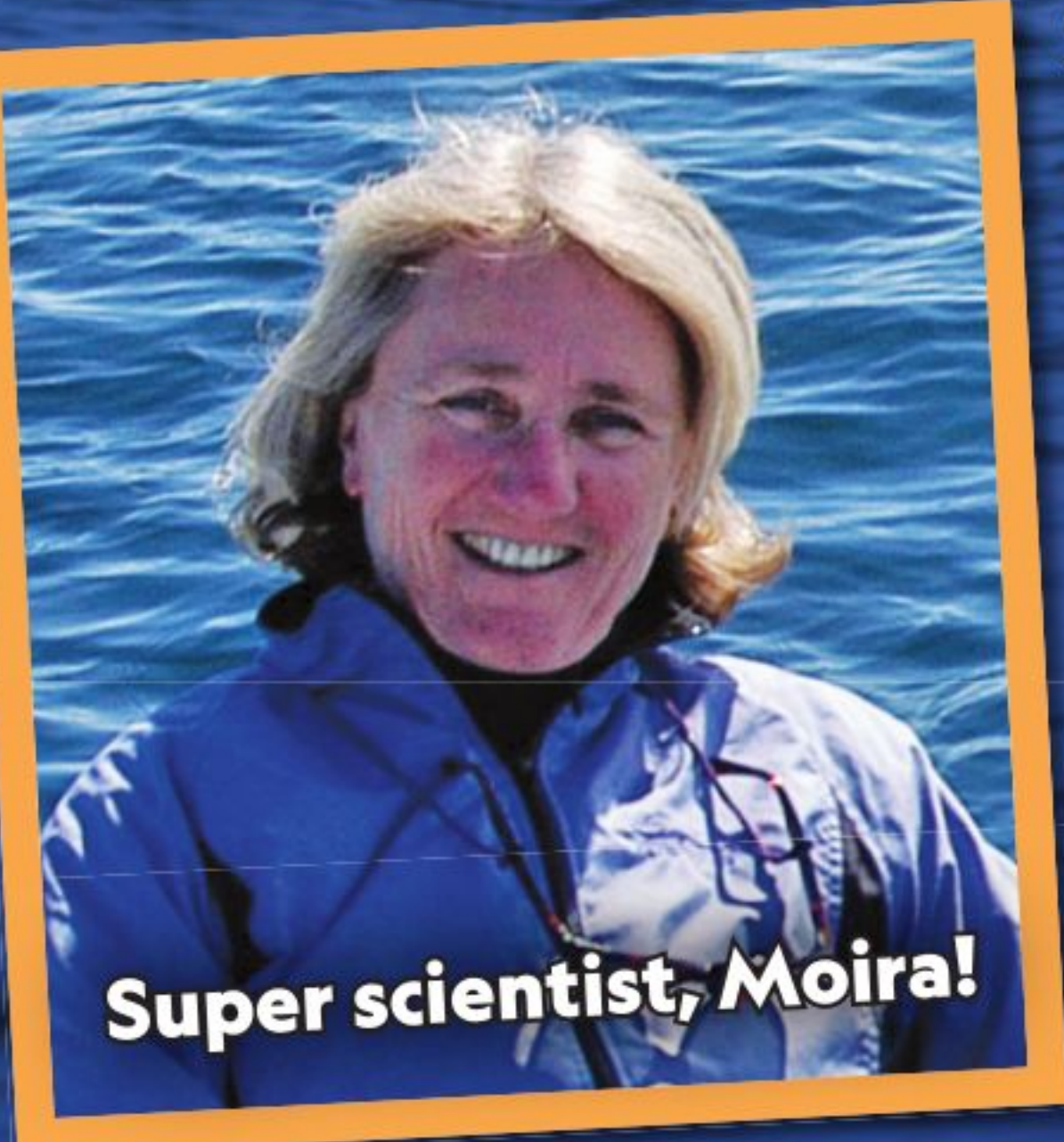
LOW TIDE



Turn the page to meet a whale expert!

WHALE RESCUE!

How humans are helping these marine mammals...



Super scientist, Moira!

up with **Moira Brown**, Senior Scientist with the **Canadian Whale Institute**, to find out more...

Hi Moira! You've been studying North Atlantic right whales for 35 years – why are they so endangered?

Hi Nat Geo KiDS! For **decades**, many North Atlantic right whales spent their **summers** feeding here in the **Bay of Fundy**. But since around **2010** lots of them started travelling further north to find food, possibly because of **warming ocean temperatures**. Their journey takes them through **busy shipping areas**. Sadly, this makes them vulnerable to being **struck by boats** or **caught up in fishing gear**. **What's being done to help the whales?** The **Canadian Government**, the **shipping and fishing industries** and **scientists** are all working together – we've introduced **lower speed limits for boats** and are busy figuring out how we can prevent **whale entanglements**. Here in the Bay of Fundy, I helped set up a specialised **whale rescue team** made up of **local fishermen**. They learned about **whale behaviour** and

Sadly, over **86%** of **North Atlantic right whales** become **entangled in fishing gear** at some point in their lifetime. Thankfully, the incredible **Campobello Island Whale Rescue Team** are on hand to help! We caught

received special training in how to **safely free whales from fishing gear**. Imagine having a piece of **dental floss stuck between your teeth** and trying to remove it **without using your hands** – that's what it's like being an entangled whale! **Sounds horrible! So what happens on a whale rescue?**

We jump in our **rescue boat** and head out to sea. Every entanglement is different depending on the **species of whale**, the **type of fishing gear** it's tangled in and **where it's caught** on the whale's body. We use **specialised tools** to **cut the ropes**, which can take **several hours**, sometimes even **days**, to cut loose. It's dangerous working with animals in water – just imagine trying to cut a rope off a **60-tonne whale**! But successful rescues are so **rewarding** – you feel as if you could run across the water, all the way home! **Amazing! What can Nat Geo Kids readers do to help?** The best thing you can do is to **care for our oceans**. Take part in **beach cleanups**, use **less single-use plastic** and **recycle** any that you do use. Most importantly, **learn as much as you can** about our oceans and **inspire your friends and family** to learn and care about them, too! **Thanks, Moira. Keep up the great work!**

It takes serious skill and hours of training to release a whale from a tangle of ropes like this one!



These whales are still at risk from human activities

5 facts about North Atlantic right whales

- 1 Right whales were once seen as the '**right**' whale to hunt – hence their name. During the late **1600s**, their **oil** was used as **fuel for lamps** and to **lubricate machinery**, while **baleen** was used to make **ladies' corsets**!
- 2 **Baleen** is a **comb-like material** inside the whales' mouths. The super sea creatures feed by **filtering plankton** through it.
- 3 The **third largest whale in the world**, **females** can grow up to **17 metres long** and weigh up to **60 tonnes** – that's about **ten times as heavy as an elephant**!
- 4 North Atlantic right whales develop **large, white bumpy growths** on their heads. These **harmless lumps** form a **unique pattern** that help scientists to **tell the whales apart**!
- 5 North Atlantic right whales are mainly found in the **coastal waters** of the **Atlantic Ocean**.

Head to **natgeokids.com/whale-map/** to see an interactive map of North Atlantic right whale sightings!

Nat Geo KiDS travelled to **New Brunswick** courtesy of **Atlantic Canada, Tourism New Brunswick** and **WestJet**.

Find great things to do and places to stay at **tourismnewbrunswick.ca**

MAX MEETS... Simon, the British Royal Navy's bravest cat

**ANIMAL
HEROES!**

This month, NG KiDS' time-travelling mouse, Max, visits Simon – the feline hero that saved hundreds of lives!



Hello, readers!
Welcome to Stonecutters Island, Hong Kong, in 1947. It's a busy naval boatyard and HMS Amethyst has just stocked up on supplies for its next voyage.

Elsewhere, a certain wiley cat is busy chasing rats amongst the dockyard cargo.



A young seaman called George Hickinbottom found the cat and named him Simon, smuggling him on board.

I've got just the job for you!

Does it involve sleeping all day?



The ship's commander also took a shine to Simon and immediately tasked him with catching all the unruly rats that roamed the ship.

Uh oh!

Now we're for it!

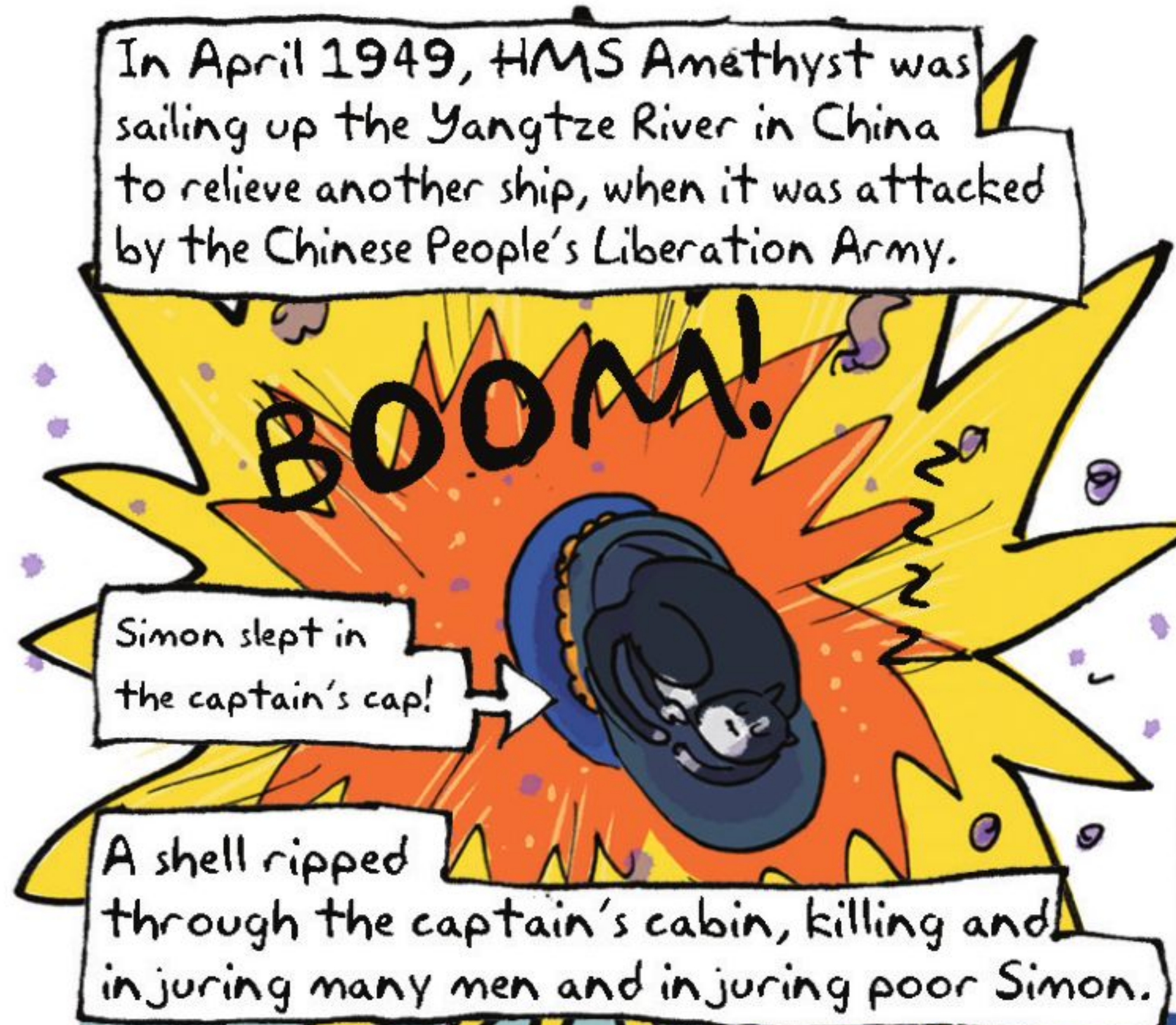
Yes, sir!



Simon was a roaring success! He cleared the ship of its rats and would drop them at the commander's feet (and even in his bunk!)

Good boy!

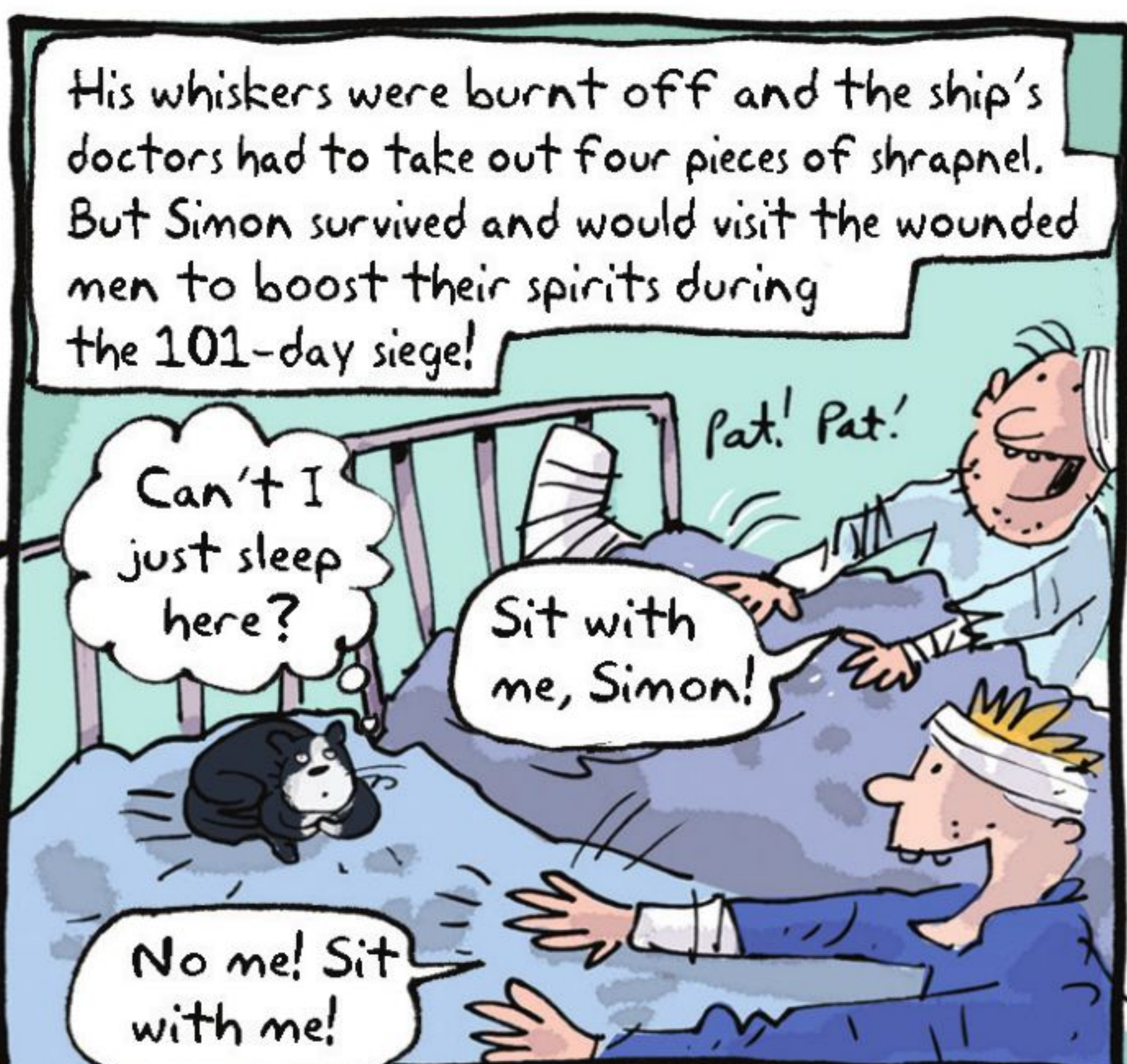
Can I go to bed now?



In April 1949, HMS Amethyst was sailing up the Yangtze River in China to relieve another ship, when it was attacked by the Chinese People's Liberation Army.

Simon slept in the captain's cap!

A shell ripped through the captain's cabin, killing and injuring many men and injuring poor Simon.



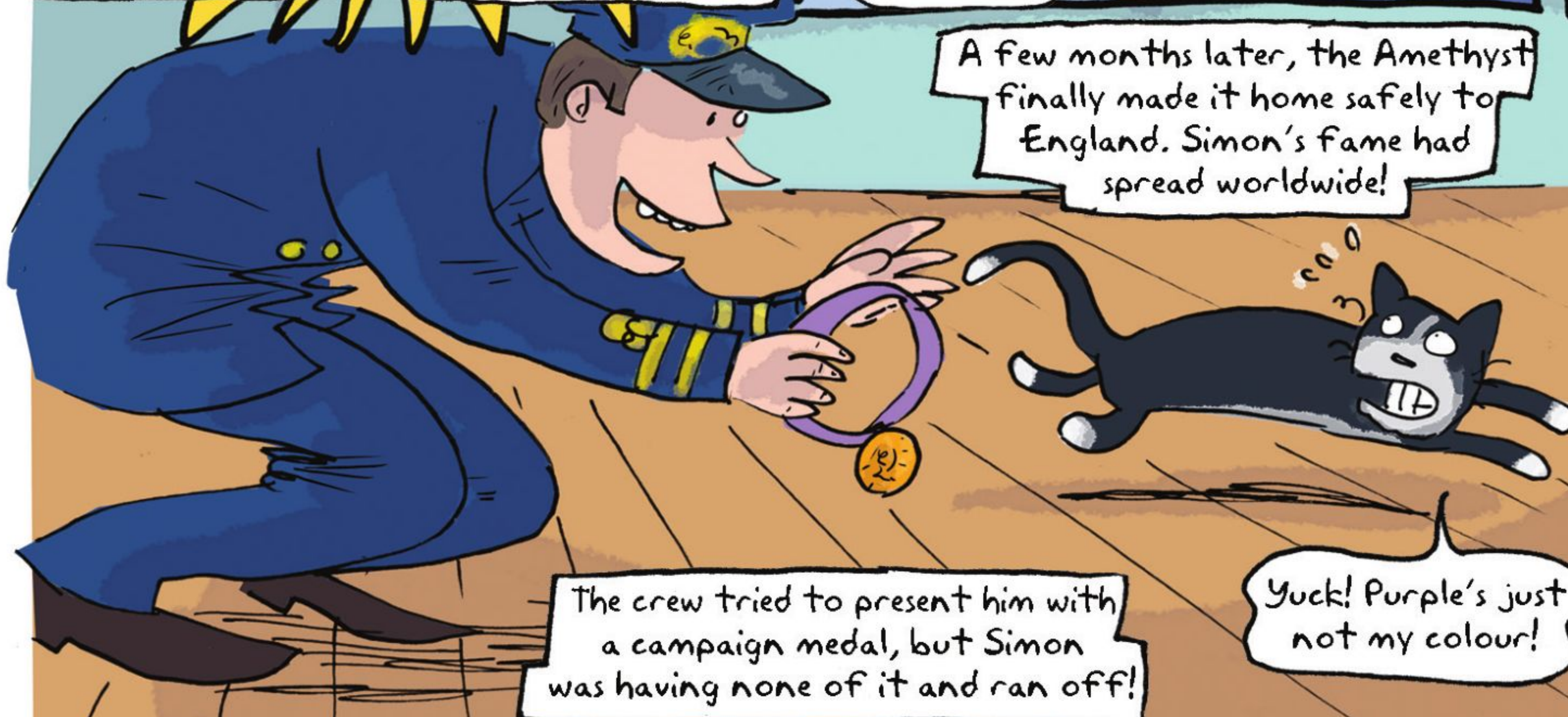
His whiskers were burnt off and the ship's doctors had to take out four pieces of shrapnel. But Simon survived and would visit the wounded men to boost their spirits during the 101-day siege!

Can't I just sleep here?

Sit with me, Simon!

No me! Sit with me!

Pat! Pat!



A few months later, the Amethyst finally made it home safely to England. Simon's fame had spread worldwide!

The crew tried to present him with a campaign medal, but Simon was having none of it and ran off!

Yuck! Purple's just not my colour!



A new rat infestation was eating the ship's supplies, so Simon went back to his duties. He even took on a huge rat all the sailors feared, called 'Mao Tse-tung'!

ARGH! My tootsies!

No sweat!

The supplies were saved, as were the hungry sailors' lives. Simon was a real hero!



Simon was to be officially presented with the 'Animal Victoria Cross' – the Dickin Medal from the charity PDSA – but, sadly, he died from his wounds before the ceremony.

Simon was a true hero of the Royal Navy and you can safely say that his nine lives were very well spent!

THE BIG INTERVIEW

Ghana's first ever frog expert Caleb Ofori-Boateng, tells us about his fantastic froggy finds...



Name: Caleb Ofori-Boateng
From: Ghana, West Africa
Job: The first formally trained amphibian and reptile expert (herpetologist) in Ghana.
Known for: Discovering that the Togo slippery frog was **NOT** extinct, even though scientists thought it had died out 40 years ago!
Awards: Winning the 2019 Whitley Award for his conservation work.

CALEB'S TOP TIP!

"What you are passionate about can change the world. My advice would be to not lose that passion. If you have the opportunity to follow your true calling, give it all you've got. You may change the world!"

I'm doing everything I can to give the Togo slippery frog a chance to survive!

HOW CALEB IS HELPING!

- Caleb is the founder of **Herp Conservation Ghana**, a charity that helps **protect amphibians and reptiles**.
- He has encouraged **17 local families** to **donate their land** to become part of a **legally protected area**!
- Caleb is **fundraising** to make a **canopy walkway** over that land, so **tourists** can **view the wildlife** from the **treetops**. Some of the money that visitors spend will go back into supporting the **local communities**.
- He's educating local people about the **frogs** so they no longer eat them, and working with them to stop **deforestation**.
- Find out more about Caleb's work at herpghana.org and whitleyaward.org

The Togo slippery frog spends most of its time in streams, so it's very hard to track down.



Hi Caleb! You won the 2019 Whitley Award for your work saving the Togo slippery frog. Scientists spent 40 years believing it was extinct, so how did you find it again?!

I was on an expedition in **2005** in the Eastern part of **Ghana**. One night we went down into the valleys and it felt like we were in a scary part of a **Harry Potter** movie – there were **bats** flying around and **owls** calling! Then suddenly, we heard a **whistling sound**. We thought it might have been a **ghost**, but once we gathered the courage to track it down, we realised it was the supposedly extinct '**whistling frog**', the **Togo slippery frog**. It was a very special moment.

Wow! And now you've dedicated your life to saving them!

Yes! I wanted to do **conservation work** with **amphibians**, because they're among the world's most threatened species – and yet **nobody in Ghana was researching frogs**, so we knew nothing about them! As the only **local person** on the team, it became my responsibility to ensure they survived.

Why was this species in trouble?

Local people considered the Togo slippery frog as **food**. It's been a part of their diet for **5,000 years**. Historically, it's part of the reason why people settled in the area – it was an easy food source. And the frog lived on land that **wasn't protected**.

How did you combat these problems?

I had to find out **why** people were eating a **critically endangered frog**, today. Was it possible that they **didn't know** it was critically endangered? Did they realise they were **destroying** the **forests** and **streams** that the frogs live in? Once we identified that the issue could be a **lack of knowledge** and information, we started creating **awareness** in local communities and got them involved.

How do you encourage local people to care about these frogs?

In Ghana, many people are very **religious**



Princess Anne presented Caleb with his Whitley Award in 2019!



Caleb (left) examines an exciting find!

My love for frogs deepens by the day!

Great news! Why did you want to work in conservation in the first place?

I was **inspired** by my **father**. He was one of

the **park officials** in the **national park** when I was little – I was literally born into the reserve, so it was in my blood. He would **carry me around the reserve** on his **back**, or we would go out in his old jeep to watch **buffalos** and **duikers** [a type of antelope].

What amazing experiences!

We had an extremely good relationship, but then he **died suddenly** when I was **seven**. He was only 45. It was traumatising for me. I didn't understand what **death** really was. As a little boy I had this hope that maybe one day I could grow up and do something to **bring him back**. But I realised over time that was **impossible**,

"When I was growing up, the animals were all around us! I remember lions roaring in our back yard. We ate fruit from the same trees as the baboons!"

and I understood that was also what happens when a creature goes **extinct**. The species has potential benefits (just like my father had big plans for wildlife conservation) – but none of that can happen when they're gone.

So losing him inspired you?

I related his death to species extinction, yes. And when I realised the **rate of extinction** in some species, I felt I was in a race against time.

Have you discovered any other frogs?

Yes! I've done lots of surveys and found a couple of new species. In fact, I discovered one last year that I named after my **mother**!

Haha, brilliant! What was her reaction when you told her you'd named a frog after her?

She was very proud! It's a **puddle frog**, which is a **very small species**, and we named it **Afia Birago**. My mother's name is **Afia**, which is a name given in Ghana if you're born on a **Friday**, and her surname is **Birago**. It's the only frog that has a **Ghanaian name**.

Cool! Why did you name it after your mum?

When my father died, life was very difficult, but my mother did incredibly well to **keep us going to school** and to raise us. So I thought I would immortalise her in this way.

That's lovely. What's your hope for the future?

My dream is to recreate a world where **people are living successfully with wildlife**, like when I **lived in the national park as a child**. The local communities in Ghana still have some forest left but it's not a perfect situation. **Most of the habitat is gone**, but fortunately we do still have some **large mammals** hiding in the valleys. We still have some **frogs** and **butterflies** and a few **monkeys**, though sadly most have been hunted. My hope is to **protect** and **restore** that **habitat** – to create a world where **people can walk the trails and hear animal calls**, or a **monkey might drop something on your head**! **We hope so, too – thanks Caleb!**



Volunteers wear T-shirts to share the message that frogs are great!



The Togo slippery frog is known as the 'whistling frog' by locals because of its call!



By Isla Vuletich, 9

The Vulture Catastrophe!

Little brown bodies suddenly emerged from holes in the rippling desert sand. They scurried around, as if late for work. One of them climbed a nearby tree and squeaked lightly. He had spotted a big, luscious fruit hanging from a branch. This would be their first decent meal of the season!

Suddenly, a vulture's shadow cast over them. It landed on the tree and shuffled towards the fruit. The meerkats screamed as the vulture plucked it off the branch with his talons. But the fuzziest meerkat was having none of it. He scrambled up the tree and bared his teeth to the vulture. But the vulture simply glided off the branch and, with a single flap of his wings, soared away with the fruit in his talons. The fuzzy meerkat did a warrior's call and the other meerkats knew what it meant. Revenge. The vulture had no idea of the war that was brewing.

As they made their journey to the vulture's nest, they trained for battle with the strongest meerkat in charge, even though he had protested that the fuzzy meerkat should be in charge. When they reached the vulture's nest, he was resting and didn't see the stealthy meerkats creeping below.

"ATTACK"! screamed the leader, and attack they did. The vulture soon flew away and surrendered the fruit.

They celebrated their victory by eating the fruit and planting its seeds. The vulture now understood why groups of meerkats were called mobs.



WRITING TIP

We all love reading stories with **believable characters**. One way to make a believable character is to have them **change and grow** throughout the story - are they the same at the end as they were at the beginning? **What** changed them?

STORY IDEA

Your character has just lost something **really important** to them. What is it? Will they ever find it? Who or what will get in their way?

SEND US YOUR STORY!

Email **200-250 words** to editorial@ngkids.com.au along with a **recent photo** of yourself and a simple **illustration in black pen**. If your terrific tale is selected, we'll be in touch!



The Story Island Project is a Hobart-based not-for-profit organisation that nurtures the creativity and writing skills of young Tasmanians aged 7-17 and celebrates their diverse voices. Find out more at storyislandproject.org

**GOODFELLOW'S
TREE KANGAROO**





© Getty Images UK.

 NATIONAL
GEOGRAPHIC
KIDS

EYELASH VIPER

RED-LIPPED
BATFISH



EUROPEAN
MOLE



HISTORY'S GREATEST HITS

Houdini's amazing feats weren't magic – they were just ingenious trickery!

ALL ABOUT

HARRY HOUDINI

Meet the man who wowed the whole world with his daring escape acts...



1874–1883

Harry Houdini was born **Erik Weisz** in **Budapest, Hungary** in **1874**. Just a few years later, his family moved to the **USA** and they changed his name to **Ehrich**. His family was huge (he was one of **seven children**!) and so Ehrich helped support them by doing odd jobs like **selling newspapers** and **shining shoes**. When he was **nine** he even joined a **travelling circus** as a high-flying **trapeze artist**. Whoosh!

1891

Ehrich loved to **perform**, and at 17 he began a career as a **magician**. But to make it in showbiz he needed a glitzy new persona, so he changed his name again to **Harry Houdini** – much catchier! Harry was okay at magic, but he wasn't anything special. He needed to find his own **speciality** if he was going to stand out...

1899–1918

Harry became world famous as he wowed audiences by escaping from things like **straightjackets**, **crates** and **jail cells**. His most famous stunt, however, was the **Chinese Water Torture Cell**. During this **dangerous** trick, Harry's feet were **shackled** and he was **hung upside down** in a glass box filled with **water**. He would **hold his breath** for up to **three minutes** before escaping. Gasp!



1893–1899

Harry started performing as part of a **double-act** with his brother **Theo 'Dash' Hardeen**. Then in 1894, Harry married a **singer and dancer** called **Bess** and the couple began performing as **The Houdinis**, with Bess as his **stage assistant**. By **1899**, his act involved **escaping from handcuffs**, and it was these '**impossible**' feats that caught the public's attention.



1926

Harry continued performing, claiming that he could take any **punch to the belly**. But, prior to one show, an **eager fan** took him by surprise and punched him **four times** before he'd had time to **tense his stomach muscles**. Ouch! Ever the showman, Harry went on stage anyway, but he **died** from a **ruptured appendix** a week later – whether the punch led to his death remains a **mystery** today. Despite his untimely demise, Houdini will always be remembered as one of the **world's greatest performers**!

1918

By the early **1900s**, an exciting new form of entertainment had become popular – **film**! So in **1918**, Harry starred in a 15-part **series of short silent movies** called the **The Master Mystery**. He played a **government agent** who had to **investigate a criminal gang** that was **protected by a robot**. He went on to appear in **four more silent movies**.

B'AROLFE PRESENTS **HOUDINI** IN **The MASTER MYSTERY**

BY ARTHUR B. REEVE AND CHARLES A. LOGUE DIRECTED BY BURTON KIN



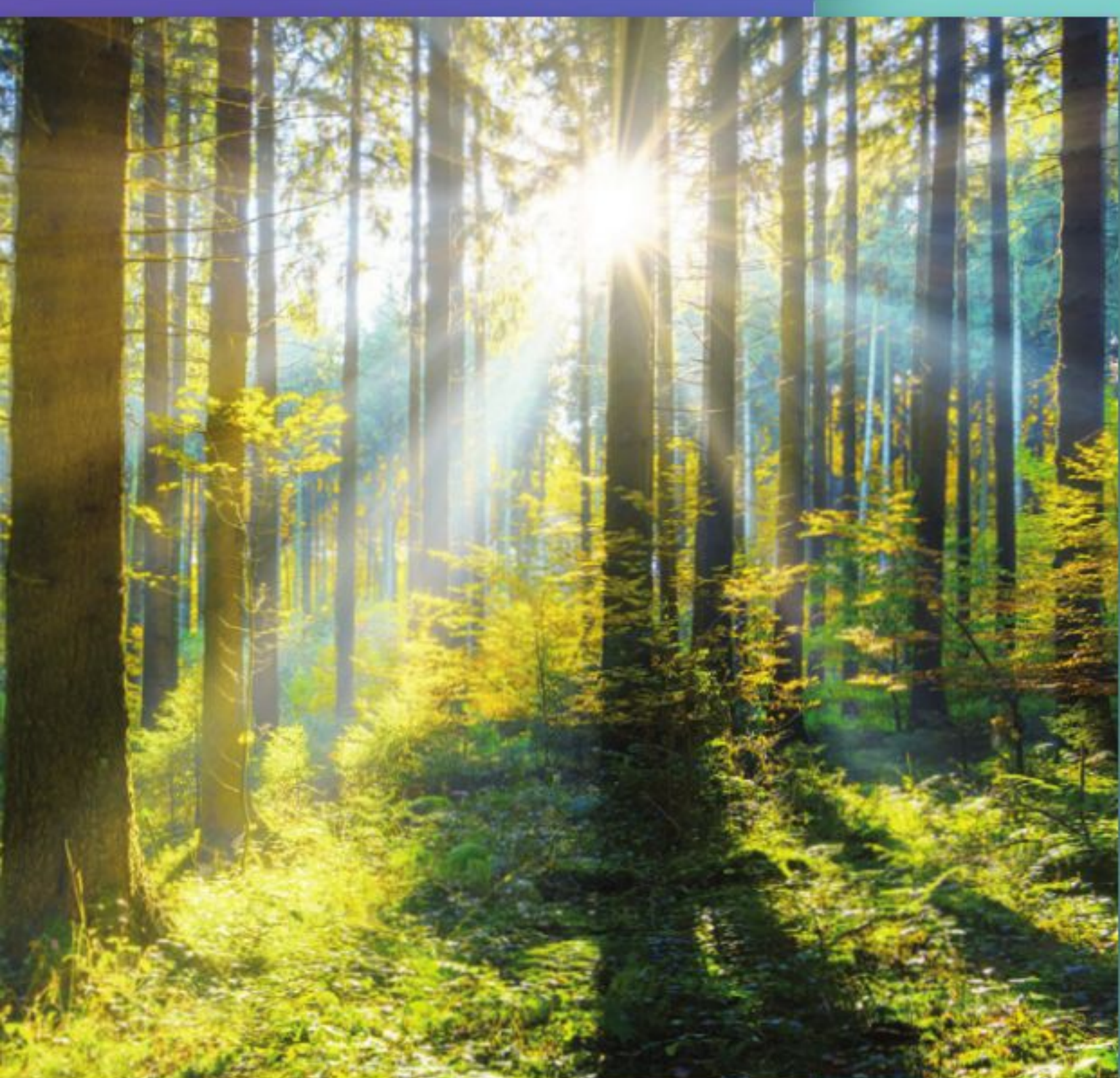
EPISODE EIGHT

B'AROLFE PRODUCTIONS OCTAGON FILMS, INC.

ALL ABOUT THE CIRCULAR

Currently, humans produce **WAY** too much waste. We make products, consume them and then chuck them away, littering our planet in the process. But what if there was a *different* way to do things?

We all need to buy less stuff and get more use out of stuff we already own!



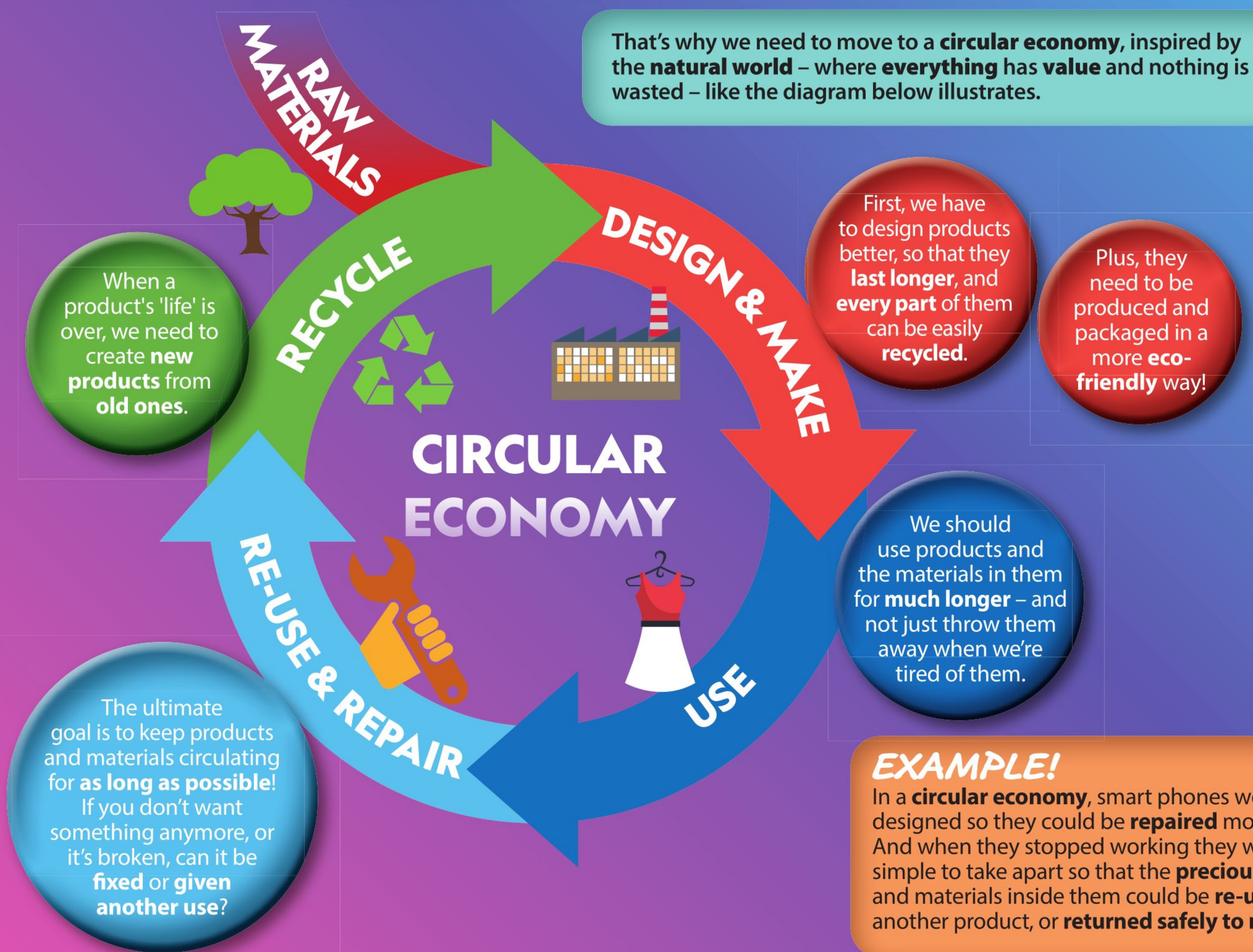
In the **natural world**, there *isn't* any **rubbish** or **landfill**. Energy is provided by the **Sun**, one species' **waste** is another's **food** and when things die, their nutrients return to the soil – in a **circle of life**. Unfortunately, humans do things in a more **linear** way (see below)...

LINEAR ECONOMY



When we want the latest **phone** or **computer**, we tend to **bin the old one**. When our **dishwasher breaks**, we buy a **brand-new one**. But this **wasteful** approach, known as the **linear economy**, isn't working! We're running out of **resources** to make new things with, and we're producing too much **toxic waste**.

That's why we need to move to a **circular economy**, inspired by the **natural world** – where **everything** has **value** and nothing is wasted – like the diagram below illustrates.



CIRCULAR ECONOMY!

TRUE OR FALSE?

Are these claims about the circular economy real or rubbish? Test your friends and family!

The circular economy is just another name for recycling.

FALSE: It's **much more** than just recycling! It makes sure we use **fewer resources** to make products, and that we use them for as **long as possible**, regenerating them at the end of their life.

Products designed for the circular economy need to be easily dismantled and recycled.

TRUE: We should see old tech as a **valuable resource** of materials!

In a future circular economy we could rent tech instead of owning it.

TRUE: This could be one solution! If we **rented** our washing machines or lighting systems, it would be up to the **maker** to **fix** and **replace parts** so **nothing** would have to be **thrown away**!



If we make less stuff, there will be less work for people.

FALSE: In a circular economy, new jobs could be created in the **recycling** and **remanufacturing** industries!

If there were no humans, then there would be no landfill. Nature is the original circular economy!

TRUE: Humans have invented loads of **brilliant products** – but unfortunately many of them cannot **biodegrade**.



All waste is bad.

FALSE: Although we should try to reduce our waste, in the **future** rubbish is likely to become one of the **most important** alternative **raw materials**!

The circular economy is really bad for business.

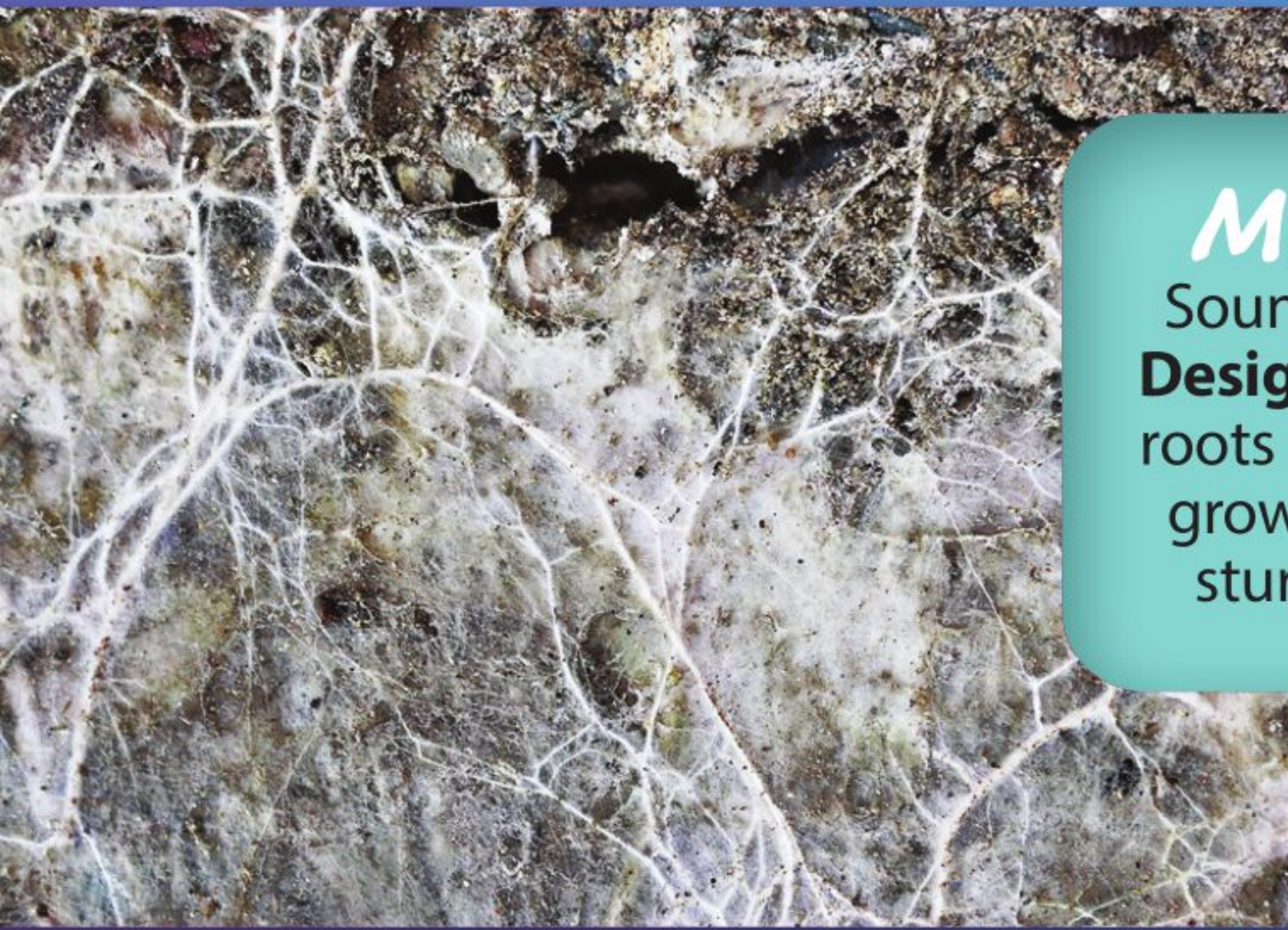
FALSE: Not if **businesses adapt**! For example, they could provide service packages that include **repairs** and **maintenance** for items they make.



Turn over for examples of exciting innovations in the circular economy...

INNOVATION IN ACTION!

More and more people and businesses are realising how important the circular economy is to our planet. Check out these amazing examples, and discover how YOU could get involved...



MUSHROOM PACKAGING

Sounds bonkers, but a company called **Ecovative Design** have developed **packaging** made from the roots of **mushrooms**! These 'mycelium' act as **glue**, growing around **woodchips** or a mould to create sturdy **plastic-free zero-waste** packaging. Yay!



NOT-SO-FAST FASHION

Have you heard about the problem with **fast fashion**? That's when clothes are produced so **cheaply** that they're often only **worn a few times** before being thrown away – adding to the world's waste. But outdoor clothing manufacturer **Patagonia** is encouraging people to make their clothes last a lifetime. Their **Worn Wear** programme gives tips on fixing and waterproofing, and they offer free repairs.

GET INVOLVED!

REPAIR CAFES

Instead of **chucking away** your **broken things**, why not **fix them**?! It can be much **easier** than you think! **Repair Cafés** all around Australia and New Zealand provide tools, materials and advice to people who want to get mending, whether it's **furniture, bicycles, electrical appliances, clothes, crockery** or **toys**. Find one near you at repaircafe.org/en/



In 2018, Repair Cafés prevented 350,000kg of waste!

SECOND-HAND SHOPPING MALL

In **Sweden**, eco-friendly shoppers can visit the first ever **second-hand shopping centre**, **ReTuna**! Every store in the building sells only **up-cycled vintage goods** – from coats to chairs. Snap up a bargain **and** avoid waste! Trip to Sweden not on the cards? Then have a nose around your local **op shop**!



GET INVOLVED!

FREECYCLE

What if something's not broken, but you just don't want it any more? Well sign up to **Freecycle**! You can advertise the things you're getting rid of – from **furniture** to **bicycles** – and someone local will pop round to pick it up and give it a loving new home. Aww!



CIRCULAR ECONOMY QUIZ!

Are you and your family up to speed on what the circular economy means?
And are you doing your bit? Find out in our quick quiz!

1. Your school shoes are getting worn out. What do you do with them?

- a) Take them to a cobbler for new soles and give them a polish.
- b) Put them in a clothes recycling bin.
- c) Bin them immediately and get a brand-new pair.



3. Which of the following best describes your gift wrapping?

- a) I wrap homemade gifts in newspaper or magazines, or reusable scarfs.
- b) I use recycled wrapping paper or brown paper.
- c) I wrap everything in glittery new paper and ribbon.

2. You've grown out of your favourite toy. What do you do with it?

- a) Clean it and donate it to an op shop or friend.
- b) Leave it in the back of your cupboard and forget about it.
- c) No one else will want it – chuck!

4. You were really thirsty so bought a bottle of water. What's the best thing to do with it after?

- a) Reuse it, or make something new with it, like a mini-greenhouse. Then when that's finished, recycle it.
- b) Recycle it.
- c) Throw it away.



5. Which of these is the best example of circular economy in action in the home?

- a) Making a quilt from old clothes.
- b) Reusing a plastic bag as a bin liner.
- c) Throwing things away when you can no longer use them.



6. Your alarm clock isn't working. What do you do with it?

- a) Ask someone to help you fix it.
- b) Check [recyclingnearyou.com.au/](https://www.recyclingnearyou.com.au/) to find the best way to dispose of it.
- c) Straight in the trash with it.



7. You need a new jumper – your last one has a hole in it. What do you do?

- a) Sew up the hole or make a patch for it.
- b) As it's too damaged for the op shop, take it to a clothing bank so the fabric can be recycled. Then buy a secondhand one.
- c) Buy a brand-new one.



RESULTS!

Mostly As HERO OF ZERO WASTE!

Zero waste means **full marks!** You get as much use out of your items as possible – now the world just needs to catch up.



Mostly Bs TIDY WORK!

You're making a tidy effort! You're a **top recycler** and the **op shops** love you. But you may be able to get even more use from your old items!



Mostly Cs TOTAL BIN-BO

Uh-oh – you just love to **chuck your muck!** Before you buy any more things, take a moment to **appreciate what you've already got** and think how it could be **re-used**.



9

COOL

INVENTIONS

Check out some
supersmart stuff
that could
change your life!



1

BIKE TAKES FLIGHT

The **Speeder** has a seat and handlebars just like a **motorbike**, but this **contraption** travels to a place you could never reach on a regular bike – the **sky**! Just press a button and **four turbojet engines** on the Speeder's front and back launch it **off the ground**. Then you move **through the air** by steering the handlebars! Although it's still being tested, the bike's expected to reach speeds of **over 241kmph** and climb to an altitude of **4.5km** – talk about **getting a lift**!



2 DOG WATER FOUNTAIN

You can teach your **dog** to sit, fetch and roll over, but can it drink from a **water fountain**? Well, the **Pawcet** is here to help them master that **trick** as well! This clever device lets **thirsty dogs** get a **fresh drink** whenever they want – with the touch of a paw! Just hook up the Pawcet to your **garden hose** and all your dog has to do is **step on the platform** to drink. Now that's something that'll really get their **tail wagging**!



CHECK
OUT
THE
BOOK!

3

FLOATING POOL

The **rivers** surrounding **New York City, USA**, may not be the most ideal places to **swim**, but a group of designers is hoping to change that. Their plan? To build a **floating swimming pool** in the city's **East River** that will serve as a **giant filter** for the surrounding water. The pool's filters will remove **bacteria** and **contaminants**, leaving nothing but **clean, chemical-free H₂O** in the pool. It'll then pump about **2,300,000 litres** of clean water back into the river **every day**. The **Olympic-sized pool** (illustrated below) will be able to fit nearly **500 people** and could be the first of many **filtering pools** used around the world!





4

JET-POWERED SURFBOARD

If you've ever been surfing you'll know that it can get pretty **tiring** paddling out to reach the waves. But not anymore! Just hop on to the **WaveJet**, a jet-propelled **surfboard** that lets you reach the swells *without breaking a sweat*. Powered by a pair of **battery-operated engines** at the base of the board, you can zip across the water at up to **16kmph** – that's about five times the average person's **paddling speed**. Not a surfer? The removeable **engine pod** can also be attached to **stand-up paddleboards**, **boogie boards** and even **kayaks**, so you can get a **boost** however you hit the water!



5 IN-EAR TRANSLATOR

Visiting **Paris**, but **don't** speak **French**? No problem! Just pop in the **Pilot** earpiece to understand **every word** another user says to you. The **earbud device** translates **foreign languages**, including **French, Spanish and Italian**, in **real time**. Simply select which **language** you want to decipher from an **app** on your phone, then let Pilot do the **translating**. Voilà!



6 SMART RING

When the lights are **too low** for you to **read** on your sofa, just tap your thumb to your **ring finger three times** to turn them up. And while you're at it, **make a call** – all without ever **touching** your phone! That's what a **smart ring**, called **ORILL**, can do. Slide the **hi-tech** ring onto your finger, and a Bluetooth chip in it will **control** your **smart devices** wirelessly. Sync it to your gadgets, then **call a friend** or send a **text** just by **speaking into** a pair of microphones on the inside of the **device**. It's not quite the same as having a **personal assistant** – but it's the next best thing!



Images © Rex USA / Aaron Chang / Solent News / Rex (4, both); Waverly Labs (5); Origami Labs (6, both); Tony Kyriacou / Rex / Rex USA (7, both); Bird Photo Booth (8, both); Solent News / Splash News (9)

7 BENDY BIKE

Here's one way to **confuse** a bike thief – **wrap your bike** around a pole! **Bendy bikes** let you do just that, thanks to a frame that's **flexible** enough to curl around **lampposts** and **street signs**. Hoping to **decrease** the number of bikes **stolen** each year, a design student came up with this clever cycle that looks like a **regular bike** when you're **riding it**. Once you're ready to lock it up, however, loosen a cable **below the seat** to split the bike into **two segments**. Then **bend** the frame up to **180 degrees**. Next, secure it to a pole with a regular **bike lock**, leaving would-be thieves **scratching their heads**. Brilliant!



Bendy bikes look like regular bicycles when you ride them...



... but are flexible enough to wrap around a pole when you're ready to hop off!

8

BIRD PHOTO BOOTH

Get set to **snap pictures** of hungry swallows or blue tits with the **Bird Photo Booth**. Simply pop your phone inside this special **bird feeder**, then sneak into your house and watch a **live feed** on your computer or tablet of the birds eating. See the **perfect shot**? Click away as you get the **ultimate up-close pics** of your backyard birds. But these aren't ordinary snaps – the Bird Photo Booth's **high-quality lens** lets your **phone** take images that'll **rival** those of a real-life **wildlife photographer**. Say "cheese!" – er, we mean "tweet!"



Western scrub jay

9 SOLAR-POWERED TENT

Normally you'd be **out of luck** if your **phone battery** ran out of power while you were camping – but not if you're sleeping in a **Bang Bang solar-powered tent**. The brightly coloured four-person shelter comes with a **solar panel** that soaks up sunlight throughout the day. This creates enough **energy** to charge a **lithium battery bank** inside the tent. So, all you have to do is **connect your gadget** to the battery bank and charge away. Now you'll always have **plenty of juice** in your phone to stay **connected**, no matter where you're camping!



JUNIOR EXPLORERS' CLUB

WILDLIFE RESCUES!

Our garden has a lot of very tall **gum trees** and recently when **Dad** and I were playing on the lawn we found a **tiny baby Indian Myna bird**! It had **fallen out of its nest** on to the grass. Its nest was too far up for us to return it and the bird looked very upset. So we made a **new nest** for it out of a **sieve** and **tissue paper** and put it in a tree we could reach. Thankfully the **mum found him there** and **started feeding him**. It felt so good to save the baby.

Eve, 8

● Amazing work, Eve! That's one lucky bird.



Eve to the rescue!



Safe and sound!

Husker and Jorge found these insects on the beach



COVER STAR!



Archie saved the lizard in this nick of time!

Hi NG KIDS, I've got a cool story about a **bobtail lizard** that came to our backyard. **Milly**, my dog, grabbed it by the **head** and tried to make it bleed, but it **didn't even hurt the lizard**! A **vet** came and picked it up in a cage and helped us **relocate it** to a nature spot in the park on our street. I love lizards!

Archie, 9

● Good job for calling the vet, Archie. We bet the lizard didn't like being flung around by Milly!

I think **chameleons** are **extraordinary**! They live in **African deserts** and **rainforests** and can **change colour** to **mimic their surroundings**. There are so many different species – one, the **Madagascan dwarf chameleon**, is the **smallest reptile on Earth**. I think the **Jackson's chameleon** is the weirdest one, because it has **three horns**, just like a **Triceratops**!

Wil, 7

● Thanks for the chameleon facts and picture Wil! Here's another fun fact for you – chameleons' eyes can swivel in two different directions at the same time!



Wil drew this cool chameleon!



NAME: Midnight

BREED: Cavoodle

AGE: 3

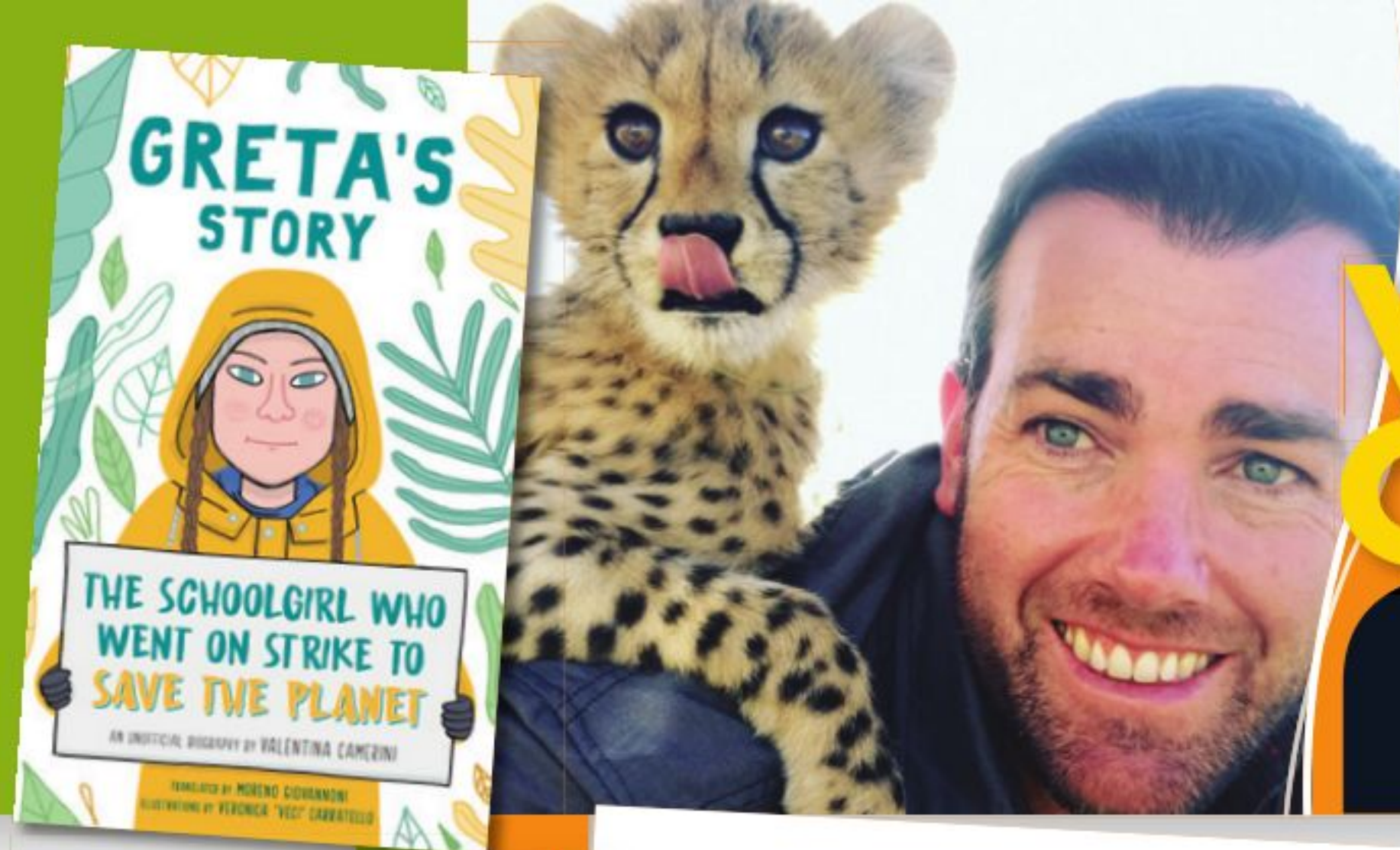
LIKES: Balls, balloons, bubbles, chicken necks, walks, and meeting new people and dogs

DISLIKES: Loud noises

OWNER: Sienna, 9

We want to hear from you! Send in your artwork, jokes, craft pics and pet photos. Tell us about your wildlife sightings, hobbies, interests and opinions! A selection of our faves will be printed on this page! Email us at editorial@ngkids.com.au

Every reader on these pages will receive a copy of **Greta's Story: The Schoolgirl Who Went On Strike To Save The Planet**, about inspirational activist Greta Thunberg!



WILD CAT CONSERVATION

with Ben Britton

INSECTS IN TROUBLE

Hi NG KiDS team,
This is a small selection of **insects** we **found** on holiday at **Seal Rocks beach** in **NSW**.

There were millions washed up all along the shoreline with **burnt leaves** from the **bushfires**.

It was sad to see how the fires have **affected the wildlife** and to see **ecosystems disrupted**.

We hope these pictures will inspire people to donate to **wildlife charities** and to make small changes to reduce climate change!

Husker (8) and Jorge (6)

● Great idea, guys! Turn to page 16 to read about how you can help animals.



I **Painted** this picture after visiting **Hartley's Crocodile Adventures Wildlife Park** in **Cairns**. I was fascinated by the **crocodile's size** and the **speed** at which it **leapt out of the water** to **catch its prey**! Did you know that there are **two** types of crocodiles, the **freshwater** and **saltwater**? The '**salties**' around Cairns are the **larger** and more **dangerous** of the two. You have to play safe and **never swim** in areas that are home to crocodiles!

Viraj, 7

● Good advice, Viraj. Great painting, too!



Viraj



DID YOU KNOW?

Rusty spotted cats are one of the world's **smallest** wildcats – along with the **black-footed cat** from **Africa**!

LET'S MEET THE RUSTY SPOTTED CAT

Where do they live?

The **rusty spotted cat** is only found in **Sri Lanka** and **India**, in **rainforests**, **dry grasslands** and **scrubland**.

What do they eat?

These wild cats feed on small prey, such as **rodents**, **birds**, **small mammals**, **insects**, **frogs** and **lizards**.

How do they live?

Rusty spotted cats are **nocturnal**, emerging at night to **hunt** and **look for mates**. They spend most of their time on the **ground** but are **great climbers** when they need to **escape predators**!

How big do they grow?

They're really light, weighing just **1–2kg**! For comparison, a standard

domestic cat weighs between **4.5–5.5kg**!

How do they communicate?

Like most other cats, rusty spotted cats **communicate** with **smells** by **spraying urine** on **trees**. They also have **scent glands** in their **paws** and **cheeks**, so they will **scratch** and **rub their cheeks** on **trees** to spread their scent.



Ben's fave fact!

Rusty spotted cats have been nicknamed the '**hummingbirds of the cat family**' due to their **size**, **speed** and **agility**!

To learn more about Wild Cat Conservation go to wildcatcentre.org.au

Bet You Didn't Know!

7 sweet facts about chocolate

1 Legend says that Aztec ruler Moctezuma drank 50 cups of chocolate a day.

2 The US state of Maine is home to a 771-kg chocolate moose named Lenny.

3 A 100-year-old chocolate bar sold for over \$900.

4 The average Australian eats about 6kg of chocolate a year. That's as heavy as some bowling balls!

5 The world's tallest chocolate fountain, at Pralines World in Austria, is 12.27m high.

6 It takes 400 cacao beans to make 450g of chocolate.

7 Laid end to end, all the Toblerones sold each year would stretch 62,000km.



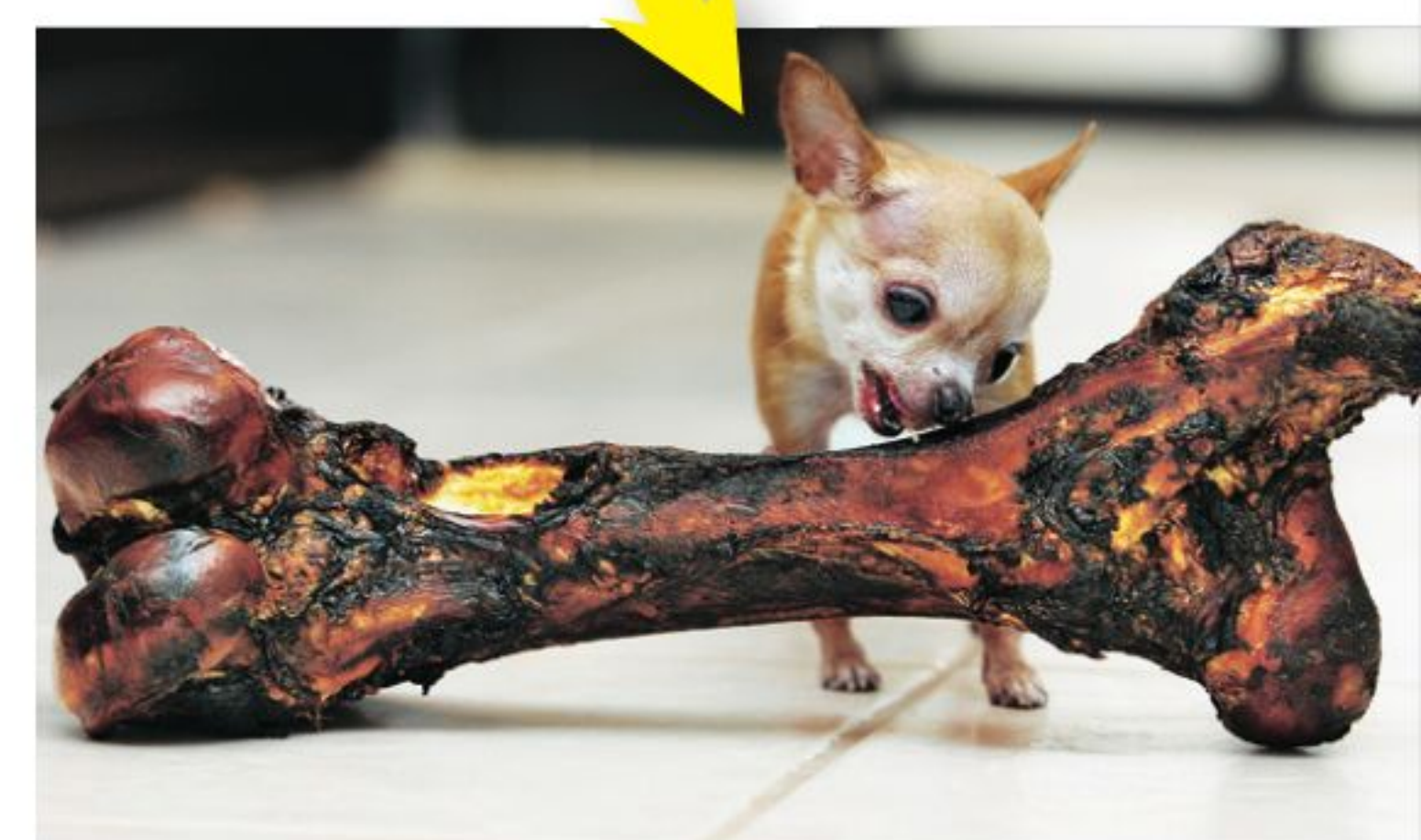


Fancy having a race against this dude?!



Hey, watch where you're walking!

MASSIVE BONE OR TINY DOG?!



SPEEDY ROBOT



Clocking in at **9kmph**, ASIMO is the **fastest-running humanoid robot** in the world. The bot's secret? Highly responsive hardware and flexible joints allow it to move like a human. Don't worry about being out-run by a robot, though. ASIMO only **sprints** at about **half the speed** of an average **jogger**.

DINKY DOG



Meet **Heaven Sent Brandy**, the **smallest dog** in the world. Known as **Brandy** for, er, *short*, the tiny Chihuahua is just **15.2cm long** from **nose to tail tip** – that's shorter than a **pencil**. Oh, and she's not much taller than a **can of fizzy pop**! "She can't jump on or off anything because her legs are so tiny," says owner, **Paulette Keller** from **Florida, USA**. Eek!



Watch out when this board's about!

GINORMOUS SKATEBOARD



Too bad you can't do any **tricks** on this skateboard. Designed by Americans **Rob Dyrdek** and **Joe Ciaglia**, the bonkers board is more than **11m long** – almost the same length as a **single-decker bus** – and nearly **1.2m tall**! Up to **ten riders** can fit on the board, which is fitted with four racing-car tyres for a smooth ride. Now they just need to make a giant half-pipe!

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Felix and Livia are being pursued across the **Roman empire** – they're on a mission to reach **Rome** and **rescue Livia's brother** before he's sent into the **arena** to do **battle with lions** and **vicious ostriches**. Yikes! Along the way, the pair are helped (and hindered) by a **foolish camel**, a **grumpy magic carpet** and a very **selfish sacred chicken**.

Oh, and they encounter **bandits**, a **shipwreck** and a **false accusation** – epic stuff! Will they save Livia's brother in time, or will they fall victim to the **chicken's curse**?

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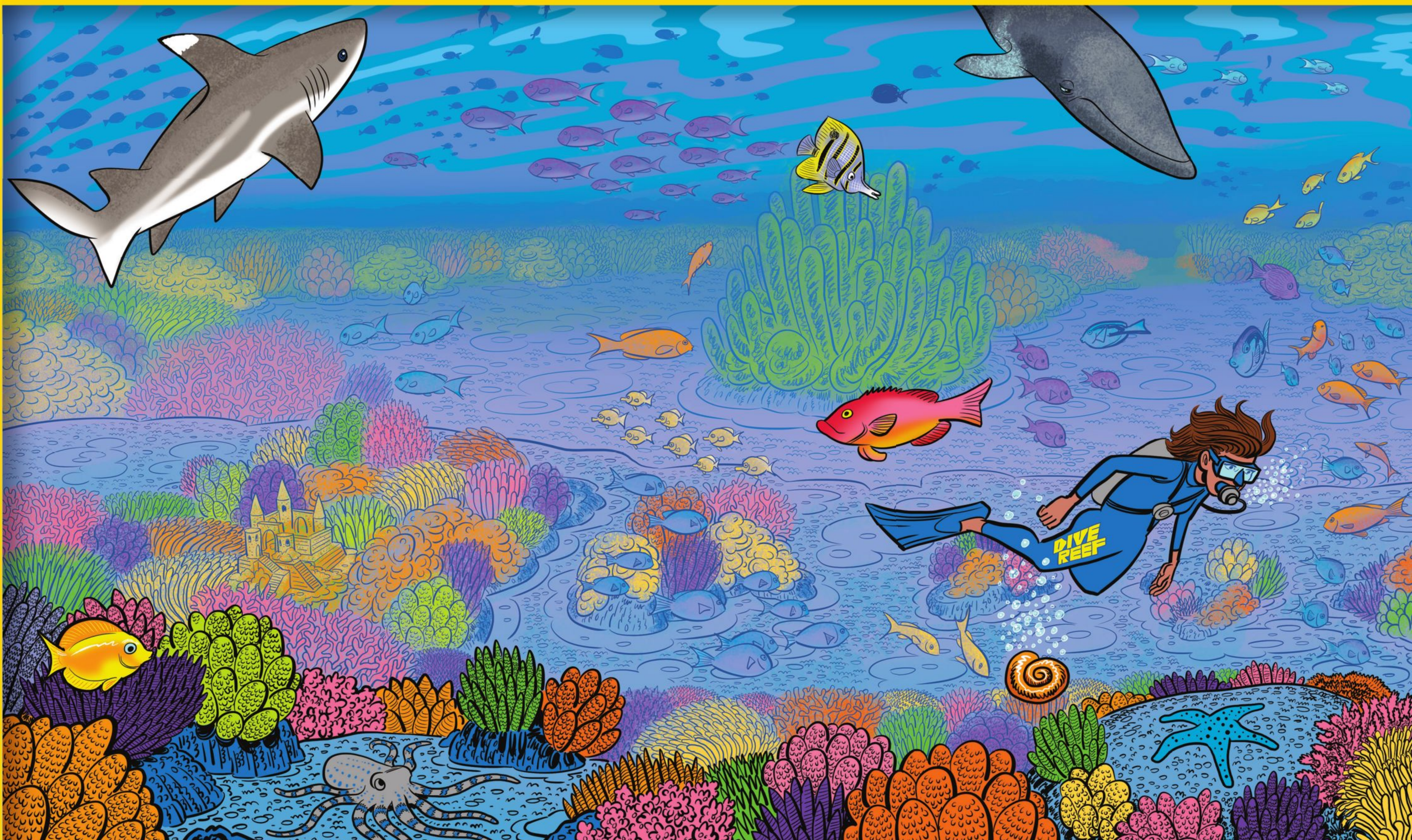
FUN

STUFF

GAMES,
LAUGHS,
AND LOTS
TO DO!

These two scenes in the **Great Barrier Reef** may seem the same, but look again! Can you find at least 20 differences between them?

Answers on page 49





WHAT IN THE WORLD?

OVER THE RAINBOW

These photographs show close-up views of **rainbow-coloured** things. Unscramble the letters to identify what's in each picture. **Bonus:** Use the **yellow letters** to help you answer the joke below...

Answers on page 49



A P N T I E S T



K S O C S



P O L P L I O L



T R A O R P



A K E C



Y O C A R S N



K S S R N L E P I



L A B M R E L U



N K I S Y L

JOKE: What do storm clouds wear under their trousers?

ANSWER: _ H _ _ D _ _ W _ _ _ !

Top row (left to right): Eldoradosupervector / Shutterstock; Elena Schweitzer / Shutterstock; Jeffrey Hamilton / Digital Vision / Getty Images.
Middle row (left to right): Pete Turner / Getty Images; Oleksandra Naumenko / Shutterstock; Botulinum21 / Shutterstock.
Bottom row (left to right): Shannon Alexander / Shutterstock; Andriy Bondarev / Getty Images; © Garry Gay / Alamy.

CODE BREAKERS

In the book *Explorer Academy: The Double Helix*, 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



THE CODE: CULPER CODE

You need to meet an **Explorer Academy** professor at a secret location in **Washington, D.C., USA**. She has sent you the **coded message** below with instructions. Use the key below to crack the code, and find out where and when to meet.

To decode this secret message, replace each number with the word next to it. So 1 23 39 31 would say A HIDDEN SECRET MESSAGE.

CRACK THIS CODE!

» 29 6 16 26 20 35 43 11 10

ANSWER ON PAGE 49

WRITE YOUR ANSWERS HERE!

CODE KEY

- | | | |
|-------------|--------------|---------------|
| 1 A | 18 FOR | 37 PARK |
| 2 AFTER | 19 FROM | 38 ROOSEVELT |
| 3 AGENTS | 20 FRONT | 39 SECRET |
| 4 ALL | 21 GO | 40 SPY |
| 5 APPLY | 22 HAT | 41 STREET |
| 6 AT | 23 HIDDEN | 42 TAKE |
| 7 BASIN | 24 HIDE | 43 THE |
| 8 BEFORE | 25 HOUSE | 44 TIDAL |
| 9 BLACK | 26 IN | 45 TIE |
| 10 BUILDING | 27 JACKET | 46 TIME |
| 11 CAPITOL | 28 JEFFERSON | 47 TO |
| 12 CARE | 29 MEET | 48 WASHINGTON |
| 13 CLOTHES | 30 MEMORIAL | 49 WEAR |
| 14 CODE | 31 MESSAGE | 50 WHITE |
| 15 COME | 32 METRO | |
| 16 DAWN | 33 MIDDAY | |
| 17 DUSK | 34 MONUMENT | |
| | 35 OF | |
| | 36 OFFICE | |

This key is based on the **Culper Code**, which was used by spies in the **American Revolution** (a war which led to the **United States' independence** from **Great Britain** in the 18th century).



CHECK OUT THE BOOK!

FUN STUFF MAKE IT

PEBBLE PEOP

Create your own funny little gang out of

What you'll need



- A selection of smooth flat pebbles
- Pencil
- Bright acrylic paints and fine brushes
- Black permanent marker pen or paint pen
- Varnish (optional)

Start here!



- 1 Choose some smooth pebbles that you think will make good heads and body shapes.

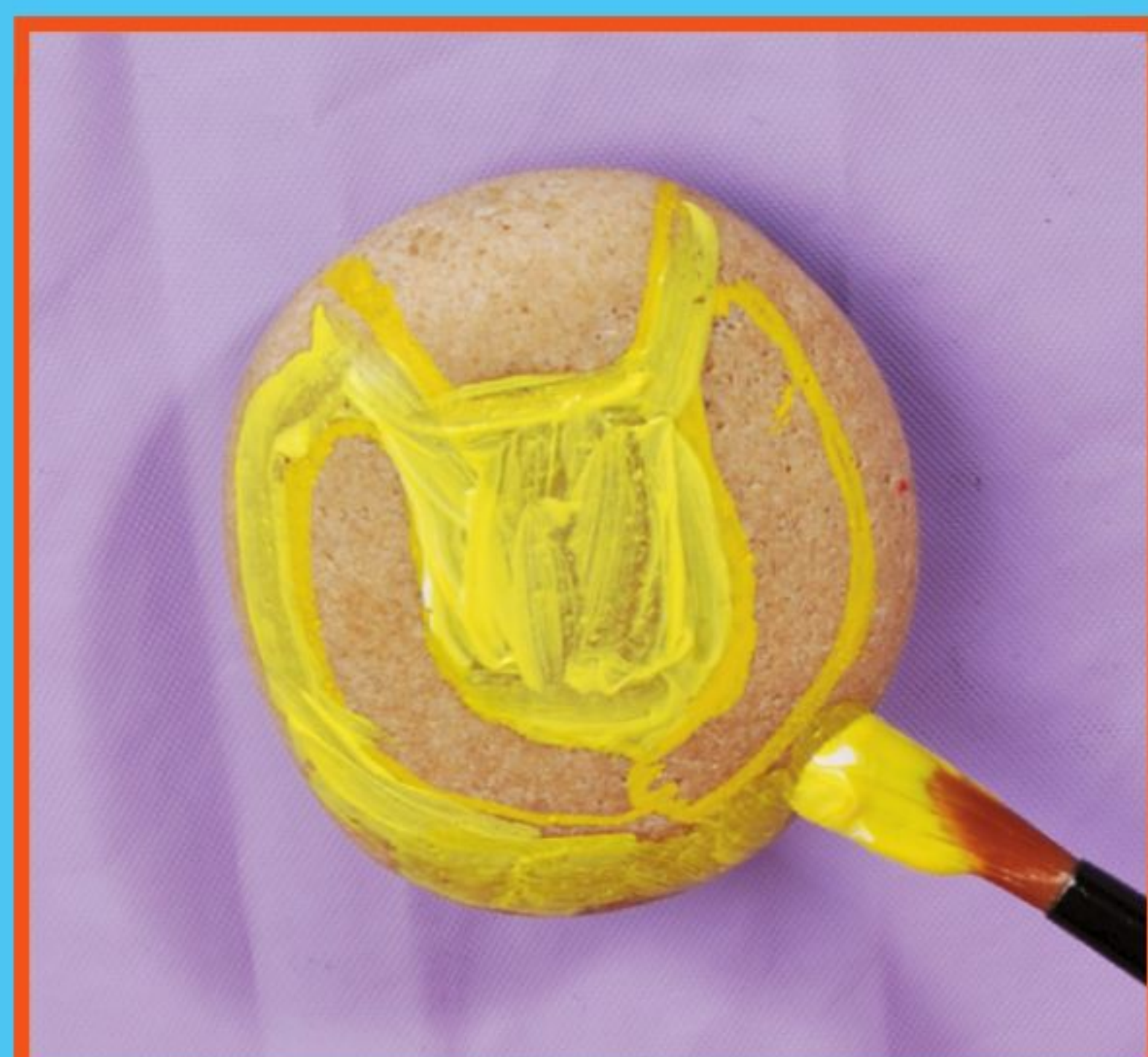


- 2 Use a pencil to sketch your designs on the stones.

You could stick magnets on the back of your pebble people and put them on the fridge!



- 3 Add the colour first. For faces, paint on the whites of the eyes, the hair and/or eyebrows, plus lips or cheek colour.



- 4 For bodies, mark out where you want the neck, arms or hands to be (see step 2), then paint around them in a block of colour.



- 5 When the paint is dry, use the black marker to outline the features of the face and add extra details, such as eyelashes or patterns on the clothes. Use a small paintbrush to add any extra colours or details.



LE
stones!

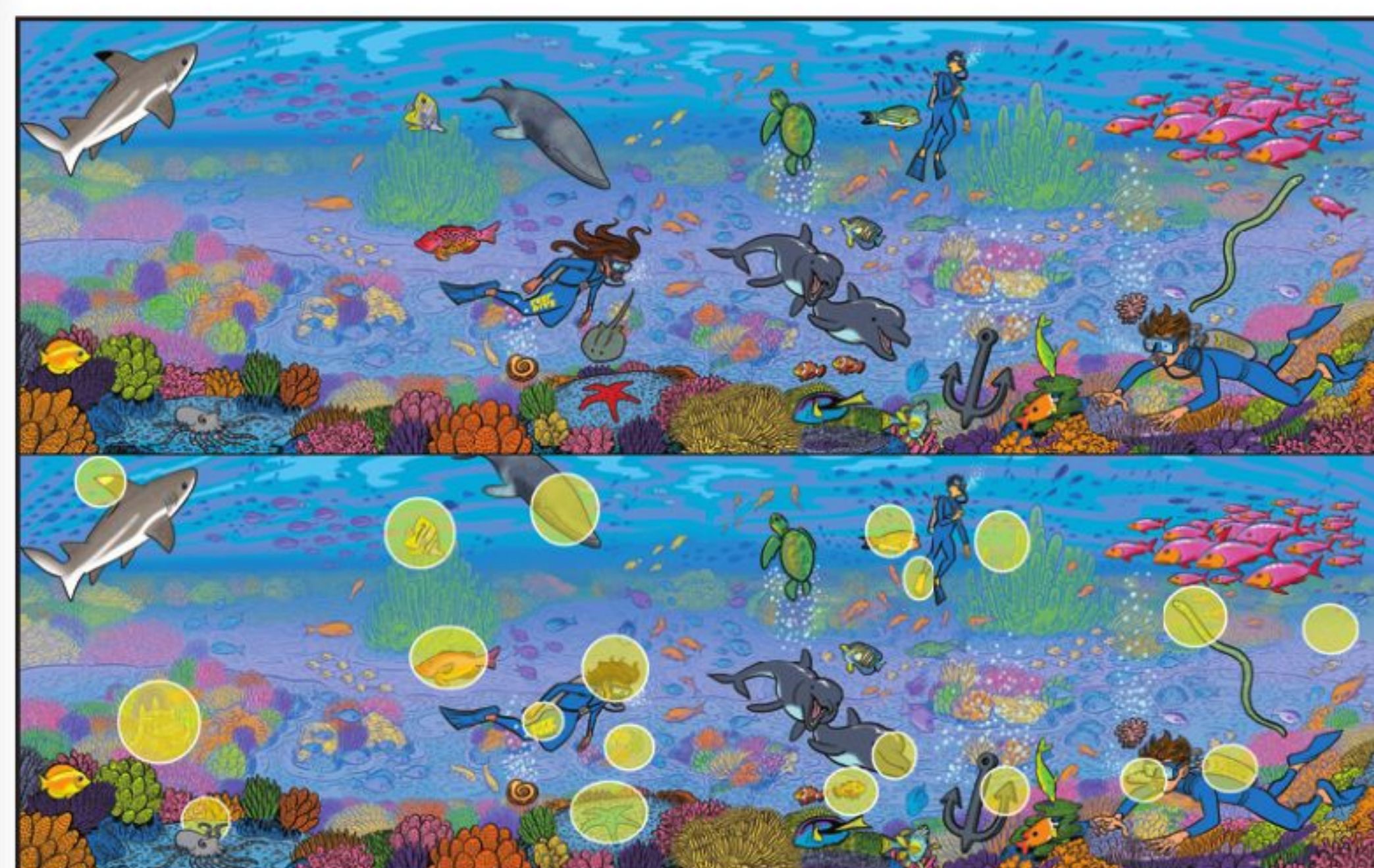


TOP TIP
To make your pebble people last longer, add a coat of varnish. But check it doesn't make the colours run, first!

Mix and match our heads and bodies!

FUN STUFF ANSWERS

DOWN UNDERWATER (page 44)



WHAT IN THE WORLD (page 46)

Top row: paint set, socks, lollipop. **Middle row:** parrot, cake, crayons. **Bottom row:** sprinkles, umbrella, Slinky. **Bonus:** thunderwear

CODE BREAKERS (page 47)

MEET AT DAWN IN FRONT OF THE CAPITOL BUILDING

BEACH GAMES

On your next trip to the seaside, try out these awesome activities...

DIG IT

Dig a trench from your spot on the beach down to the sea so that the water flows up it!



CRAZY CASTLES

Build silly sculptures or add detail to sandcastles by mixing water and sand in a bucket and dripping the mixture down until shapes form.

READY, AIM... ROLL!

Dig a series of smallish holes in the sand. Then try to roll balls into them.



ROCK ON

Sort pebbles and shells into colours, then create pictures with them!

THE LAST LAUGH

Q. How do bats learn to hang upside down?

A. They just get the hang of it!

Q. What did the stamp say to the envelope on Valentine's Day?

A. "I'm stuck on you!"

Q. Did you hear about the flower that had a baby?

A. It was a chrysanthemum!

Q. Where do cows go on Friday nights?

A. To the moo-vies!

Q. Why did the golfer wear two pairs of trousers?

A. In case he got a hole in one!

Q. Why did the bicycle fall over?

A. It was two-tyred!

Q. If a seagull flies over the sea, what flies over a bay?

A. A bagel!

Q. Why did the biscuit go to the doctor's?

A. It felt crumb-y!

Photos: Valerie Rowles. Thanks to Billie. All other photos: Getty Images UK.

WACKY WORLD!

Check out the planet's strangest pictures...



Graffiti Greta!

An **18-metre mural** of **Greta Thunberg** has appeared on the side of a building in **San Francisco, USA**. "**Climate change** is real," says artist **Andrés Iglesias**, who painted the **six-storey environmental activist**. "Greta is awesome and she knows what she's doing!"



Re-tyred rubber!

Some **rubber tyres** were given a new lease of life at the **UN Climate Conference** in **Madrid, Spain**, last year. These ones were turned into super-sized sculptures of a **unicorn** and a **bear**. Wild idea!



Icy art

Check out these incredible creations, on display at the annual **Ice Sculpture Festival** in **Zwolle, the Netherlands**. Artists carved **275,000kg** of **ice** and **snow** to create the amazing objects and animals, which are on show until **1 March**.



BONKERS BOILERS

This funny-looking **jellyfish** has been made out of **old boiler parts**! The jelly and other metal artworks were on display at the pop-up **Museum of Boiler Arts** in **London, UK**.



CHICKEN NAPPIES

Do you keep **chickens**? Fancy letting them **run around your house**? Well, thanks to **chicken nappies**, you can – and they won't make a mess on the carpet!



CHILLY TUNES

These men in **Kalofer, Bulgaria**, were snapped **dancing** in the freezing **Tundzha River** last month. The local tradition celebrates **Epiphany** and the baptism of **Jesus**.

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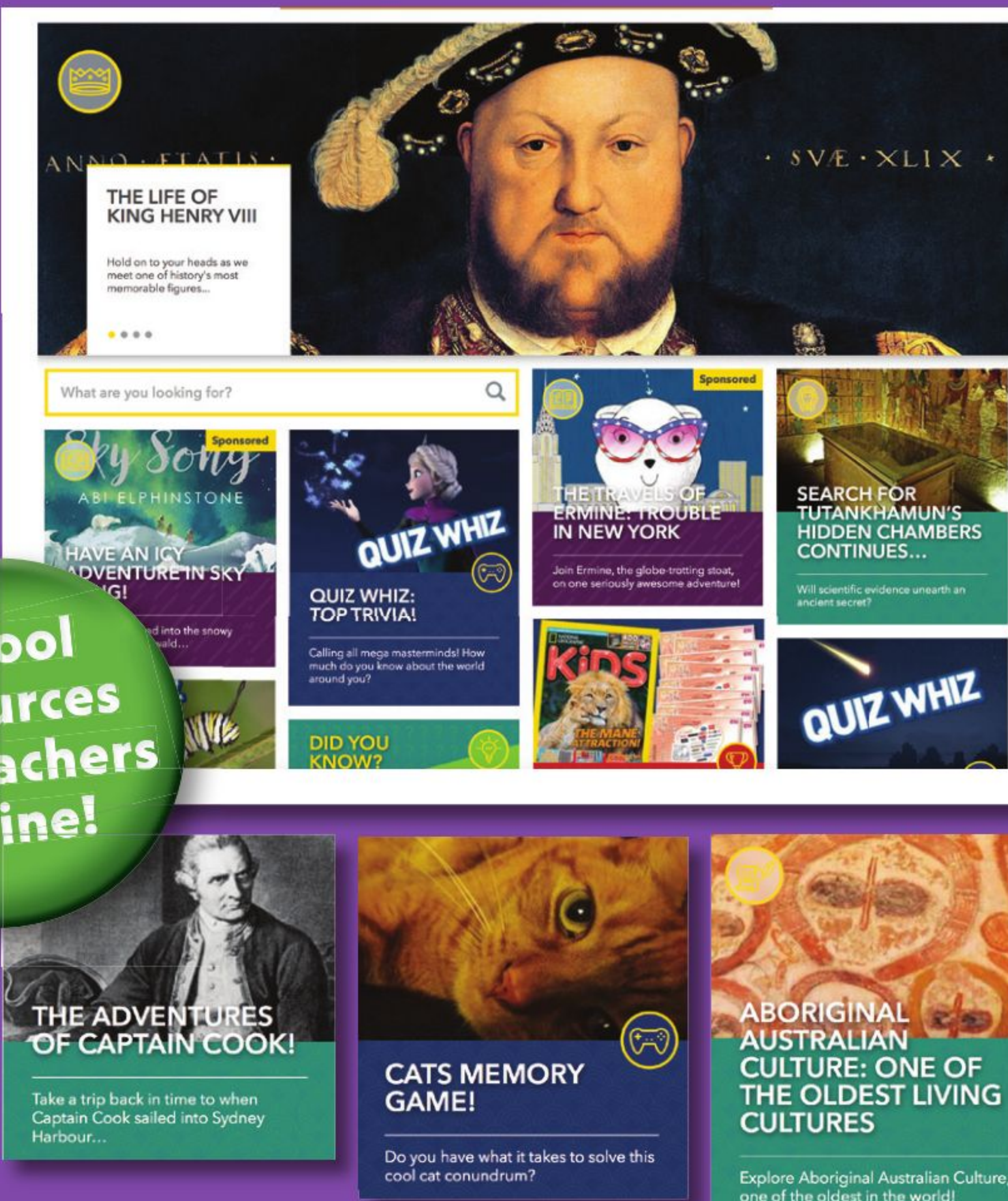
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