



NATIONAL
GEOGRAPHIC

151
PRIZES
INSIDE!



KIDS

AMAZING ANIMAL LOLZ

Do creatures have a
sense of humour?

WEIRD
BUT
TRUE!



8

AWESOME
FOSSIL
FACTS



HISTORY'S
GREATEST
HITS

MARIE CURIE



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Hello!

Do you sometimes think that your pet is laughing at you? Does it 'giggle' when you tickle its tum? Well, turn to page 16 and then decide for yourself whether animals have a sense of humour!



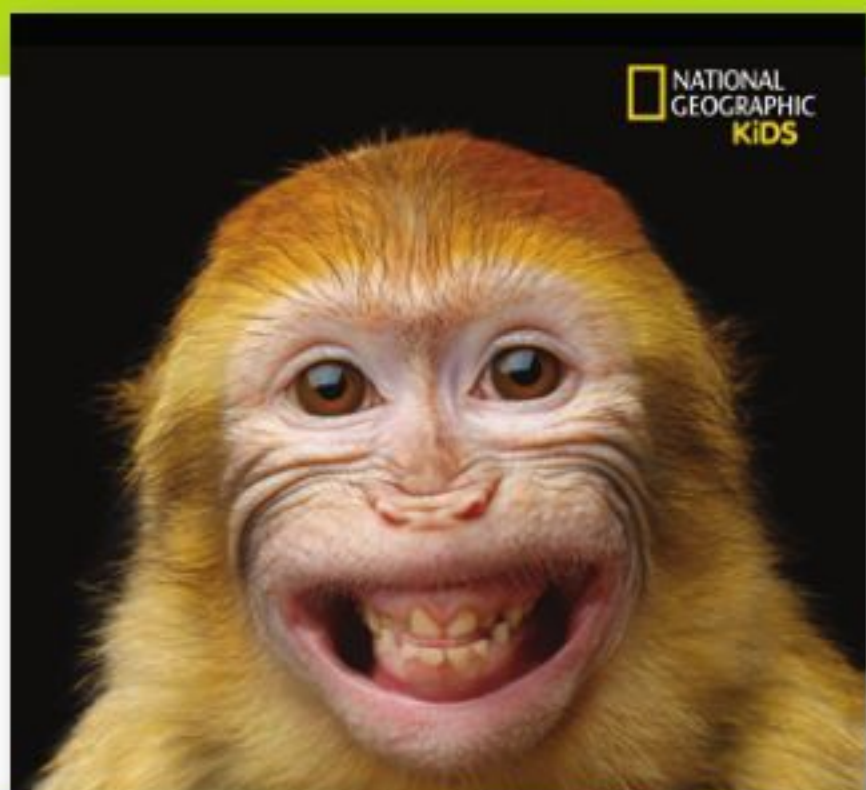
Also this issue, we speak to a scientist about his work tracking seals from space, hear from some embarrassed Nat Geo explorers, and check out eight amazing fossils. Plus, we learn about the life of Nobel Prize-winning scientist Marie Curie.

Make sure you enter our awesome competitions this month – there are 151 prizes up for grabs!

Enjoy the issue,

Editor, Tim

FREE this issue...



4 POSTERS!

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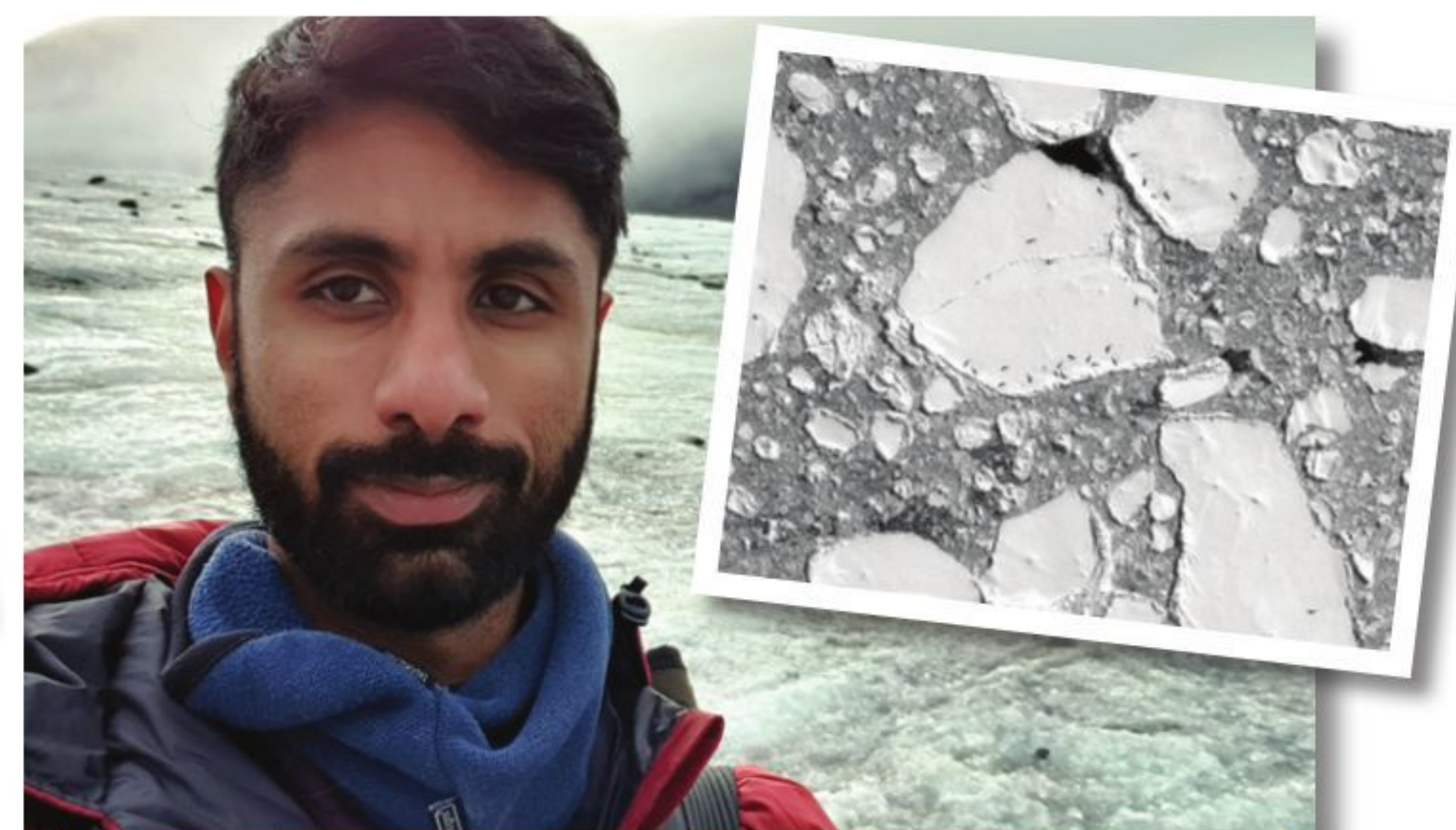
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INSIDE SCOOP

The latest news from around the globe...

Printed space 'meat'!

 Astronauts on the International Space Station (ISS) made history on **26 September** by **creating meat in space** – and no animals were harmed during the process! The technology, developed by **Israeli** company **Aleph Farms**, uses various cow cells plus a **3-D bioprinter** and **bio-ink** to mimic the way cows grow tissue, gradually combining the cells until '**space beef**' forms!

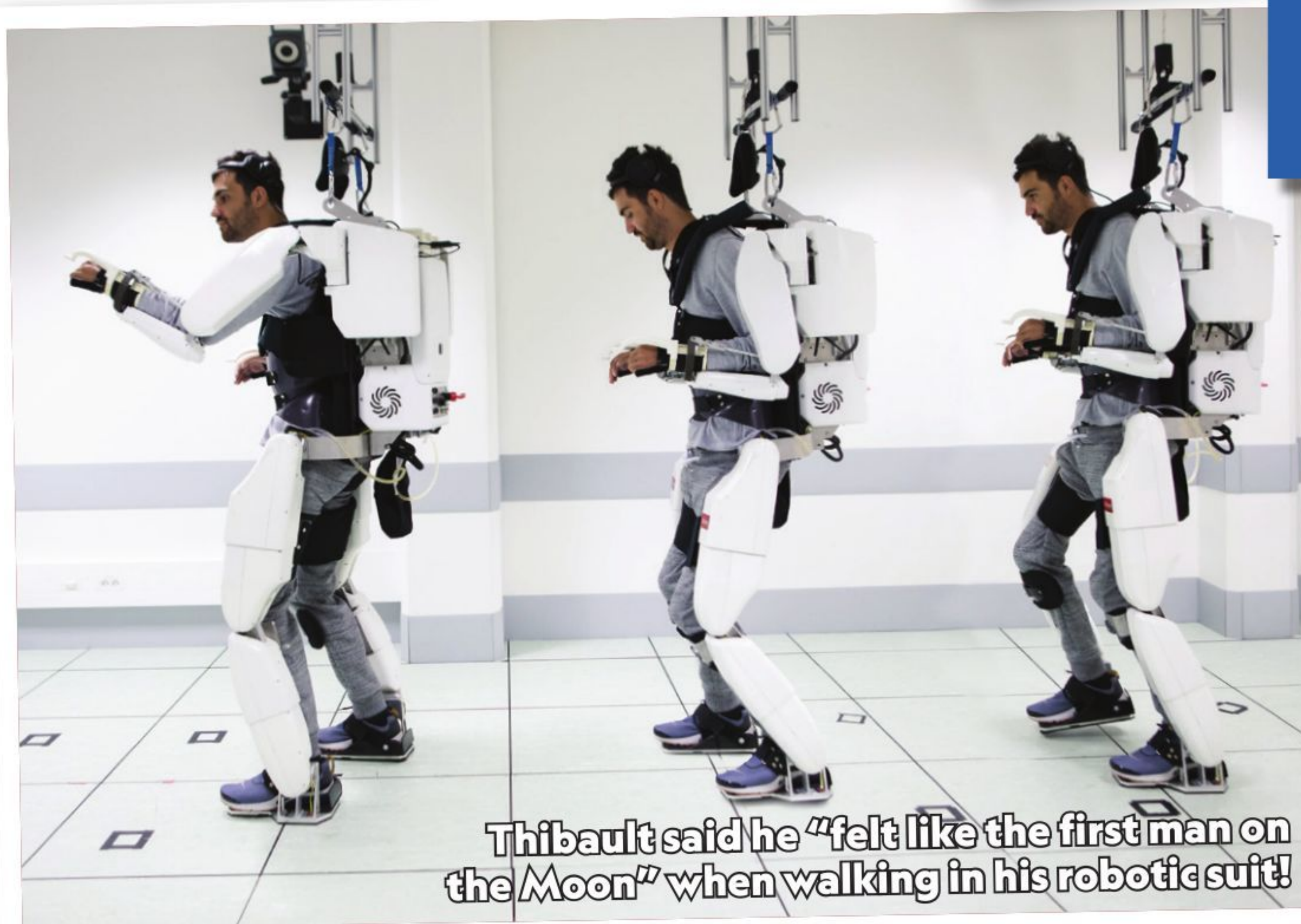
The company hope this technique will one day be able to provide meat for people living on the ISS, and may even be used to **feed people on Earth**. They say their '**slaughter-free**' meat will be much better for the environment, as the **water, land** and **time** needed to grow it is vastly reduced. What an *out-of-this-world* idea!



The meaty morsel




From astronauts to gastronomists!



Thibault said he "felt like the first man on the Moon" when walking in his robotic suit!

Robo wonder suit

 Scientists in **France** have designed a **mind-controlled robotic suit** that's helped a **paralysed man** to walk! The man, called **Thibault**, lost the use of his arms and legs following an accident four years ago, and he didn't think he'd ever walk again. But researchers put **special implants** onto the parts of his **brain** that control **movement**, and developed a **video game** to **train** his brain signals.

Now, after months of practice, when Thibault is strapped inside a **robotic exoskeleton** he's able to **control the suit with his mind** and **take steps**! The scientists, who created the ground-breaking device at **biomedical research centre Clnatec** and the **University of Grenoble**, say they're still researching its potential, but they hope it may one day lead to **brain-controlled wheelchairs**. So cool!

Robo man: Juliette Treillet/Clnatec illustration © Marek Jagucki.
All other pictures © Getty Images UK.

3 FAST FACTS!

THE FLU

All **primary school kids** in the UK are being offered **vaccinations** against the **flu** this year. The vaccine can help **protect you** and your **family** from feeling really **poorly**. Let's find out more...

1 The '**flu**' is an **infection** caused by a **virus** (microscopic germ) called **influenza**. It gets its name from the **Italian** word for '**influence**', because people used to believe that the flu was controlled by the **stars, planets** and the **Moon**.

2 Forget feeling sniffly, catching the flu is usually way **worse** than having a **common cold**. The virus infects the **nose, throat** and **lungs**, and symptoms can include **headaches, tiredness, aching muscles, runny nose, fever, chills**, and a **nasty cough**. Yuck!

3 Flu germs spread through the **air** when someone who has the virus **sneezes, coughs** or **speaks** – and via **objects** and **surfaces** that they might **touch**. People who have the virus can be **contagious** a whole **day** before their symptoms start, and up to a week after they first get sick!



Sleep and drinking plenty of fluids are the best cures for flu

GET INVOLVED!

CHRISTMAS JUMPER DAY

Want to wear a **woolly** and help **save kids' lives** this **December**? Then take part in **Save The Children's** annual **Christmas Jumper Day**!

The charity is asking people to pay **£2** to wear a **jazzy jumper** to **school** or **work** – and the funds raised will go towards helping **disadvantaged kids** around the world have a better life.

● **Christmas Jumper Day** is on **13 December**. Ask your parents or teacher to sign up at savethechildren.org.uk/christmas-jumper-day



Wear your **snazziest sweaters** this **December**!

MAKE IT A DATE

What's going on this month?



DEC 4

International Cheetah Day

Let's celebrate these big cats!

DEC 10



Human Rights Day

All people are born free and equal in dignity and rights!

DEC 11



International Mountain Day

Find out more about mighty mountains at un.org/en/events/mountainday

DEC 20-5



Festival of Winter Walks

Find a route near you at ramblers.org.uk/go-walking

DEC 22



Winter Solstice

Wrap up warm because it's the first day of winter!

Scotland bans smacking!



Scotland has become the first country in the **UK** to make **smacking kids illegal**. The **Scottish Parliament** passed the new law, which gives **children** the **same protection as adults**, at the start of October. It means smacking will now be treated as a **criminal offence** in Scotland.

Fifty-eight countries around the world have now made hitting children illegal, including **Sweden** (the first country to bring in such a law, back in **1979**) and **Ireland** (who banned smacking in **2015**). Will **England**, **Wales** or **Northern Ireland** be next?



Kids in Scotland are now protected by law

DEC 5

Krampus Parade!

You've heard of **Santa** – jolly fellow, **dishes out gifts**. Well, in **Central Europe**, he's said to have a **sick sidekick** called **Krampus**, and the pair couldn't be more different. **Half goat, half demon**, and with **huge fangs**, Krampus is on a mission to **punish naughty kids**!

As monstrous as Krampus might sound, he's a **popular figure** in **Austria**, **Germany** and the **Czech Republic**, where people **dress up** as him and take part in **fun, freaky parades** – the biggest and most raucous of which take place in **Tyrol, Austria**.

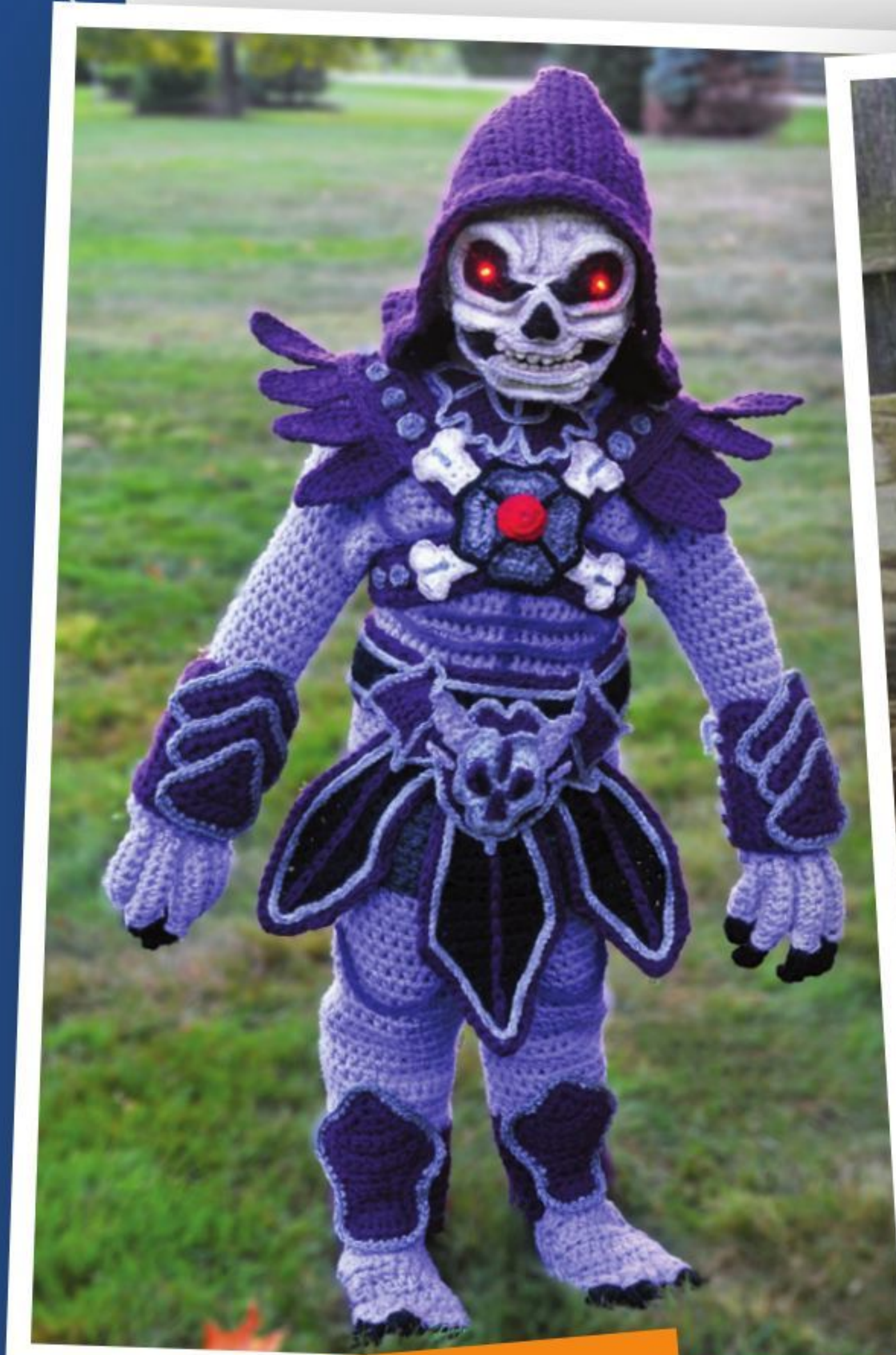
Krampus is said to have roamed parts of the **Alps** causing mayhem for hundreds of years, whipping unruly people with sticks – a cunning way to scare kids into good behaviour! People even swap **Krampuskarten** (**Krampus cards**) at this time of year!



CRAZY EVENT

WACKY WORLD!

Check out the planet's strangest pictures...

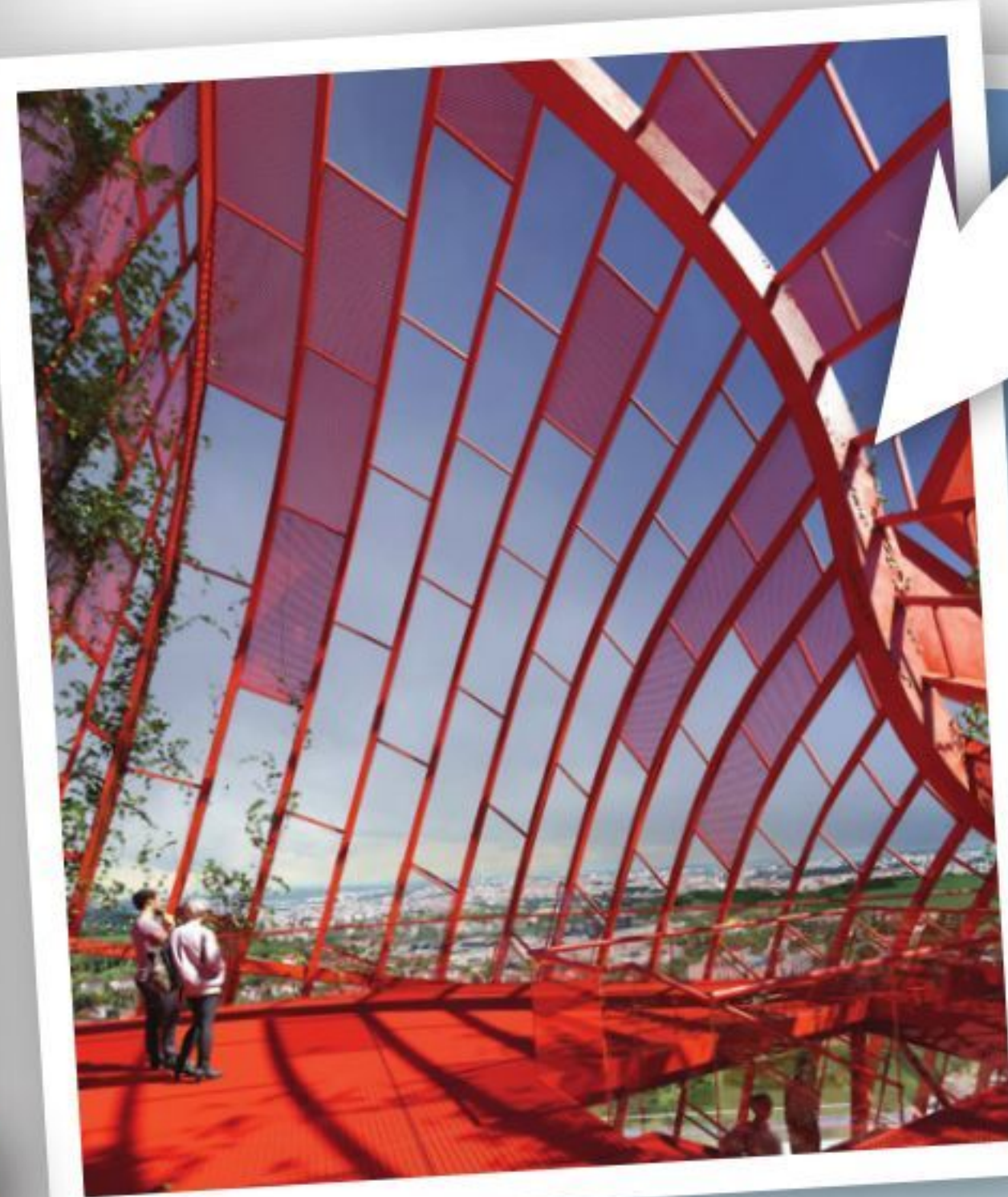


Scary stitches

Did you dress up for **Halloween** this year? Well, **Stephanie Pokorny**, from **Ohio, USA**, really goes to town each autumn, **crocheting costumes** for her kids to wear while **trick-or-treating**. These two are our faves – **Skeletor** from 1980s' kids' TV show **He-Man**, and **ET**. Cool mum or what?!

Shipwreck!

This design for a **235-m-tall skyscraper**, planned to look like a **sinking oil tanker**, is earmarked for the outskirts of **Prague** in the **Czech Republic**. Artist **David Černý** and architect **Tomáš Císar** hope the controversial tower will highlight the **climate emergency**.



Feast for fidos

Having a ruff day? Pug-get about it by checking out these messy pics of **Australia's largest dog cake!** More than **1.5m high** and weighing over **120kg** – that's heavier than a **newborn elephant!** – the dog-friendly cake was baked by chef **Anna Polyviou** to celebrate the **50th birthday** of cartoon canine, **Scooby Doo!**



SANDY PROTEST

This **sand sculpture** of **Hindu god Ganesh** was made to celebrate the recent **Ganesh Chaturthi** festival in **Puri, India**, and urge people to stop using **plastic bottles**.



POTTY PILLAR BOXES

Kent-based artist **Alex Chinneck** loves making twisted **sculptures**. His latest work, a series of knotted **post boxes**, can be seen in **Margate, London** and **Ticehurst, Sussex**. Cool!



TARGET PRACTICE

This person was snapped hurtling through the air at the recent **World Wingsuit Championships** in **Zhangjiajie, China**. Bulls eye!





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WHAT'S UP?

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



Stardog and Turbocat

Launched into space by his **scientist owner** in **1969**, loyal **dog Buddy** crash lands in the **present-day** in a small town where **pets are banned** and are **ruthlessly rounded up** by an **animal-hating cop** called **Peck**. Yikes!

Desperate to be reunited with his owner, Buddy teams up with **genius millionaire cat Felix** to help him in his quest. The plucky pair find themselves transforming into **paw-some superheroes, Stardog and Turbocat**, to take on the evil Peck!

This **British 3-D animation** looks like loads of fun!

● In cinemas 6 December



The greatest superheroes ever unleashed?



Moving to Mars

If all goes to plan, and humans one day head to **Mars**, life is going to be tough. **Radiation, extreme temperatures** and a lack of **natural resources** mean every element of a trip there will need to be **carefully designed and sustainable**.

This fascinating **exhibition** explores the **unique challenges** we'll face when making our home on the **Red Planet**, from the **architecture and tech** to **food and clothing**. You can even **experience** what it would be like to step foot on **Martian soil** yourself. Cool!

● **Moving to Mars** is at **London's Design Museum** until **23 February 2020**. Find out more at designmuseum.org



Could this be the fashion on Mars?



Mars food will need to be grown in special labs!

Future Martians may live in houses like this!



8+



Klaus

When lazy **Jesper** is sent to a remote **Arctic town** tasked with setting up a postal service, he has his work cut out. No one there sends mail and everyone is miserable! But after meeting grumpy **toy maker Klaus**, Jesper comes up with an idea to get people writing letters – and he transforms Klaus into a familiar **ho-ho-wholesome hero** along the way! The setting may be chilly but this lovely **hand-drawn film** is sure to warm your heart!

● In cinemas 8 November and on Netflix from 15 November



Can Jesper warm up his icy world?

Turn the page for an interview with the film's **chief animator!**



The Biggest Little Farm

City slickers **John and Molly** move to the **country** to set up a **farm**, and they want their new home to be in **perfect harmony with nature**. But they soon find themselves up against **hungry snails, mischievous moles, fruit-munching pests** and **perilous wildfires!**

With stunning **cinematography** and tons of **cute animals**, this uplifting **documentary** will make you appreciate the **wonders of nature** and the importance of **biodiversity**.

● In cinemas 29 November



Prepare for cuteness overload!

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Enter ALL comps at
natgeokids.com

KEY



Show



Movie



DVD



App



Book



TV

Christmas Lectures

Brainboxes rejoice! The **Royal Institute's Christmas lectures** are back, and this time they're about the magic of numbers.

In ***Secrets and Lies: The Hidden Power of Maths***, presenter **Hannah Fry** will reveal the **numbers, rules and patterns** that **secretly influence** our daily lives in ways we could never imagine!

Prepare for mind-boggling **demos** and **live experiments** that will change the way you think about **maths**, forever!

● The lectures will be **live-streamed** to venues around the UK on **12, 14 and 17 December!** You can also catch them on **BBC Four** between **Christmas and New Year**. Find out more at rigb.org/christmas-lectures

Who knew maths could be so hilarious?!

It's maths genius
Hannah Fry

e Farm

Oink-some animals!

Bees are vital to farms!



Your book reviews



Hotel Flamingo Alex Milway

A little girl called **Anna** inherits a **hotel** that's in a right old mess. But it's not a *normal* hotel – all sorts of **animals** are welcome, from **tortoises, beetles, cats, cockroaches** and, of course, **flamingoes** – all with their own **crazy rooms** and **dinner demands**.

On top of that, they have a **hotel inspector** to deal with!

I enjoyed this fun adventure with Anna, as she tries to change the fortunes of the hotel with her new staff – a handy **giraffe** and a crazy, talented **pig chef**. Lovely **sketches** brought the story to life.



Maiya, 8

The Day I Found a Wormhole at the Bottom of the Garden Tom McLaughlin

In this strange but entertaining book, **nine-year-old Billy** finds **Queen Victoria's crown** in his garden using his **metal detector**.



Hugo, 7

I learned quite a lot about historical characters from the book, including **Einstein** and **Shakespeare** – my favourite character was **Shakespeare the dog!** I've now decided to ask for a metal detector for Christmas as I hope to find buried armour and other historic items!



Nevertell Katharine Orton

Lina is a brave **12-year-old girl** who was born in a **prison camp** in **Russia**. Together with her best friend **Bogdan** she escapes and starts a **dangerous adventure** in the very cold **Soviet winter** to find Lina's **grandmother** in **Moscow**.

Every page is a **mystery**, filled with new people, places, adventures, moths, shadows and special necklaces – and let's not forget the **magic!** It's a **thick book** and some chapters are **scary** but it's so **interesting** and **surprising** that you won't want to put it down!



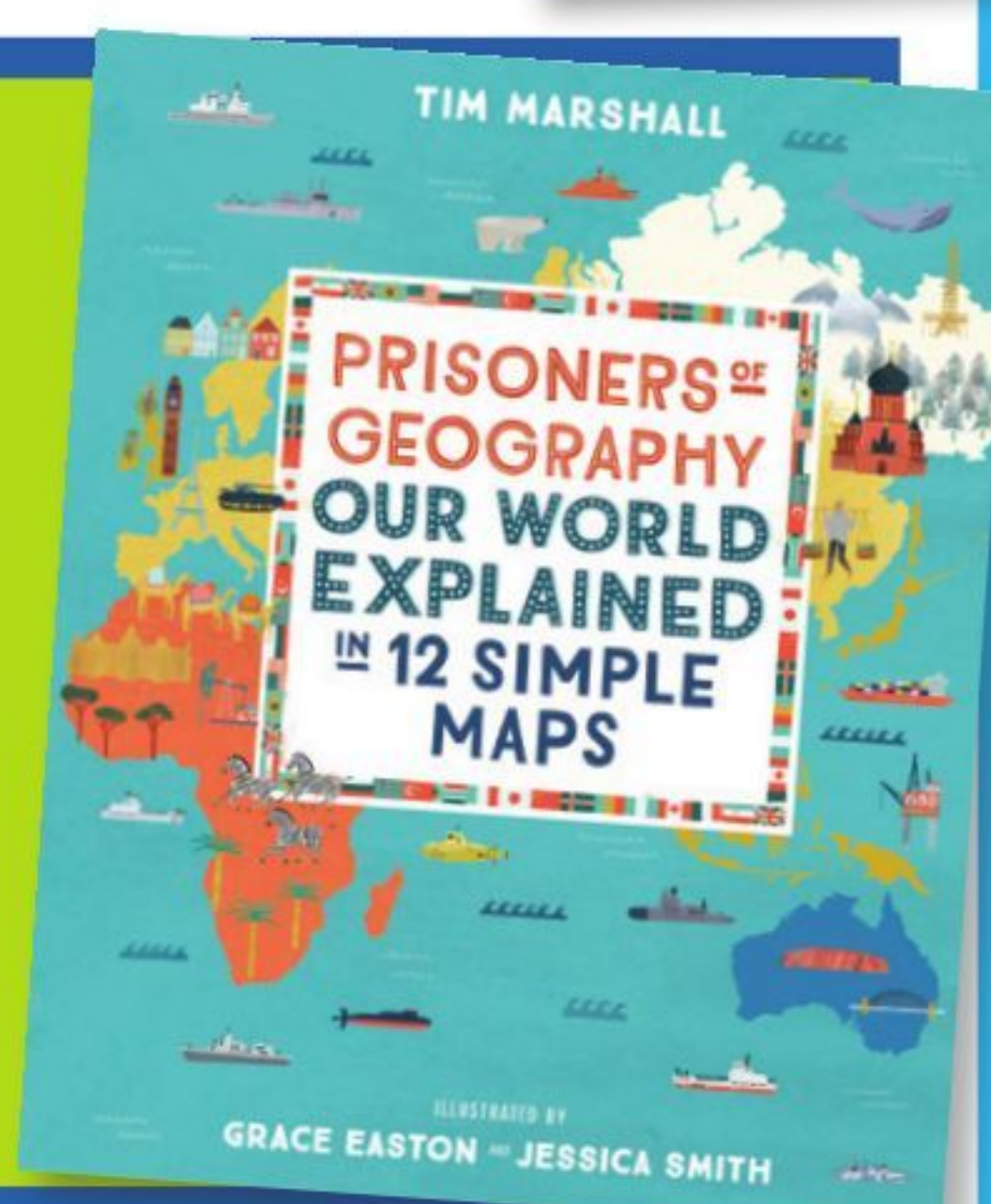
Layla, 10

9+

FACT BOOK OF THE MONTH

Prisoners of Geography: Our World Explained in 12 Simple Maps Tim Marshall

This **beautifully illustrated** book explains how the **landscape** of different countries has affected **key events** in their history! Read how **mountains** and **islands** lead to **wars**, why some countries are more **powerful** and **prosperous** than others, and how **geography** keeps **politicians awake at night!** This eye-opening book will help you see the world in a whole new way!



Covering 17 million km², **Russia** is the **largest country** in the world. It's **70 times** the size of the UK and has **11 different time zones!**

WIN!

Five winners will scoop all four of these books!

Q What's the longest mountain chain in the world?
a) The Andes b) The Alps c) The Rockies

Klaus

Enjoy a sleigh full of holiday cheer in this heart-warming movie about myth-making and the power of post... and kindness!

Jesper is **lazy** and **spoilt**, and he loves nothing more than being **wrapped up** in his lovely **silk bedsheets**. So when his **dad**, the **Postmaster General**, sends him off to set up a post office in the frozen **Arctic island** of **Smeerensburg**, things seem pretty **rotten**. For starters, the **feuding locals** hardly exchange **words** let alone **letters**!

Jesper is about to give up and head home when he meets **Klaus** – a **mysterious carpenter** who lives **alone** in a **cabin** full of **handmade toys**.

Their unlikely friendship brings **laughter** back to Smeerensburg, along with **generous neighbours**, **magical stories** and **stockings** hung by the chimney.

Watch online
at **Netflix.com/
Klaus** from
15 November

MAKING MOVIE MAGIC

We chat to **Klaus'** top animator **Sergio Martins** to find out how this festive film was brought to life...

Hi Sergio! How does an animation start life?

Once we get the **script**, the **story artist** does a **comic strip** – an easy way to decide what will be on screen. We then work out

the **movement** with very **rough sketches**, such as **stick-man figures** or **balls with eyes**. After that we do a '**tie down**', which is the same movement but with **pretty drawings** (right). Then the **clean-up** team **neaten it up** with the final **line drawings**.

So it's still black and white at that stage?

Yes. That's where the **ink and paint people** add **colour** to the main shapes. Finally, **shadow** and **lighting** are painted onto the characters using **new technology** unique to **Klaus**. So there's a little help from **computers** but basically **every single frame** is **painted** and **drawn**.

Amazing! What's the most difficult thing to animate?

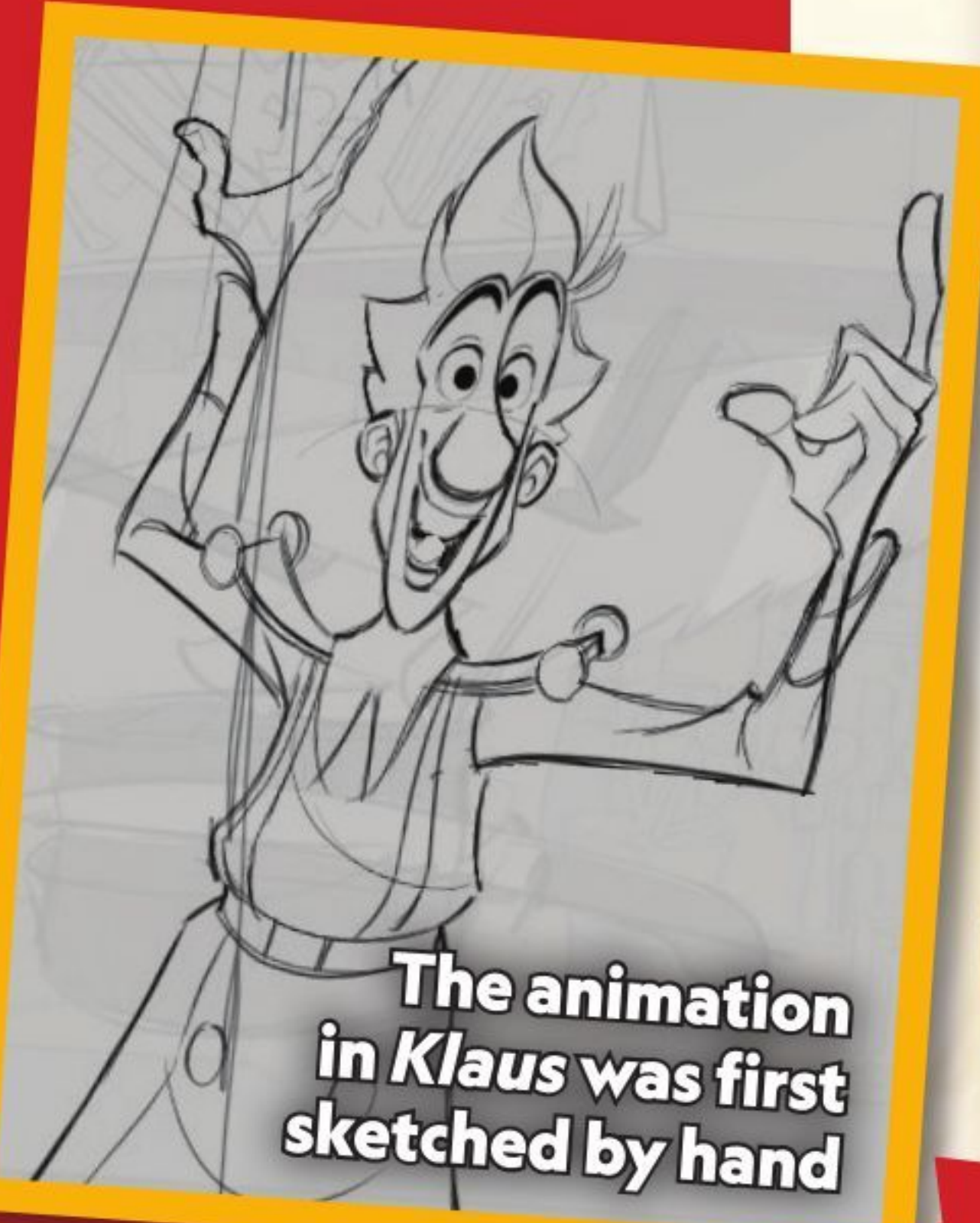
The **emotional scenes**. Even **actors** can have a hard time doing them, so making the audience believe a character is going through a tough time by **just using drawings** is challenging.

What inspired the town of Smeerensburg?

It's based on a **real place**! We were doing research and the director came across a remote town in **Northern Scandinavia**. The indigenous **Sámi people** who live there **recorded voices** for the movie in their own **native language**!

Cool! What are your top tips for aspiring animators?

Learn how to draw, and **draw as much as you can**! Copy your **fave artists**, draw people and have **fun**. Then try making something that's **unique**.



Check out Klaus' enormous beard!

WIN

A GIFT CARD!

To celebrate **Klaus** coming to **Netflix** we're giving away a **£150 voucher** for you to spend at **The Entertainer** toy shop! For a chance to win, answer this question...

Q Which of these do you attach to a letter before posting?

- a) Stamp b) Passport photo
c) Penny

Enter at natgeokids.com

Klaus is in select UK cinemas **8 November** and globally on **Netflix** from **15 November**

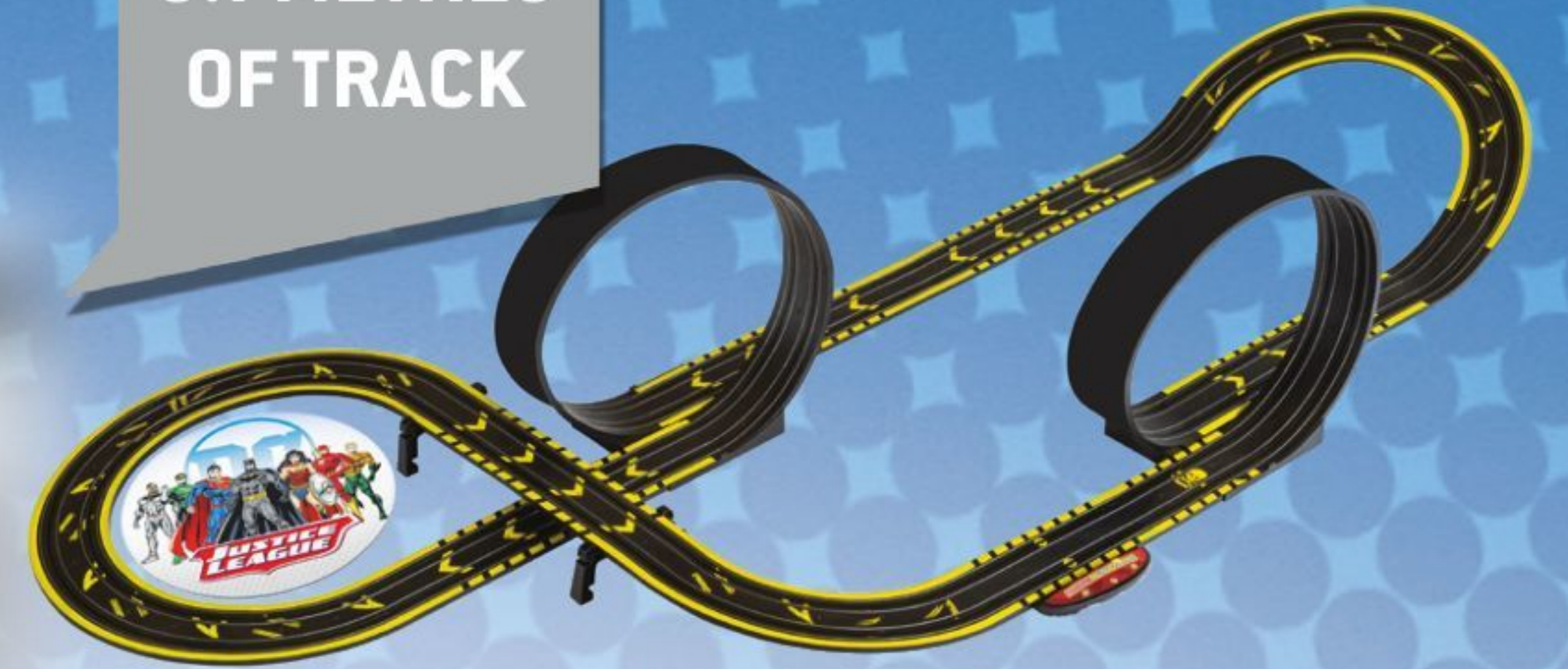


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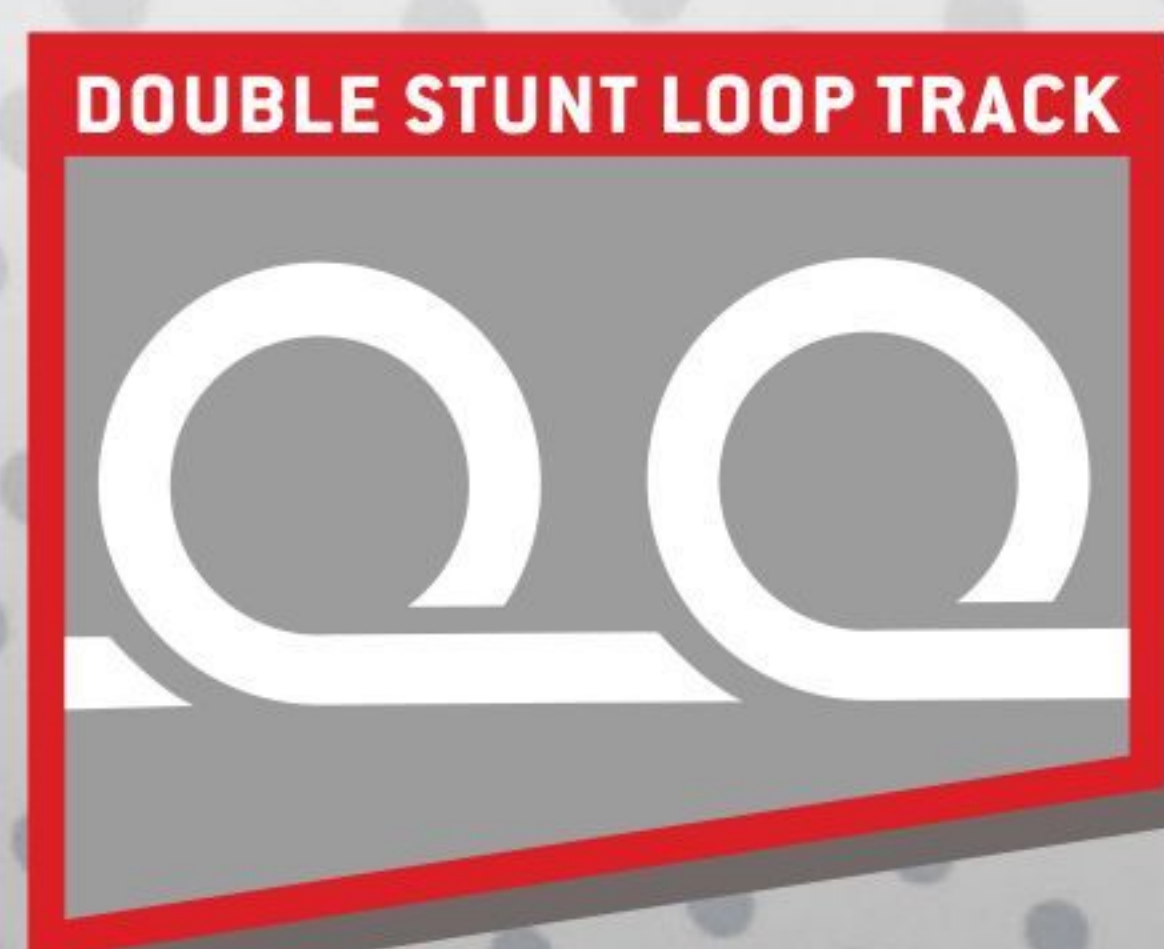
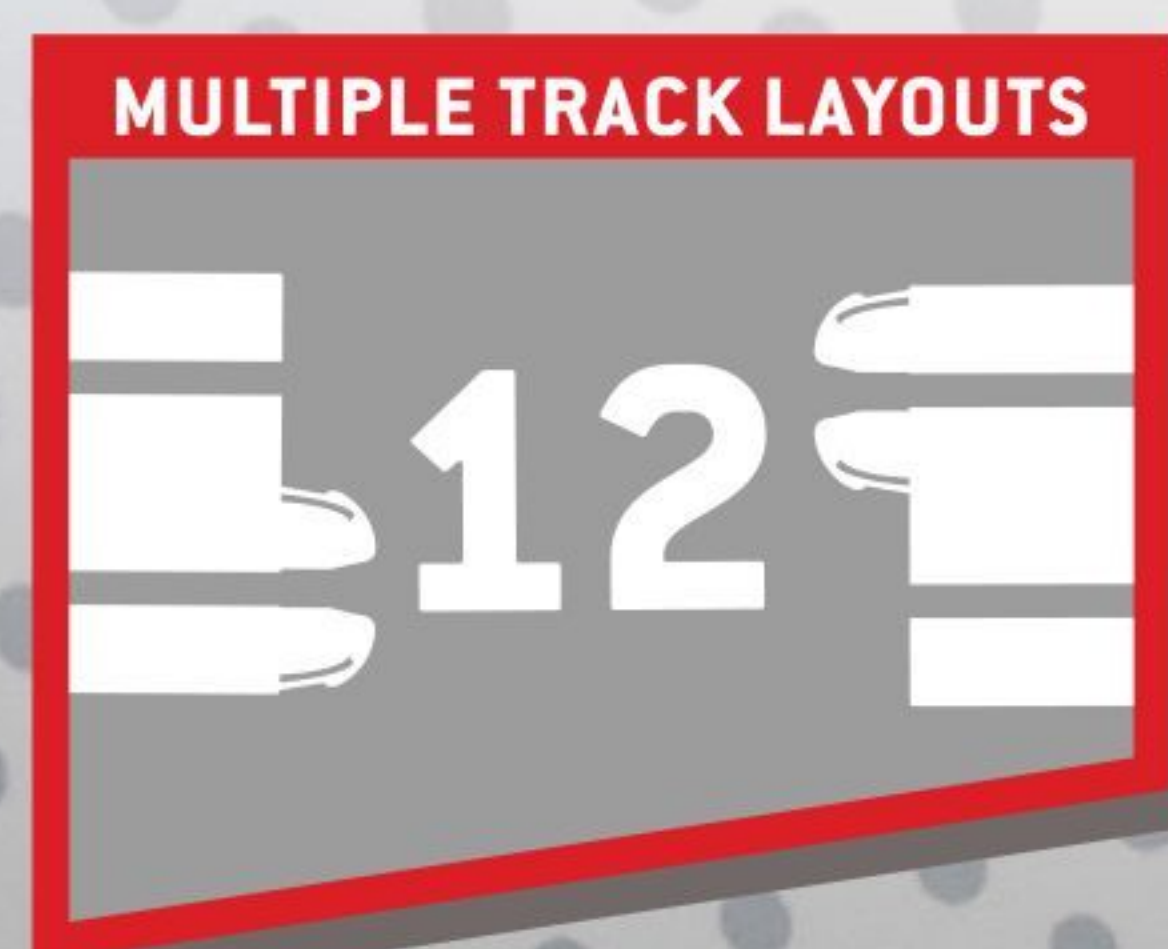


RACE YOUR FAVOURITE CHARACTERS (WONDER WOMAN +
FLASH SOLO CARS)

- WITH INDIVIDUAL CARS AVAILABLE, FANS OF THE FLASH AND WONDER WOMAN CAN JOIN THE RACE TOO.
- COLLECT THEM ALL AND CREATE NEW ADVENTURES FOR THE MEMBERS OF THE JUSTICE LEAGUE.



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THE

BIG PICTURE

NAT GEO KIDS'
image of the month

N-ice cool drink!



No, this **bird** doesn't have a **ridiculously long beak**. It's actually a **Hokkaido long-tailed tit**, hovering for a split second to nip a beakful of ice from an **icicle**. Photographer **Diana Rebman** took the chilly pic one bitterly cold morning on the island of **Hokkaido** in **Japan**, after she came across a **flock of birds** gathered around the **icicle**, **taking it in turns** to **nibble** or **sip** the tip, depending on how much ice had **melted**. Amazing! Her stunning photo was **highly commended** in the **2019 Wildlife Photographer of the Year** awards. N-ice work, Diana!

● Check out this pic and loads of other awesome animal snaps at **London's Natural History Museum** until **31 May 2020**.



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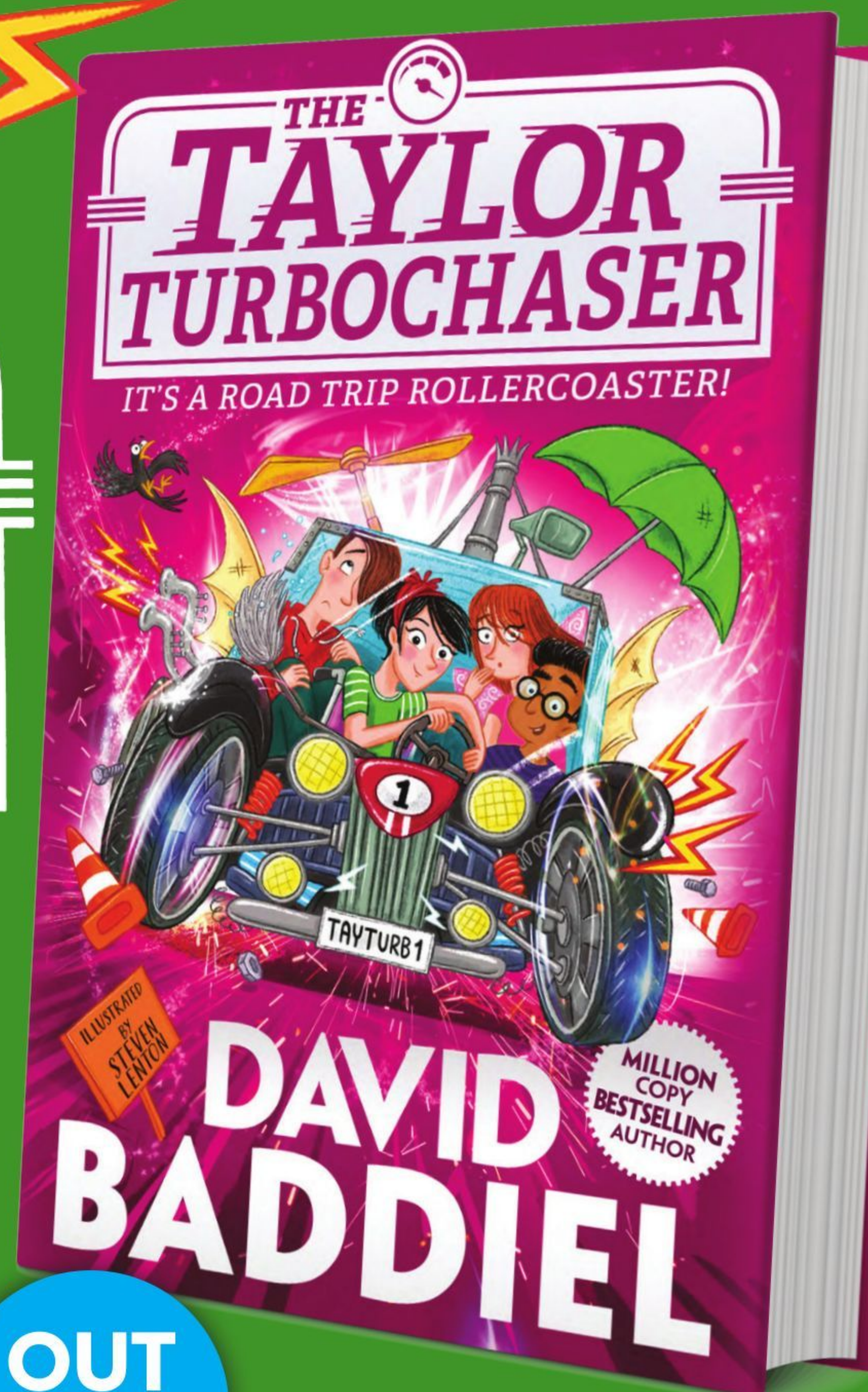
HarperCollinsChildren'sBooks
presents

THE TAYLOR TURBOCHASER

GET READY FOR THE RIDE OF YOUR
LIFE IN DAVID BADDIEL'S BRILL
NEW BLOCKBUSTER!

Jump on board **The Taylor Turbochaser** for a **rollercoaster road trip**! Eleven-year-old **Amy Taylor** loves **cars** more than anything. And even though she was in a really bad **car accident** when she was **eight** – which means she has to use a **wheelchair** – she's determined to be a **race car driver** one day.

So, when her **genius inventor best friend**, **Rahul**, turns her wheelchair into a **super-car**, Amy jumps straight into the **driver's seat**. And it's not long before she and her friends set off on an **epic adventure**!



OUT
NOW!

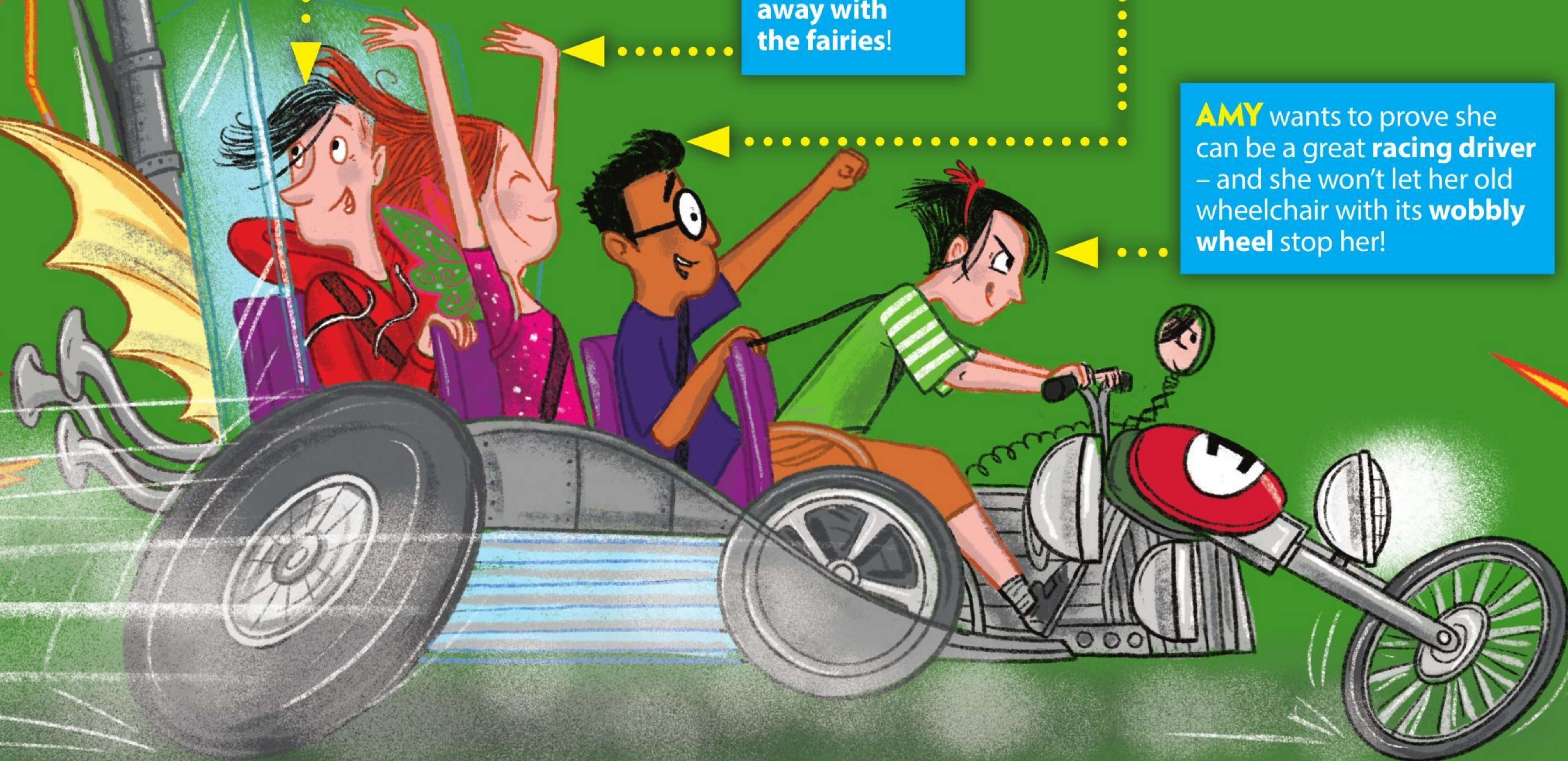
WHO'S WHO?!

JACK is Amy's **grumpy older brother** – and the most **sarcastic 14-year-old** ever!

JANET is Amy and Rahul's friend, and is permanently **away with the fairies**!

Inventor **RAHUL** transforms his best friend Amy's wheelchair into **The Taylor Turbochaser**!

AMY wants to prove she can be a great **racing driver** – and she won't let her old wheelchair with its **wobbly wheel** stop her!



MEET THE TURBOCHASER

Amy's awesome new ride is packed with fun features...

ENGINE CHIMNEY

WINDOWS MADE FROM UPSIDE-DOWN FISH TANKS

EMERGENCY UMBRELLA

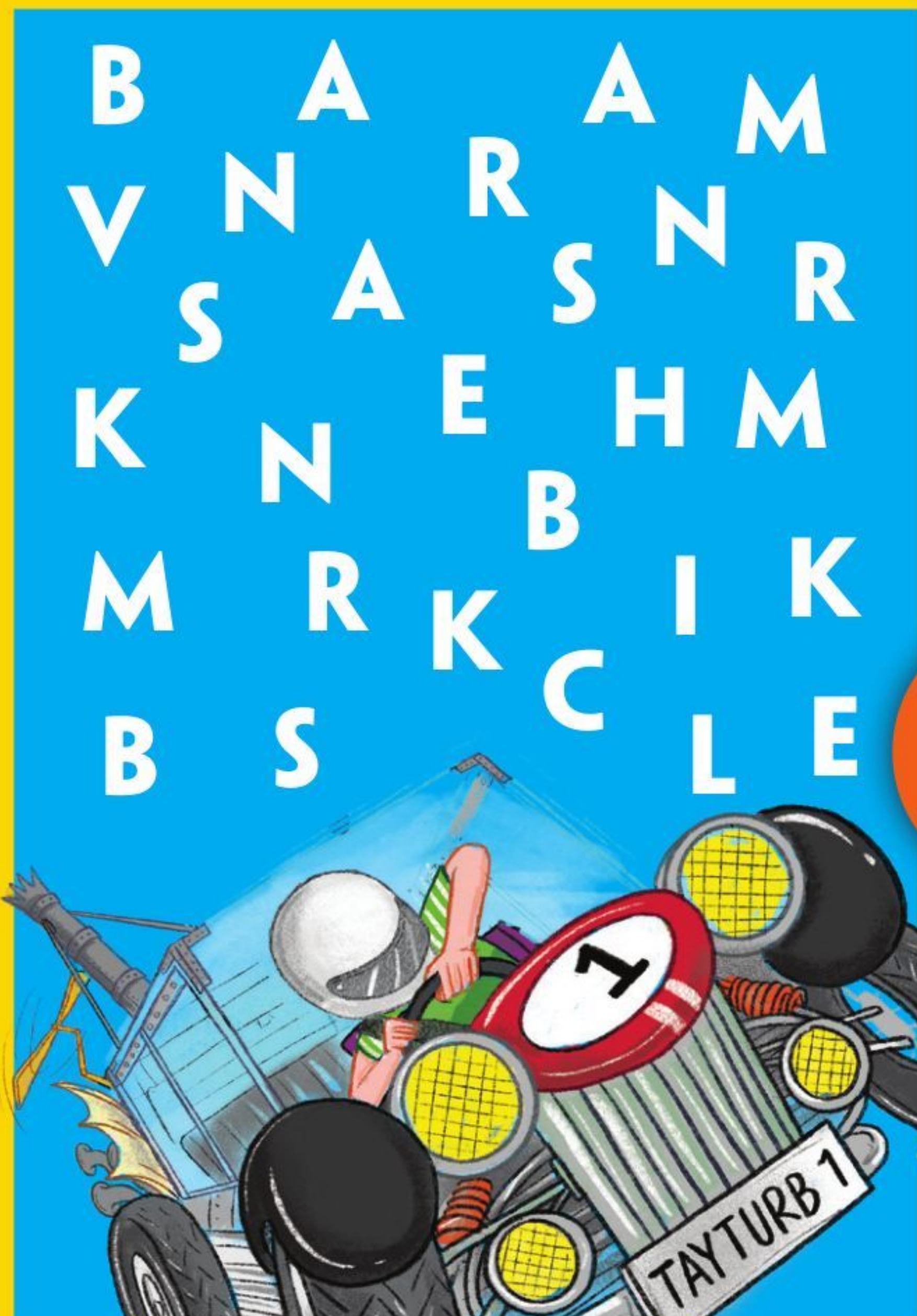
BICYCLE WHEELS

MONSTER TRUCK WHEELS

DINING ROOM CHAIRS FOR PASSENGERS

TURBO TIME!

Cross out the letters that appear three times to reveal another word for a car...



Answer on page 55

AUTHOR FACTS

- David Baddiel had a cat called Phomphar when he was growing up.
- His song *Three Lions* has been at number one in the pop charts four times!



WIN

YOUR STORY IN NAT GEO KIDS!

Calling all young authors! We want you to **write a description** of your **dream road trip**. Tell us **where you'd like to go** and **why**, what **vehicle** you'd travel in and **who** you would be with – and make sure your entry is as **imaginative as possible!**

Entries must be **no longer than 150 words** and the winning piece of writing – chosen by **David Baddiel**, author of *The Taylor Turbochaser* – will be **printed in a future issue** of NG KIDS. The winner and **three runners-up** will scoop a **copy of the book**, too!

Post your entry to the address on **page 3** or email it to **kids@ngkids.co.uk** with 'Turbochaser' in the subject line. Good luck!

Write on

These top tips will help you get writing!

- Stuck for ideas? Try **daydreaming!** Let your mind wander and you could soon have tons to write about.
- Make a **list of funny, bonkers things** that pop into your head. Some of them might end up in your story!
- Find inspiration by **asking other people** what their dream car journey would be.
- Think of **funny things** that have happened to you and make them part of your story.

Zoom over to **po.st/turbochaser** to find out more!



MORE BRILLIANT BLOCKBUSTERS FROM DAVID BADDIEL!



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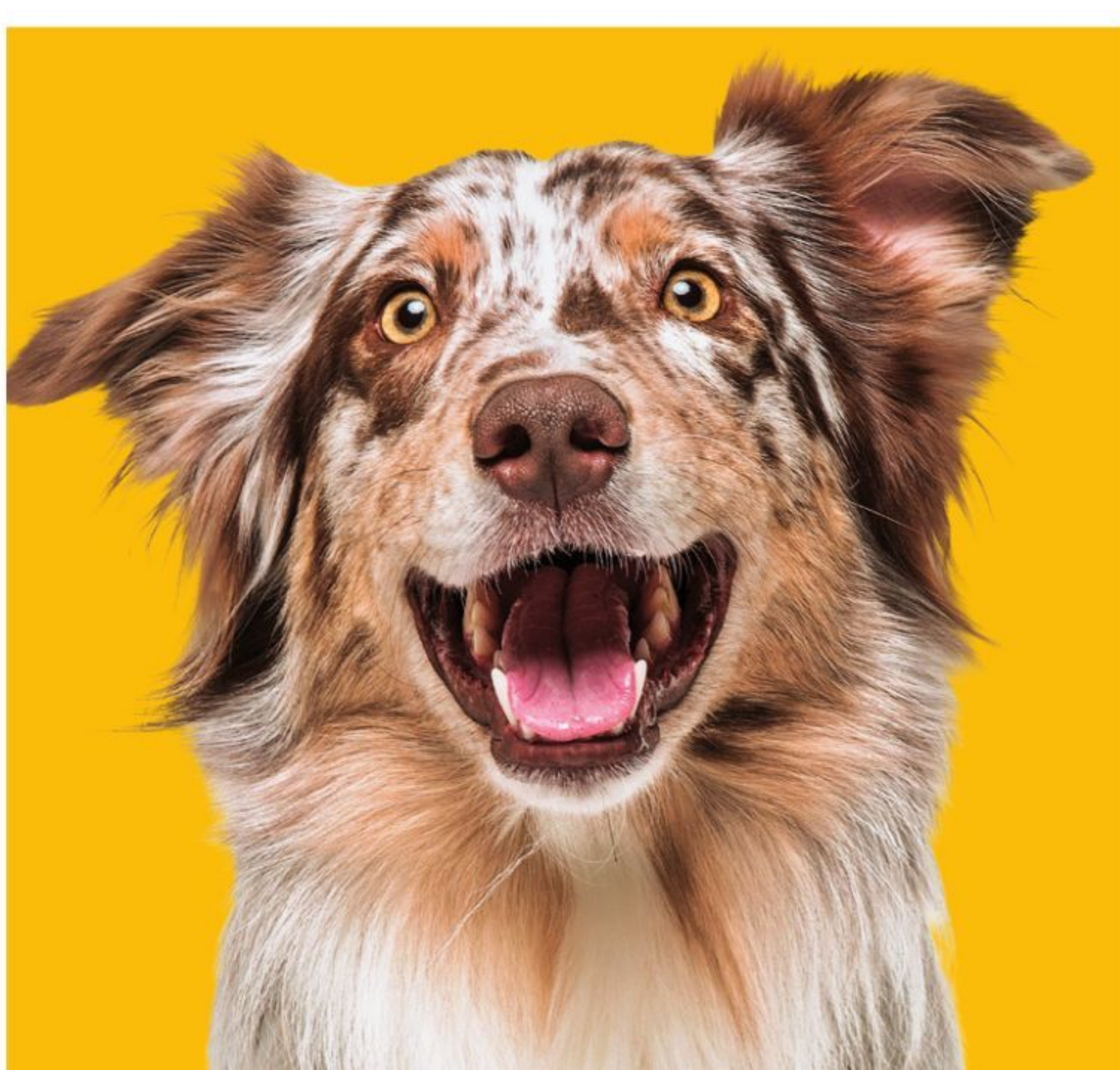
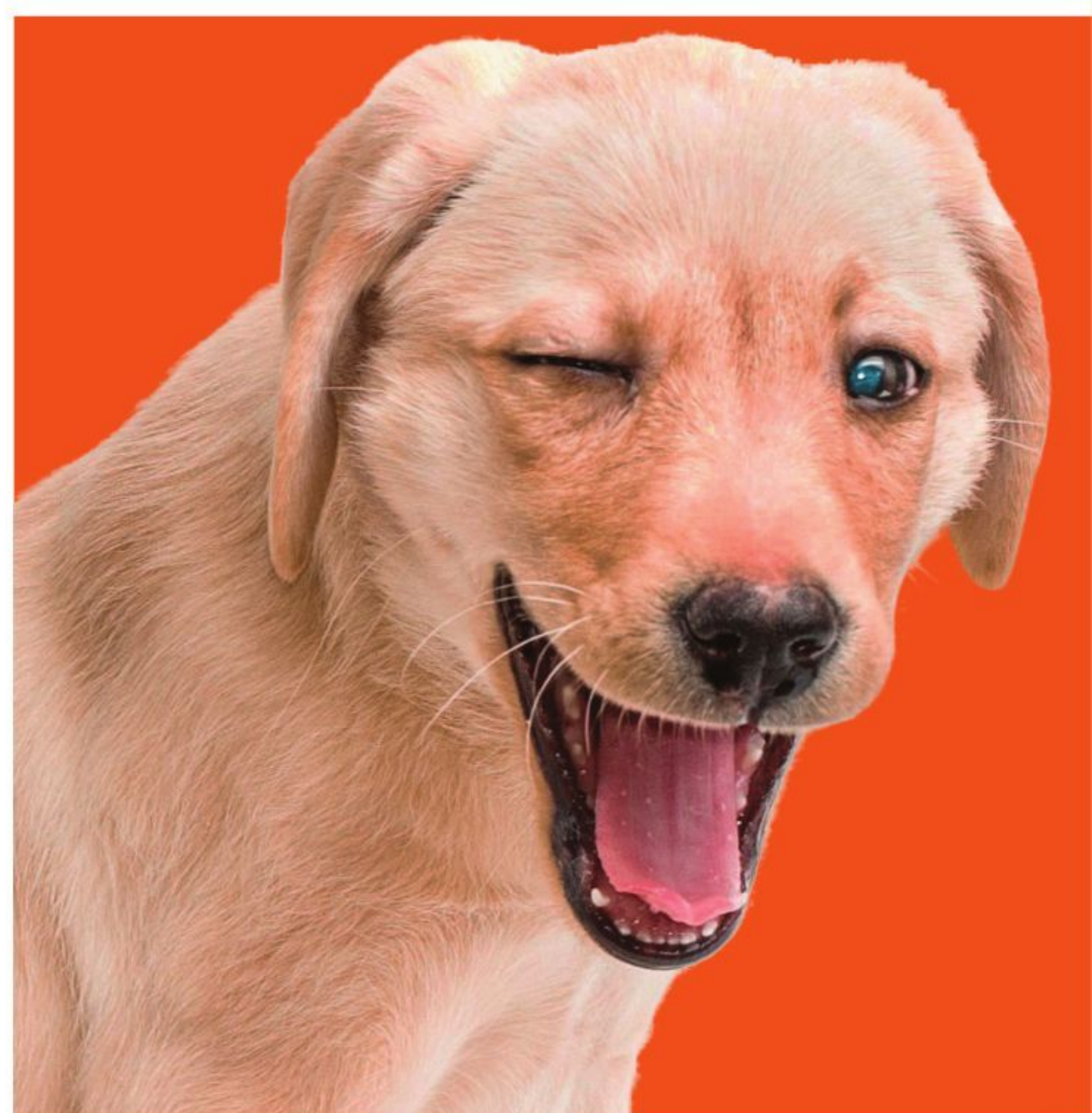
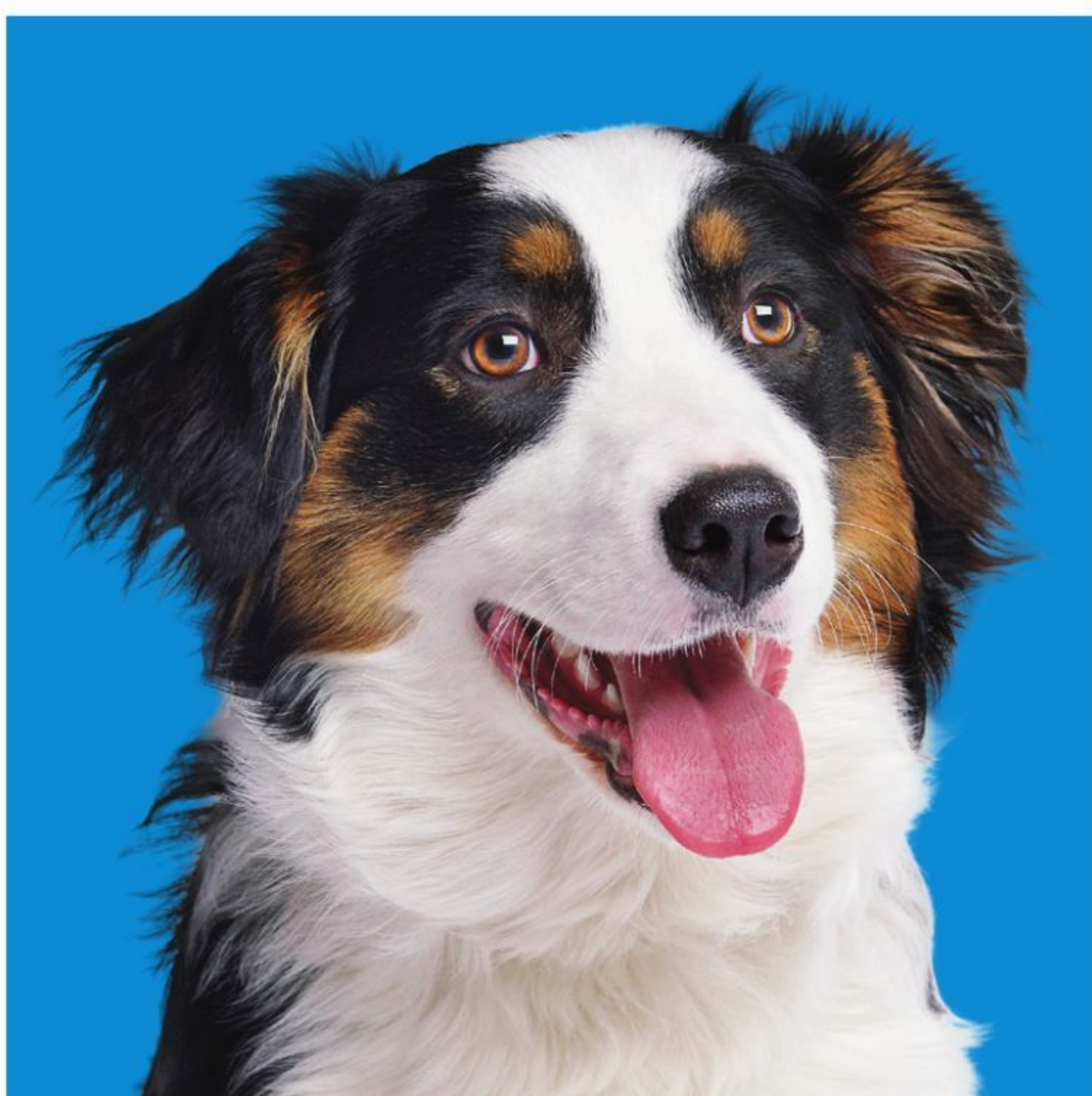
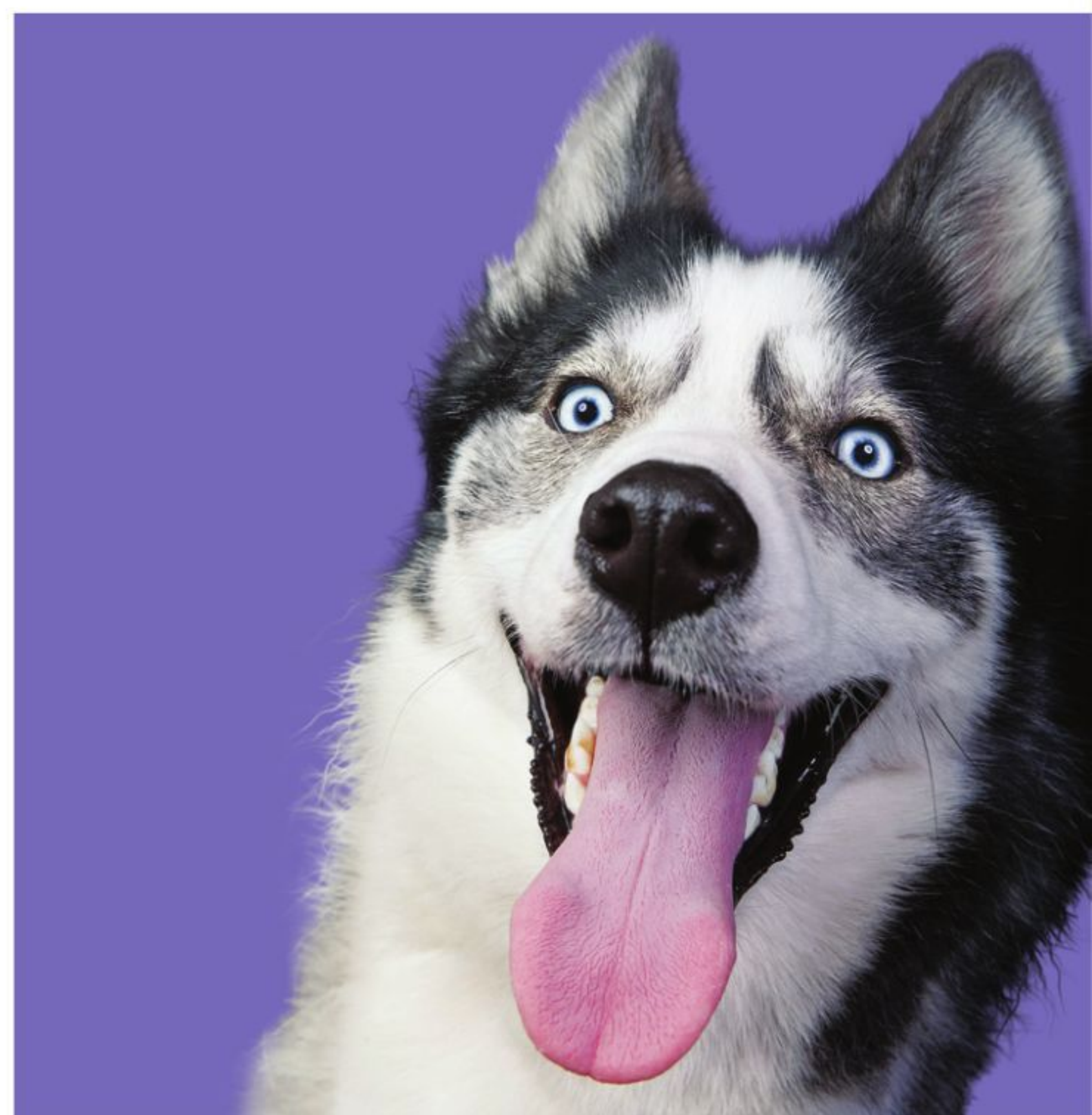
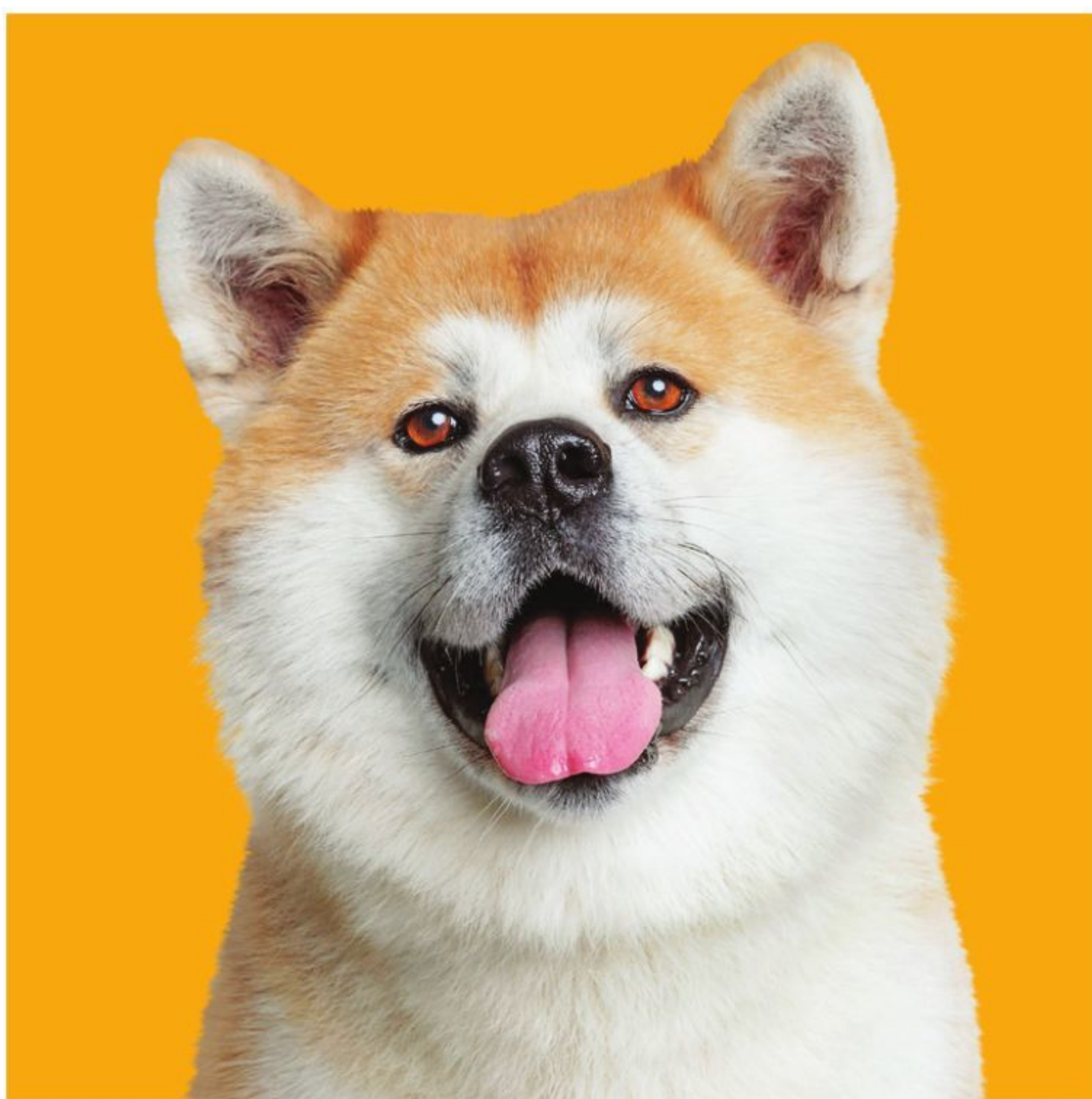
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WHAT'S SO FUNNY?

Six cool stories about animals' sense of humour...

Do you ever feel like your **dog** is **laughing** at you? Well, research suggests **maybe it is!** When they're inviting another **animal** or **person** to **play**, dogs make **huffing noises**, which scientists think is a kind of **doggy laughter**. They make the same sound when **tossing a toy** around by themselves!

Gorillas, orangutans and **rats** are among other animals that are known to laugh. But does a chihuahua chuckling mean it has a **sense of humour**? No one knows for sure, but researchers are working to answer the question. Check out these **six stories** and **decide for yourself** whether animals' antics mean they find things funny...

1

CHEEKY FOXES

Can a **1-kg ball of fluff** play a **practical joke**? Well, **fennec fox** keepers at the **Endangered Wolf Center in Missouri, USA**, think so. They've been **tricked** many times by a pair of fennec foxes called **Fezz** and **Daisy**.

The keepers wear **treat pouches** on the backs of their belts so they can give the animals snacks at the end of the day.

But the foxes **don't like waiting**.

"Daisy distracts us by doing a play bow," says **Regina Mossotti**, who works with the foxes. "Her front legs go down, her butt lifts in the air and she wags her tail super fast." Then, while the keepers are **distracted** by Daisy, Fezz swoops in and **swipes a pouch**.

"They've **fooled us** a few times," admits Regina. "Once Fezz gets away, he always turns around and looks like he's grinning – as if to say 'Ha! We got you!'" Outfoxed again.



2

SILLY SQUAWKER

Bongo Marie, an **African grey parrot**, was always picking on another parrot named **Paco**. One night, parrot owner and behaviour expert **Sally Blanchard** was cooking a roast dinner at their home in **Colorado, USA**. She was about to carve up the cooked chicken, when Bongo Marie hopped onto a worktop nearby and shrieked “**Oh no, Paco!**” before tossing her head back and **laughing!**

“That’s not Paco,” laughed Sally, showing Bongo Marie that Paco was in the next room. “Oh... no,” repeated Bongo Marie, this time sounding **disappointed** before chuckling again.

“I’m convinced she knew she was being funny,” Sally says. “It was like she was **laughing at her own joke.**”



3

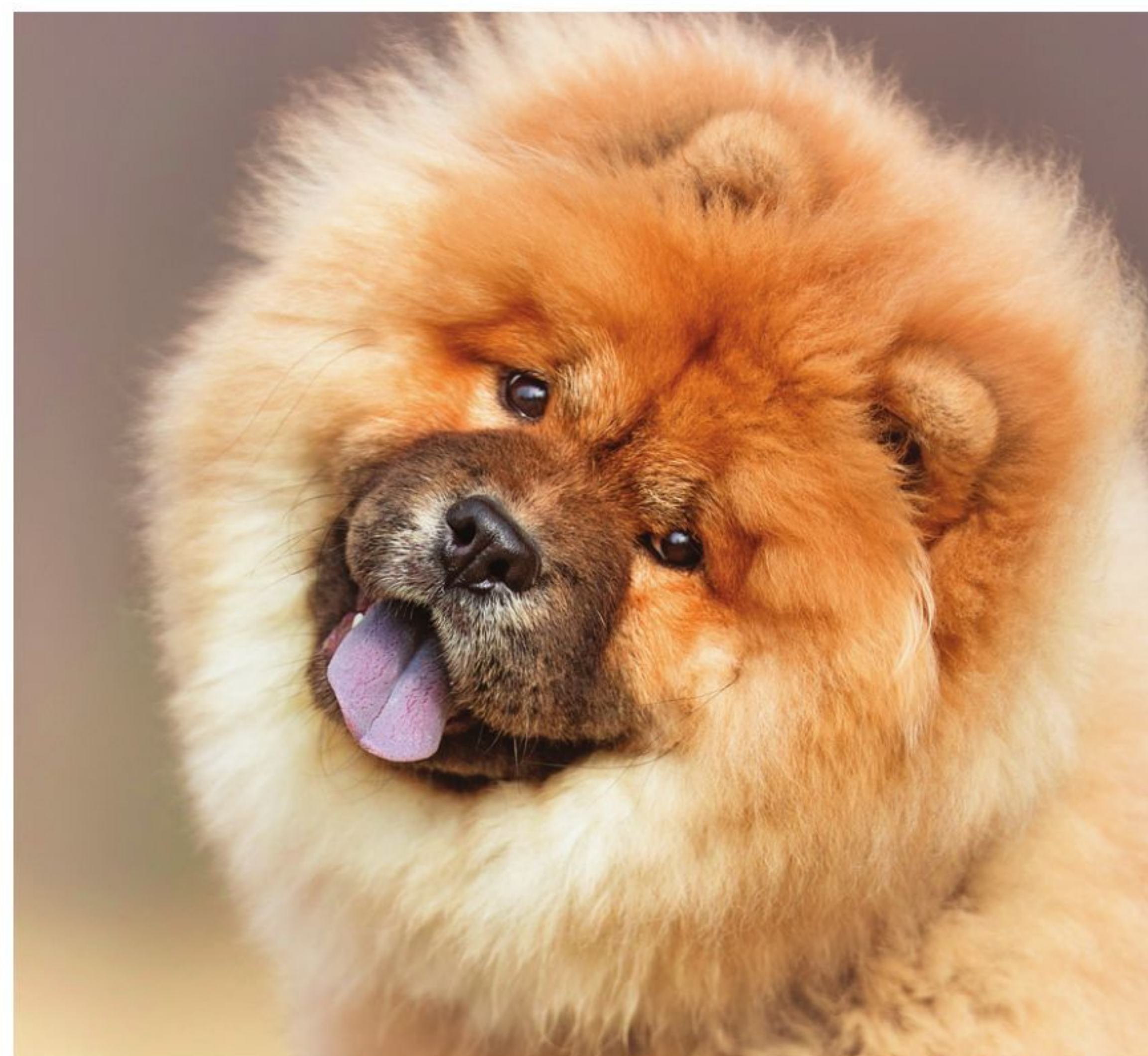
FAKE OUT

Willie B, a **gorilla** at **Atlanta Zoo** in **Georgia, USA**, was ready for **playtime**. Thinking he’d enjoy a game of **tug-of-war**, zookeepers tossed one end of a thick rope into the ape’s enclosure and handed the other end to a team of **ten men**. When the gorilla **picked up the line**, the men started to **pull**. But then Willie B **stepped on the rope**, and the keepers couldn’t get him off it, no matter how hard they tugged.

“Gorillas don’t like to make eye contact,” says **Terry Maple**, a **psychology professor** who was working at the zoo, “so Willie B was glancing away from the men.” Thinking the ape **was no longer paying attention**, the **straining humans** relaxed. Which was when Willie B **lifted his foot** and **yanked the rope**, causing the keepers to **skid** and **fall into a heap**. “He looked like he was **laughing**,” Terry says. Gorilla, one, humans, nil!

4

YOGA JOKESTER



Jean Donaldson’s yoga exercises weren’t as relaxing as she’d have liked – they were always **interrupted** by her pooch, **Buffy the chow chow!** The cheeky dog would **wait** until Jean was **holding her body in a tricky twist**, then **place rubber toys** on Jean’s shoulders and crossed legs!

“**Buffy would arrange her toys** on me every time I did yoga, and then **waggle her rear end excitedly**,” Jean explains. “And when they fell off, she would pounce, grab the fallen toys with her teeth, and **carefully place them back** on my body. She thought it was hilarious! If Buffy were a person, I think she’d have probably drawn a moustache on my photo.”



6

JUST KIDDING

Deliberately hassling a grizzly bear would be **too risky** for most animals. But not for a pack of **grey wolves** resting in a meadow in **Yellowstone National Park** in **Montana, USA**.

When a bear lumbered into the area, the **wolves formed a circle** around the animal. Two wolves **distracted the bear** from the front, while another **sneaked around behind him**.

"The third wolf darted in and **nipped the bear in the rear end**," says **wolf researcher Rick McIntyre**, who works in the park. "Then the wolves **ran away**. We think they did that **just for fun, to see if they could**."

Wolves can **control the force of their bite**, and this nip was **no more than a pinch**. Still, considering it was **several wolves against one bear**, the teasing could've lasted all day. But it didn't. Why not? The **bear sat down** – apparently he refused to be the *butt* of the joke!

5

WATER GAMES

Can **great apes** be funny? "Definitely," says **Rob Shumaker**, president of **Indianapolis Zoo** in **Indiana, USA**.

At a zoo where he used to work, Rob was **hosing down the orangutan enclosure** on a hot day when **Junior**, an adult male orangutan, started **begging for a drink**. The ape was sitting on a platform higher than Rob's hose could reach, so the scientist **flicked some drops** towards the ape. Delighted, Junior **laughed out loud**. A **long, playful water fight** followed.

When Rob ended the game, Junior **appeared to settle down**. But he was actually just **waiting**. A huge **puddle of water** had collected on his platform, and when Rob came to **say goodbye** to the orangutan, the laughing ape **swept his arm through the water, drenching** the scientist. "He totally got me!" Rob says.



GIGGLING RATS



Lots of animals enjoy a good **tummy tickle** from time to time, but none more so than **rats**. Scientists say the furry rodents love it so much that they **giggle**!

Their shrieks of delight take the form of **ultrasound squeaks**, which are **impossible for humans to hear**. But by **monitoring their sounds** using **special equipment**, researchers have been able to **measure the pleasure** that tickling gives the animals.

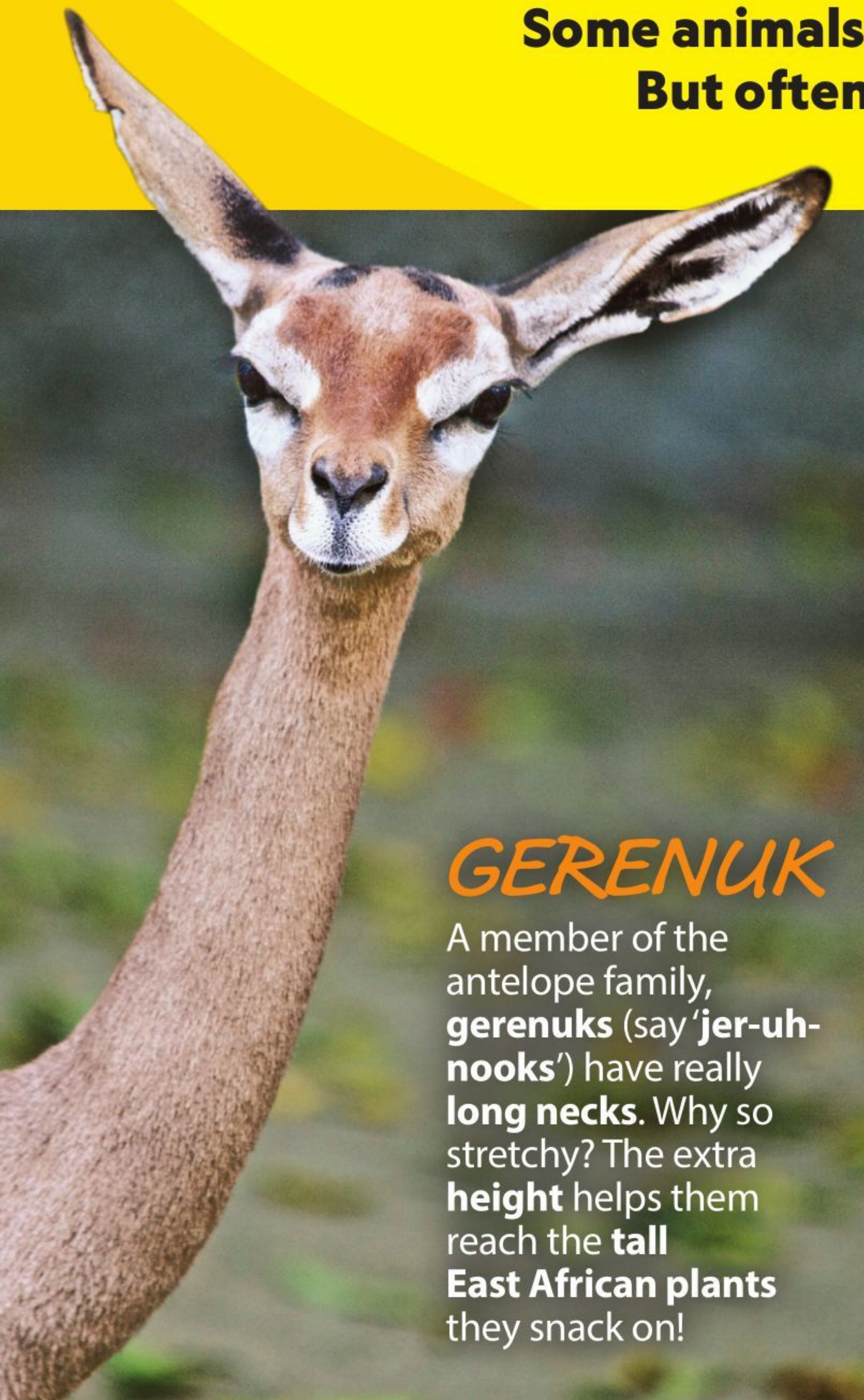
"The **similarities** between rats and **humans** are remarkable," says **Michael Brecht**, from the **Humboldt University of Berlin** in **Germany**, who found that rats also love having their **feet** played with.

"We managed to pinpoint the **part of their brain** that detects tickles" he says, adding that the rats would **chase researchers' hands** after being poked, as if they were pleading for more fun.

So why do rats love a good tickle? Michael thinks it's to do with **playfulness, social interaction** and **bonding**. "Ticklishness could be a **trick of the brain** that rewards interacting and playing," he says. We *laugh* the sound of that!

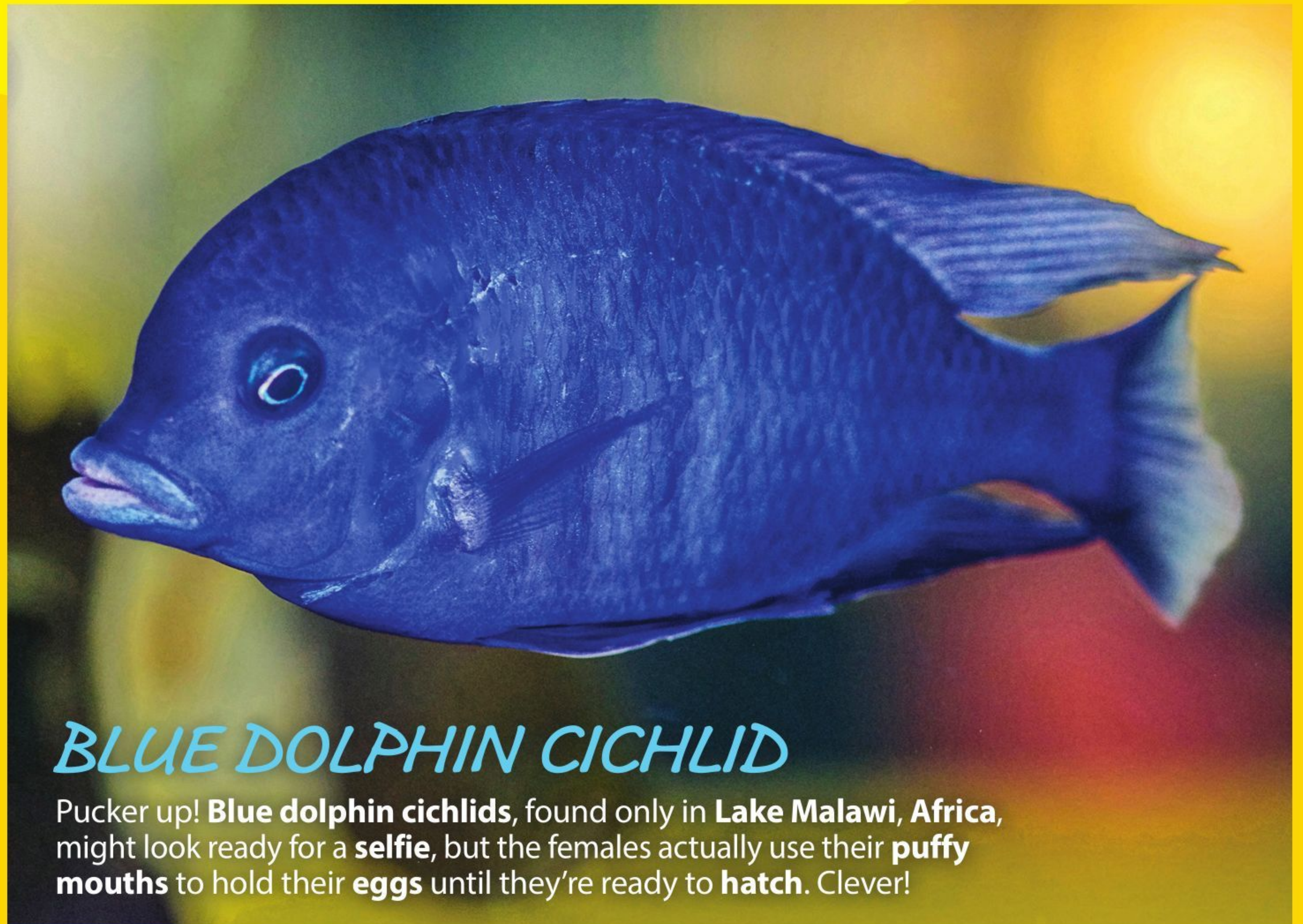
FUNNY-LOOKING CREATURE FEATURES

Some animals clown around while others, well, look like clowns!
But often these peculiar characteristics play important
roles in a critter's survival...



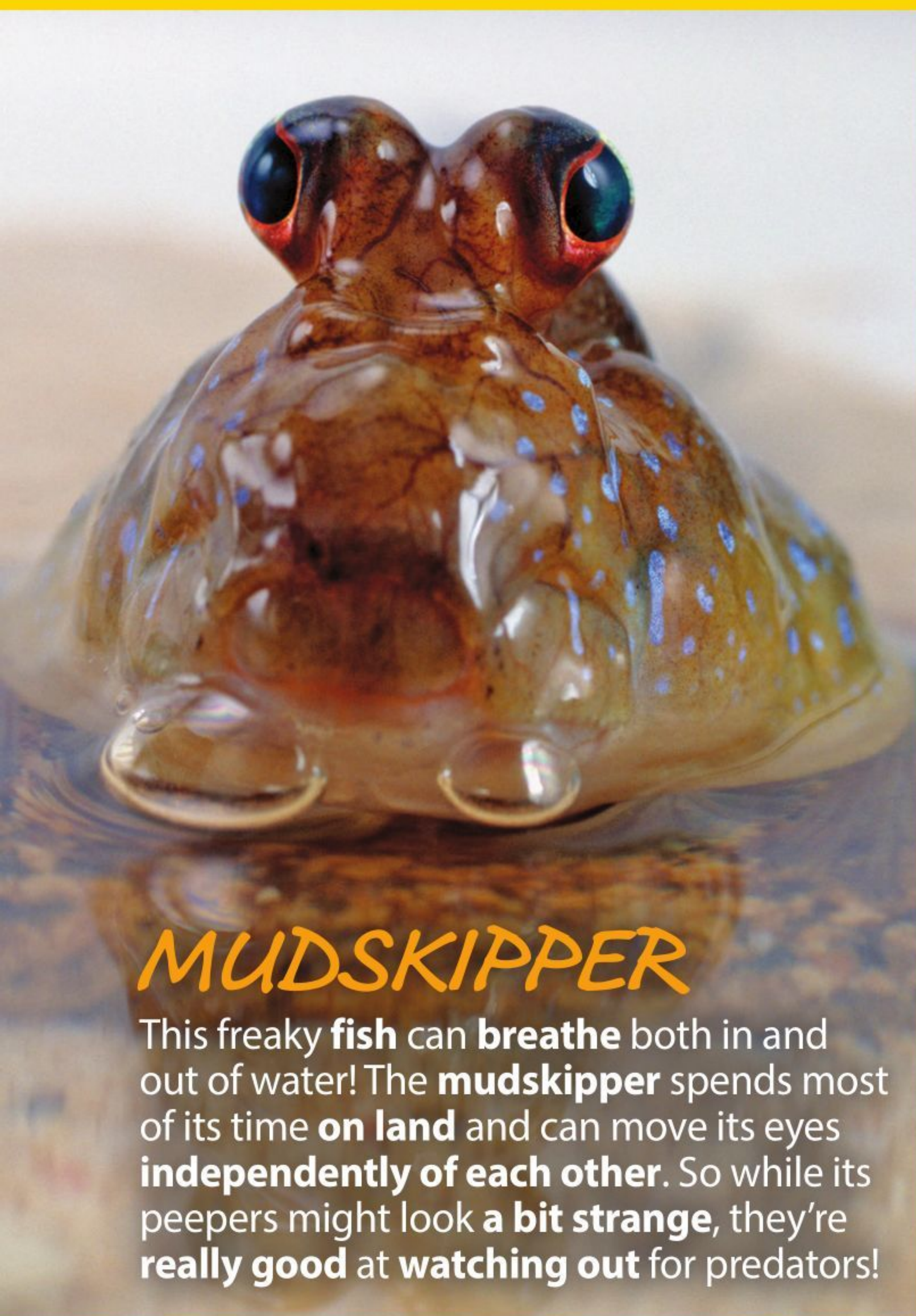
GERENUK

A member of the antelope family, **gerenuks** (say 'jer-uh-nooks') have really **long necks**. Why so stretchy? The extra **height** helps them reach the **tall East African plants** they snack on!



BLUE DOLPHIN CICHLID

Pucker up! **Blue dolphin cichlids**, found only in **Lake Malawi, Africa**, might look ready for a **selfie**, but the females actually use their **puffy mouths** to hold their **eggs** until they're ready to **hatch**. Clever!



MUDSKIPPER

This freaky **fish** can **breathe** both in and out of water! The **mudskipper** spends most of its time **on land** and can move its eyes **independently of each other**. So while its peepers might look a **bit strange**, they're **really good** at **watching out** for predators!



STAR-NOSED MOLE

No, this mole hasn't **swapped its schnoz** with an **octopus**! The fuzzy American **carnivore** is almost totally blind and hunts by **pushing** its **star-shaped nose** through the soil, **detecting** the **electrical pulses** of its prey!



FENNEC FOX

Measuring up to **half the size** of its **body**, a **fennec fox's** huge **ears** are super **sensitive** and help it hear tasty **rodents** and **reptiles** moving under the **Sahara Desert** sand. Yum!



JERBOA

With its **tiny body** and **long hind legs** and **tail**, the **jerboa** looks more like a **Pokémon** than a **rodent**! But when **predators** are near, its long legs and feet let it **bounce away**. The jerboa's tail helps it balance as it **springs** through its **desert home** at up to **24kmph**!

SAIGA

This antelope's **large bulbous nose** is **perfectly designed** for life in the **cold**. Its spectacular sniffer **warms the air**, gives it a brilliant **sense of smell** and helps it **communicate** with **loud nasal roars** on the vast plains of **Russia** and **Mongolia** where it lives.



BONKERS BEAST

Can you work out which three real creatures this **animal mash-up** is made from? Answer on page 55.



YETI CRAB

Looking like a crazy **crustacean** version of the Abominable Snowman, the **yeti crab** lives near **hydrothermal vents** – areas where **hot water** gushes up from the **ocean floor**. The crabs wave their **hairy arms** near the vents to capture **scrummy bacteria** to scoff!



ANIMAL LOL

Get a quick giggle with
these critter-themed jokes,
tongue twisters and riddles...

TONGUE TWISTER

Say this fast
three times:



Percy
seeks
special
sea
species.

Q

How do animals in the Arctic
travel quickly on the ice?



A

On polar skates

KNOCK KNOCK!

Who's there?
Water.
Water who?
Water you doing?
Just open
the door!



KNOCK KNOCK!

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



Q

What do you get if
you cross a dog
with a TV AERIAL?

A

A golden receiver!



TONGUE TWISTER

Say this fast
three times:

Five frantic
frogs fled
from fifty
fierce fishes.



Q

What do cows read
each morning?

A

Moo-spapers!



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Meet Mischief!



Mischief is a huge male dolphin who really lives up to his name. He's always ready for a game of chase. He's often seen 'babysitting' young calves, which is unusual for male dolphins!

Meet Rainbow!



Rainbow is a friendly, female dolphin and a proud mum to Prism and Indigo. She's an expert hunter and taught her sons all her tricks to catch the huge salmon in the Moray Firth.

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Until
5 January
2020

Check out our six favourite things to do at
Tate Modern's top new art exhibition in London!



1 DANCE IN COLOUR!

Cast crazy **colourful shadows** on the wall
in *Your uncertain shadow (colour) 2010*.
We challenge you not to dance!

By altering
lighting and colours,
and **restricting our
senses**, Olafur's
art changes the
way we **feel**!

Olafur recreates
natural phenomena
such as **waterfalls**,
fog, **waves** and
rainbows!

2 PLAY WITH TOYS!

Olafur wants you
to **interact** with his
artwork and even
make your own!
Join hundreds of
other visitors to
create a **constantly
evolving 3-D
structure** out
of **Zometool**
construction sets.

*The structural evolution
project 2001*



Big Bang Fountain 2014



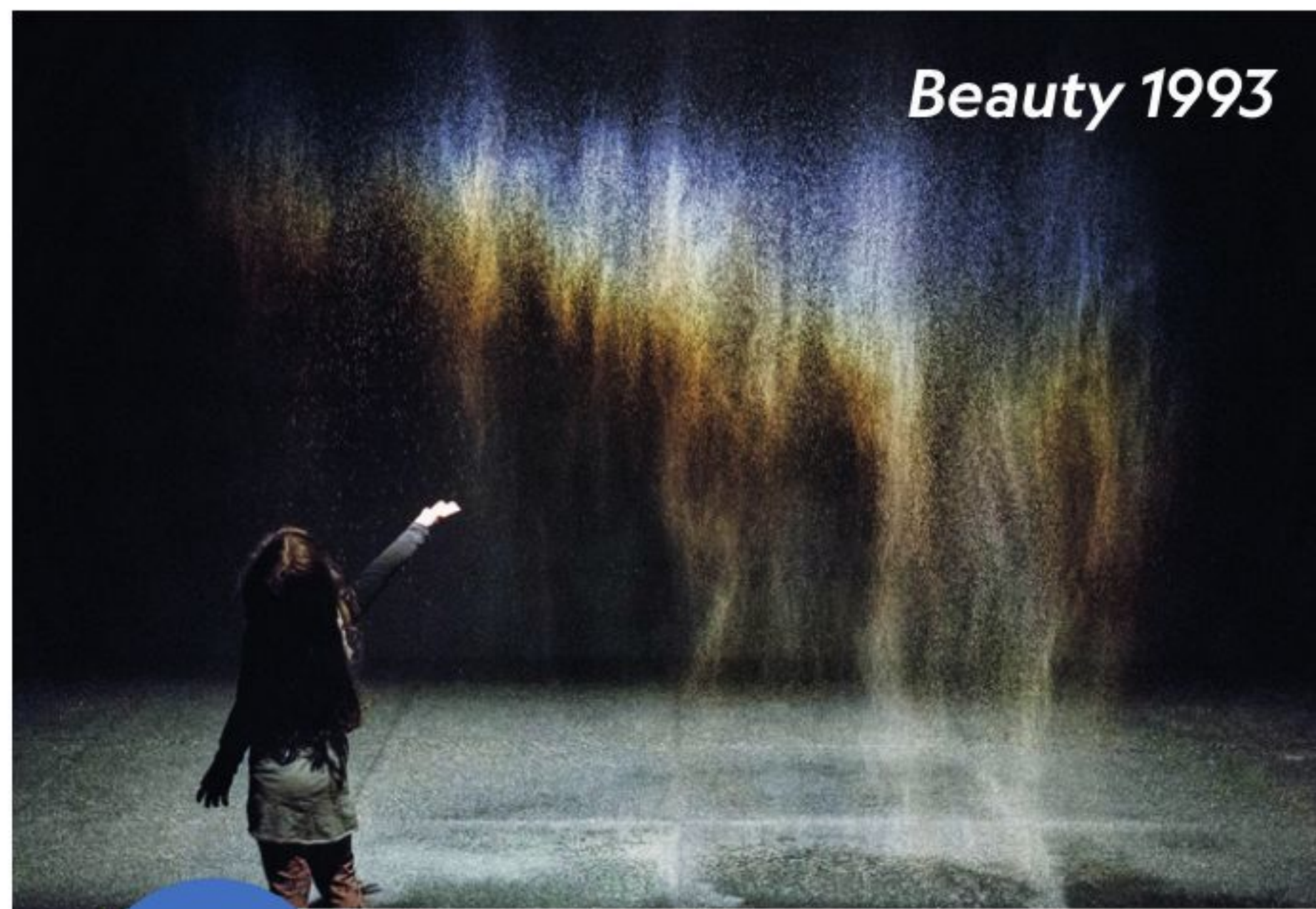
3 SEE SCIENCE SCULPTURES!

A **strobe light** transforms a bubbling **water fountain** into momentary **sculptures** inside a pitch black room!



4 EAT ART!

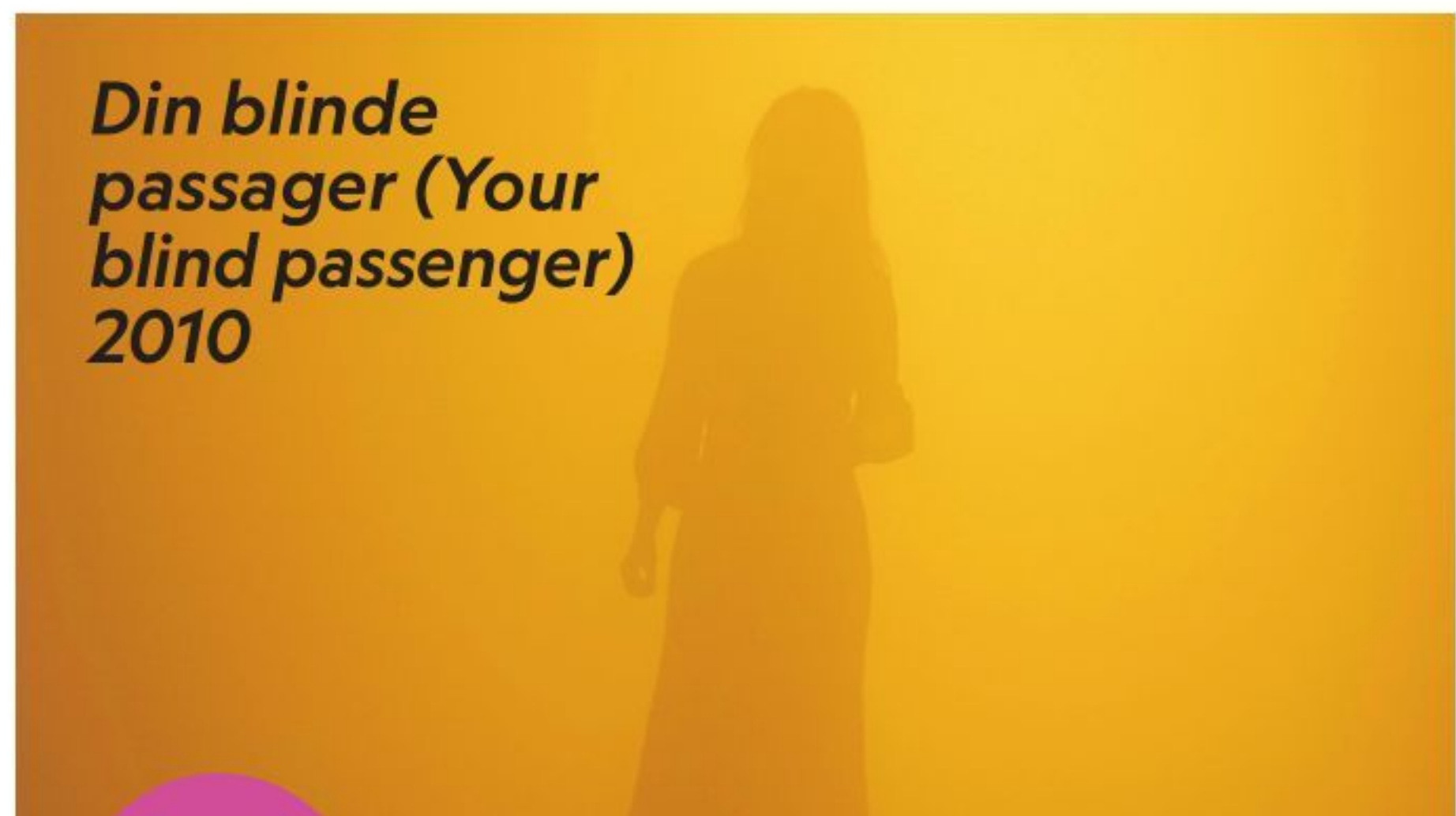
Olafur hasn't just created an awesome exhibition. He's also designed a **menu**! Visitors can try food based on the **organic, vegetarian** and **locally sourced meals** served in his **Berlin studio**. Yum!



Beauty 1993

5 TOUCH A RAINBOW!

By shining **white light** on a **fine spray of water** Olafur has created a **shimmering rainbow**. And if you stand in just the right spot, you'll see **stripes of colour** and **feel the mist**!



Din blinde passager (Your blind passenger) 2010

6 JOURNEY THROUGH A CLOUD!

Walk through a **fog-filled tunnel**, where your **vision is restricted** to just an arm's length and the air tastes sweet! Will you be **nervous, excited** or something else?!

NEW!

THE GLACIER SERIES!

In 1999, Olafur travelled to **Iceland** to photograph its **glaciers**. This summer, **20 years** after the original series of photos were taken, the artist re-visited and photographed the very same glaciers in Iceland. The results were dramatic...



Rótarjökull glacier, 1999



Rótarjökull glacier, 2019



Tungnakvísarjökull glacier, 1999



Tungnakvísarjökull glacier, 2019

These new **pictures** will be on display at **London's Tate Modern** from the end of **November**, demonstrating the effects of **climate change** on the **landscape**.

POSTER COMP WINNER!

Back in the summer, we asked you lot to **design an exhibition poster**, inspired by the themes in Olafur's work. We had loads of incredible entries, but the winner was **six-year-old Charlotte Xin Yi Waterman**, with her ambitious design featuring **tomato plant leaves** and **recycled card**!

Judge **Mark Godfrey**, Tate's senior curator,* was impressed that Charlotte used some of the same **materials** as Olafur, including **mirrors, recycled materials** and **LEGO**. "Charlotte's illustrations of the **Sun** and **natural environment** were relevant to the themes in Olafur's art," he said.

*A curator is the person who helps organise and take care of an exhibition.

I'm super happy to have won!

Charlotte's entry really impressed me!

Head to **tate.org.uk/eliasson** to book tickets and discover more!

THE PRIZE

A TRIP TO BERLIN!

Charlotte and her family won a trip to **Berlin** in **Germany** to visit Olafur's studio. They had a **tour of his workplace** and even ate some of his **yummy food**. Charlotte's **poster** (above) is now on display in the studio. How cool is that?!

Ticket Prices: Under 12s go free.
£5 for 12-16s. £5 for 16-25 year olds.
Adult Price: £18 (£17 concessions)

EPIC SCIENCE FAILS

Nat Geo explorers spill their most embarrassing moments...



Even **scientists** goof up sometimes! These **Nat Geo explorers** share some of their wildest slip-ups and hardest fails.

SNEAKY MONKEYS

THE SCIENTIST:

Susan Perry

COOL JOB:

Anthropologist

THE LOCATION:

Costa Rica,
Central America

"I needed to get **hair samples** from some wild **capuchin monkeys** without getting too close. I thought I had a great idea – put **transparent double-sided sticky tape** on the shells of **eggs**, one of their favourite **treats**, so their **hair would stick to the tape** when they cracked open the shells.

"My team and I put the sticky eggs on the forest floor and waited. The **21 monkeys** were excited when they first saw the hard-boiled eggs, but when they got closer, they realised **something wasn't right**. They made 'threat faces' at the eggs as they gently poked them and were careful to not touch the tape.

"Then they slowly **cracked** the eggs, **picked off the shells** and **ate each one** – **without** ever touching the tape! The monkeys had completely outsmarted me, so I had to find another way to gather the info I needed – **picking up monkey poop**."



These capuchin monkeys are too smart for Susan!



MANATEE MADNESS

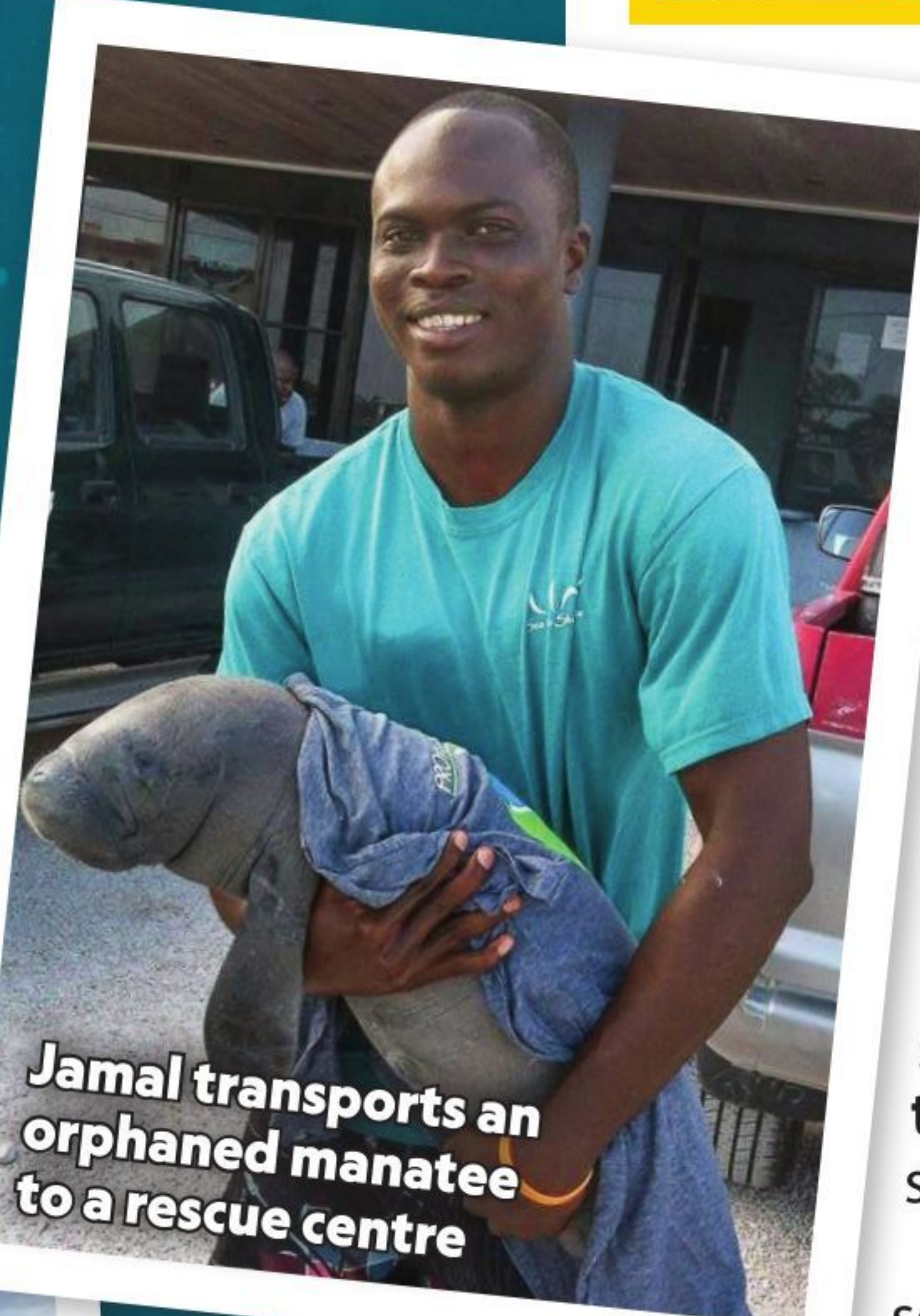
THE SCIENTIST:

Jamal Galves

COOL JOB: Conservation biologist and Nat Geo Photo Ark EDGE Fellow

THE LOCATION:

Belize, Central America



Jamal transports an orphaned manatee to a rescue centre

"One day we brought a **wild manatee** aboard our boat to **study its health**. The **360-kg** animal started to **thrash around**, making the checkup really difficult.

"Everyone else **jumped into the water** to avoid getting thwacked by the powerful manatee, but I **hung on** to the edge of the boat. I **laughed** at everyone else because they were soaking wet. The feisty manatee seemed to **calm down** enough for me to take the measurements, but then it began squirming again, **knocking me into the water** along with my only dry shirt, hat and sunglasses.

"No matter how well I plan, somehow the manatees never seem to cooperate!"



Using satellite technology, Jamal tracks a tagged manatee

SEASICK SCUBA

THE SCIENTIST:

David Gruber

COOL JOB:

Marine biologist

THE LOCATION: The Bahamas, an island country in the Atlantic Ocean



colour). But on that day, **4-m-high rolling waves** were pushing our boat up and down... and I was feeling

really **seasick**.

"I **couldn't get my scuba gear on**, and eventually my fellow scientists got tired of waiting. So they **threw me into the water** and tossed in my gear and tank right behind me! I quickly put my **breathing regulator** in my

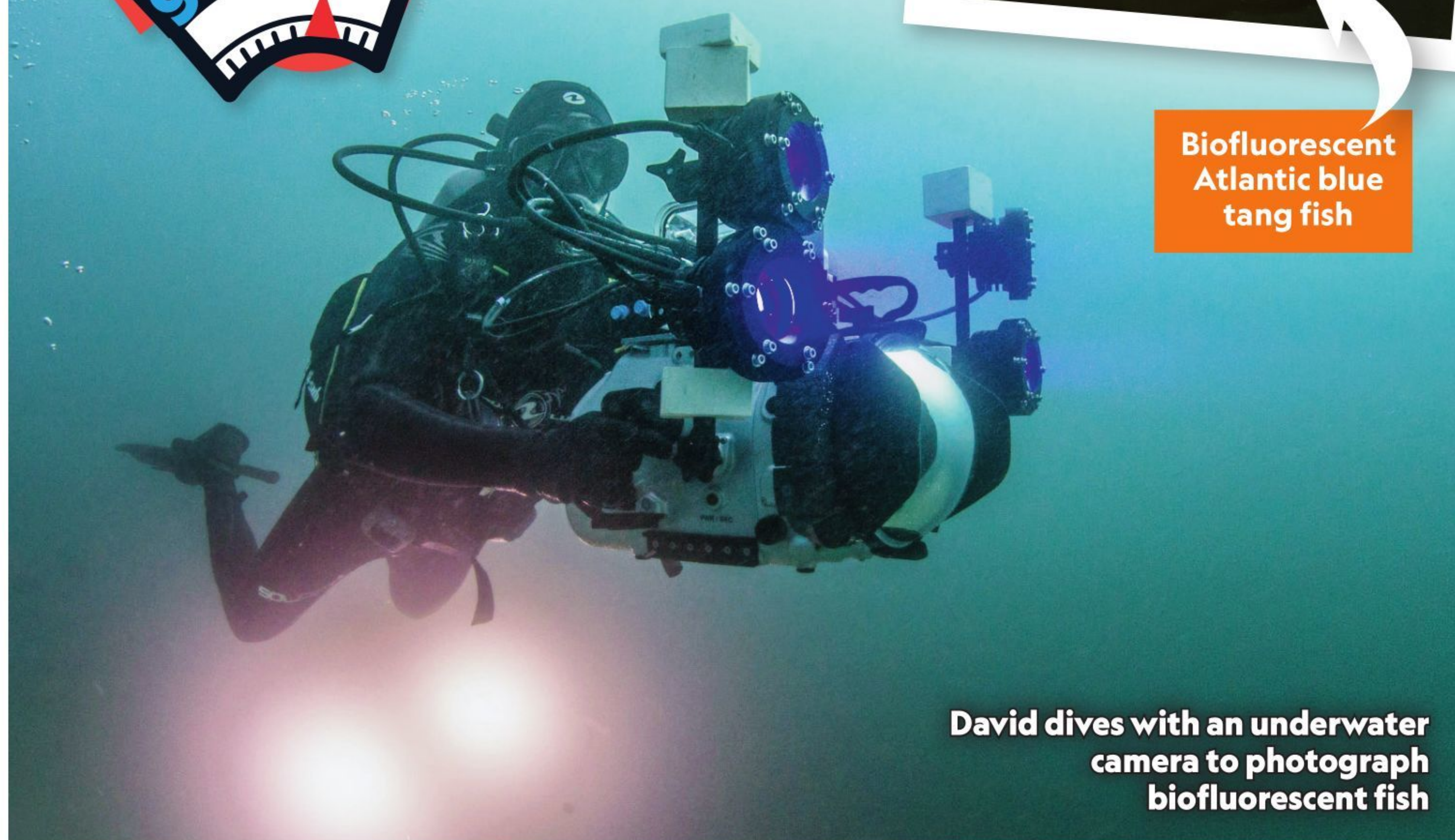
mouth, and I slipped on my **mask** and **vest** as I sunk down. Thankfully, once I was beneath the waves, I started to feel normal again.

"I'm glad my work pals forced me into action – that day I made a huge discovery... **Atlantic blue tang fish** can biofluoresce!"

"We were on a boat about to **dive** in search of animals that **biofluoresce** (meaning their **skin absorbs natural light** and **reflects** it as another



Biofluorescent Atlantic blue tang fish



David dives with an underwater camera to photograph biofluorescent fish



WILD DO-OVER

THE SCIENTIST:

Ricardo Moreno

COOL JOB: Wildlife biologist

THE LOCATION:

Panama, Central America



"We wanted to put **radio collars** on wild **ocelots** to learn more about their behaviour. So we placed **bait** in special traps, hoping the food would tempt them to walk in.

"We caught one, but as I excitedly moved to **sedate** the cat, it **pushed open the trap door, knocked me over, and ran off**. I tried to chase it, but it was already gone – I'd never catch a sprinting ocelot.

"Feeling defeated, we checked on our other traps, even though it's **extremely rare** to capture two ocelots in one day. But luckily, in one of the last traps was another ocelot! We knew we had to learn from my **overeager mistake**. This time we **calmly** approached the trap from behind and were able to sedate the cat and put the collar around its neck. Phew!"

RAT TRAP

THE SCIENTIST:

Danielle N. Lee

COOL JOB: Biologist

THE LOCATION:

Tanzania, Africa



Danielle's research helps scientists train rats like this one sniff out landmines



"**Giant African pouched rats** are special – they can **save lives** by being trained to **sniff out buried explosives** and **disease-causing bacteria**. One day my team and I were studying these '**pouchies**,' but I was tired and couldn't find my **protective gloves**. I should have known trouble was coming.

"While I stretched the measuring tape between a rat's tail and its nose, the pouchie sunk its **razor-sharp teeth** into my thumb. Usually they bite quickly then run away, but this female wouldn't let go. **Three** other people had to help **open her mouth** and get her off me.

"I learned two important lessons that day – always wear **safety equipment**, and never do science when you're **tired**!"

Danielle studies a young giant African pouched rat.



Ricardo (right) and his teammate place a radio collar on an ocelot in Panama

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SAVING PETS CHANGING LIVES



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 NATIONAL
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KIDS

SCREAMING
HAIRY ARMADILLO





 NATIONAL
GEOGRAPHIC
KIDS

**BARBARY
MACAQUE**



**Bet You
Didn't
Know!**

6 priceless facts about treasure

1

The Queen has a crown studded with more than 3,000 precious gems.

2

Most pirates never buried their loot.

3

A gold nugget found in Victoria, Australia, weighed a whopping 78kg – about as much as 11 bowling balls.

4

Legend says that if you lose a tooth in Mexico, *el ratón* (the mouse) will leave a treasure under your pillow.

5

A pearl found inside a giant clam weighed 34kg – that's heavier than a ten-year-old child.

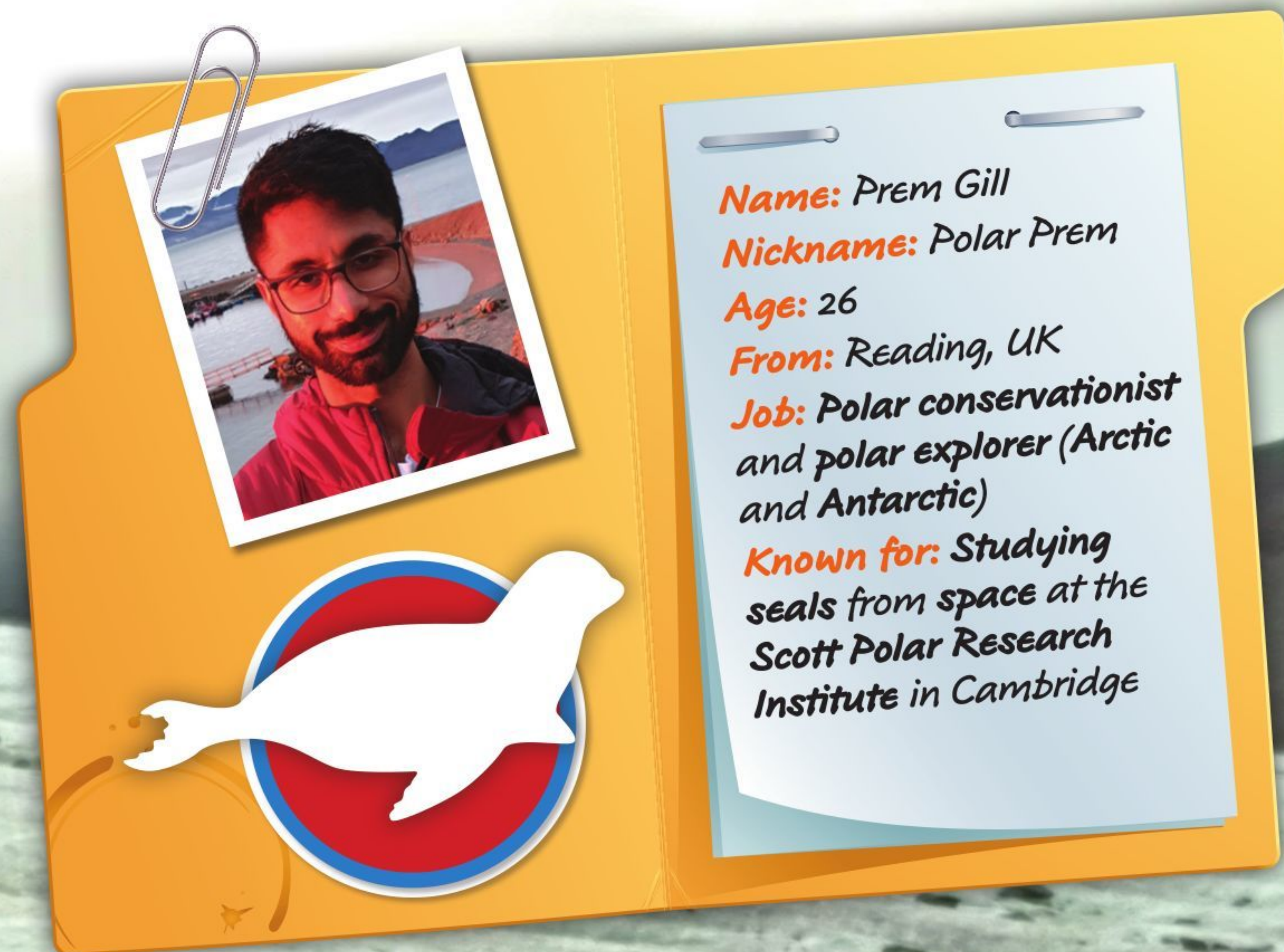
6

A cornflake shaped like the US state of Illinois sold for £675.



THE BIG INTERVIEW

NG KiDS chats to polar explorer Prem Gill about his seals from space project...



Name: Prem Gill
Nickname: Polar Prem
Age: 26
From: Reading, UK
Job: Polar conservationist and polar explorer (Arctic and Antarctic)
Known for: Studying seals from space at the Scott Polar Research Institute in Cambridge

I want to change the image of Antarctic Explorers!

Prem's research featured on BBC's *Earth from Space*! Check it out on the iPlayer!

ANTARCTIC ICE SEALS

Meet the four seals that live on Antarctic sea ice...



CRABEATER SEALS

These seals spend their entire lives on the **pack ice** surrounding Antarctica. Despite their name they eat **krill**, not crabs!



LEOPARD SEALS

Also found on **pack ice**, leopard seals eat almost anything, from **squid** to **penguins**, and other **seal pups**. Yikes!



WEDDELL SEALS

Living near **breathing holes** and **cracks** in '**fast ice**' (which is still attached to land), Weddells use their **sharp teeth** to keep the holes open.



ROSS SEAL

These rare seals prefer the **thickest pack ice**, and have **needle-like teeth** for catching slippery fish under the ice.

Hi Prem! You're a polar conservationist, and your big project is studying seals – from space! How does that work?

Are you an astronaut, too?!

Haha, no! I use **satellite cameras** that are up in **space**. I point them at **sea ice in Antarctica**, and then **look at the images, counting all the seals** that live there. And I might count some **penguins**, too! In case you don't know, **penguin poo** can **stain ice** a lovely **pink** and is **visible from space**!

Wow, are the pictures taken from satellites really that clear?

The **resolution** is so **high** that I can make out **baby seals**, and I can even tell when a **seal mum** has **just given birth** by looking out for **specks of blood** on the ice. But to make extra sure I'm not also **counting rocks** I check for the seals' **distinctive banana shape**! They hang out in certain groups and locations which also makes them easier to find.

Why do you have to study these mammals from space?

The Antarctic is very **remote**, and because of all the **broken up pack ice** it's **dangerous** to get to by **boat**. In **winter**, the sea ice is **double the size of Europe** so you can't just **fly on a plane** to count the seals either. The space images capture the **whole of the region**!

What are you hoping to learn?

We want to find out **how many seals live there** and the **type of sea ice** they like to live on. By finding out **where they're giving birth**, we'll know which areas of the sea ice to **protect**. We're investigating how **climate change** may affect their **habitats** and **behaviour**, too.

Do you get up close to seals as well as looking at them from space?

Yes! I've been working with a **seal rescue centre** in **Norfolk** so I can get used to being around seals before visiting Antarctica. They look after **pups** that have been **abandoned** or **orphaned**, or that

It's a hard life being a seal!



Warming up an orphaned seal pup!

“Seals make the weirdest noises!”

may be **ill**. Some have been **attacked by dogs** that have been let loose on beaches. We give them all names – at the moment they're named after **mythological characters** like **Centaur** and **Minotaur** – and we feed them with a special **soup** made from **mackerel**.

Do the seals like people?

They're **sociable** animals and really want **affection**, **bumping** you with their **noses** when they want food. Sadly, we **can't** **cuddle them** or spend too much time

with them because we have to make sure they **don't get reliant on humans** and can go back to the wild.

What do you love most about seals?

As well as being **heart-meltingly cute**, they make

the most **incredible noises**! They sound like **special effects** from a **sci-fi show**! I gave a **lecture** where I asked the audience to try and tell the **difference** between **seal noises** and **deep space recordings**, and it's **really hard**!

Alongside counting seals from space, I'm working on a **song** made of **seal sound samples** – I'm hoping I can get famous **grime musician Stormzy** involved!

Cool! You've just come back from a trip to the North Pole! What was it like?

Very **surreal**! I was there during the summer when there was **24-hour daylight**, and the town where we were staying had

more **polar bears** than **people**. But even though it's remote, there's a really **diverse population** because **scientists from all over the world** study there!

What were you doing there?

I was on a **research trip** to **measure a glacier**, a huge mass of slowly moving ice. It was shocking to see how much the glacier had **shrunk** in the past **ten years**. People sometimes think of climate change as a **gradual** thing, but it was very **dramatic**.

Did you see any polar bears?

No, but I was walking along the beach one day, and a little **baby seal** started **following me**! And the weirdest thing was, it was the **same species** I look after in the seal hospital in **Norfolk**! I was like, 'What are you doing here?!' Turns out there's a sub population of **harbour seals** living in the **Arctic Ocean**!

How weird! What do your parents think about what you do?

Well, I'm **Sikh**, and my mum and dad are originally from a rural area in **North Punjab, India**. It's very very rare for someone of my background to become a **polar explorer** (I'm basically a **brown unicorn**!) so they're very **proud** but they're also **baffled** by it. I've heard my mum describe my **research** as a **school trip** in the **North Pole** to find **polar bears**! Haha, cute! What do you like most about your job?

It combines my **love of seals, technology, and maps**. I'm basically a massive **geek**! There's also something very **satisfying** about being in my office in **Cambridge**, witnessing a seal birth on the **other side of the world**, and knowing I'm the **only human in history** who will ever lay eyes upon this beautiful moment in time!

Wow! What's next for you?

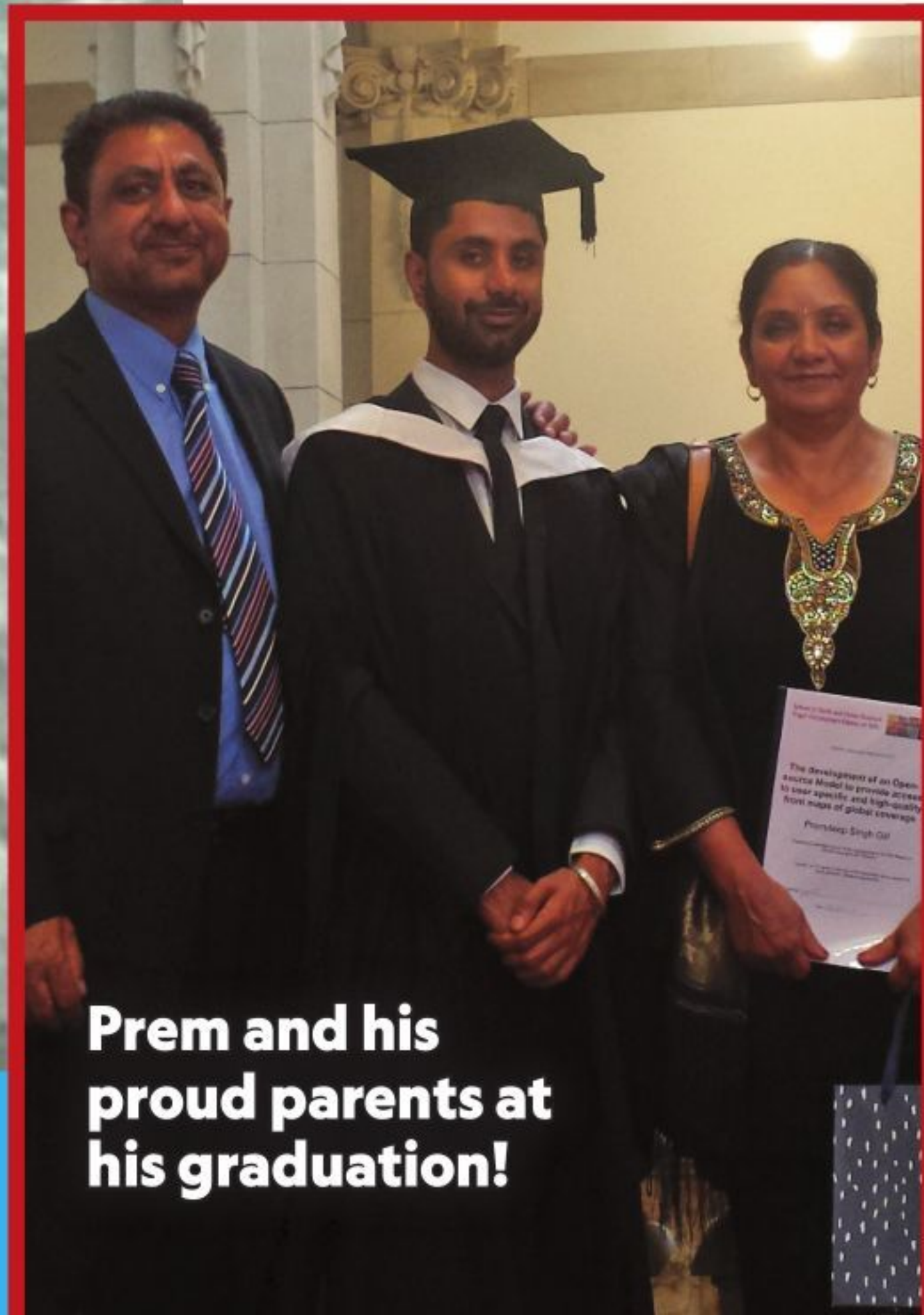
Going to the **Antarctic**! I need to take some footage using **drones** fitted with **heat cameras** so we can be **100% certain** we're looking at **seals** and not just rocks! And because I'll be surrounded by icy water I'll need to **practise my swimming** – I've only just learnt!

Good luck, Prem!

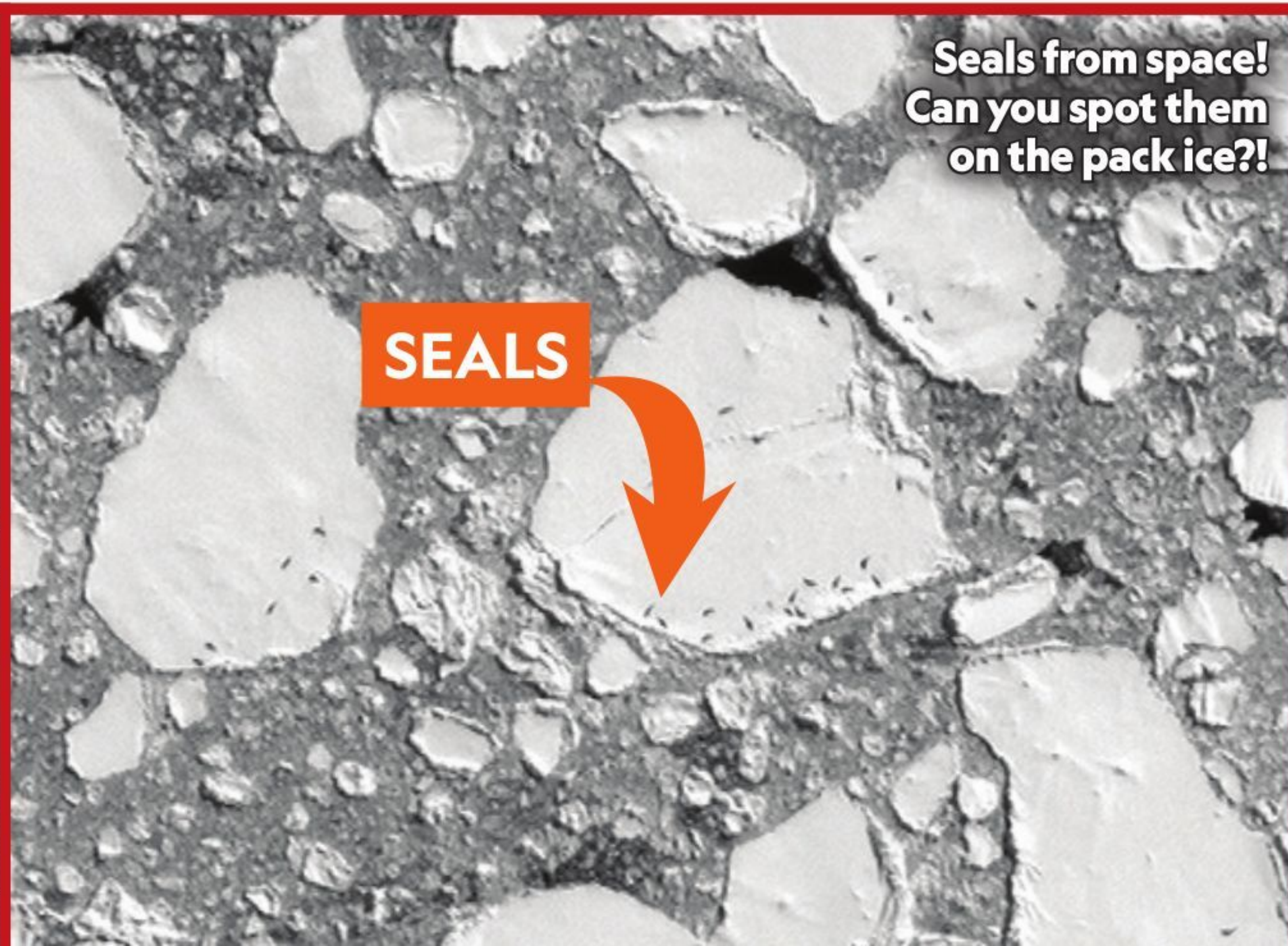
Head online to polarprem.com to hear some seal sounds!

Seals from space! Can you spot them on the pack ice?!

SEALS



Prem and his proud parents at his graduation!

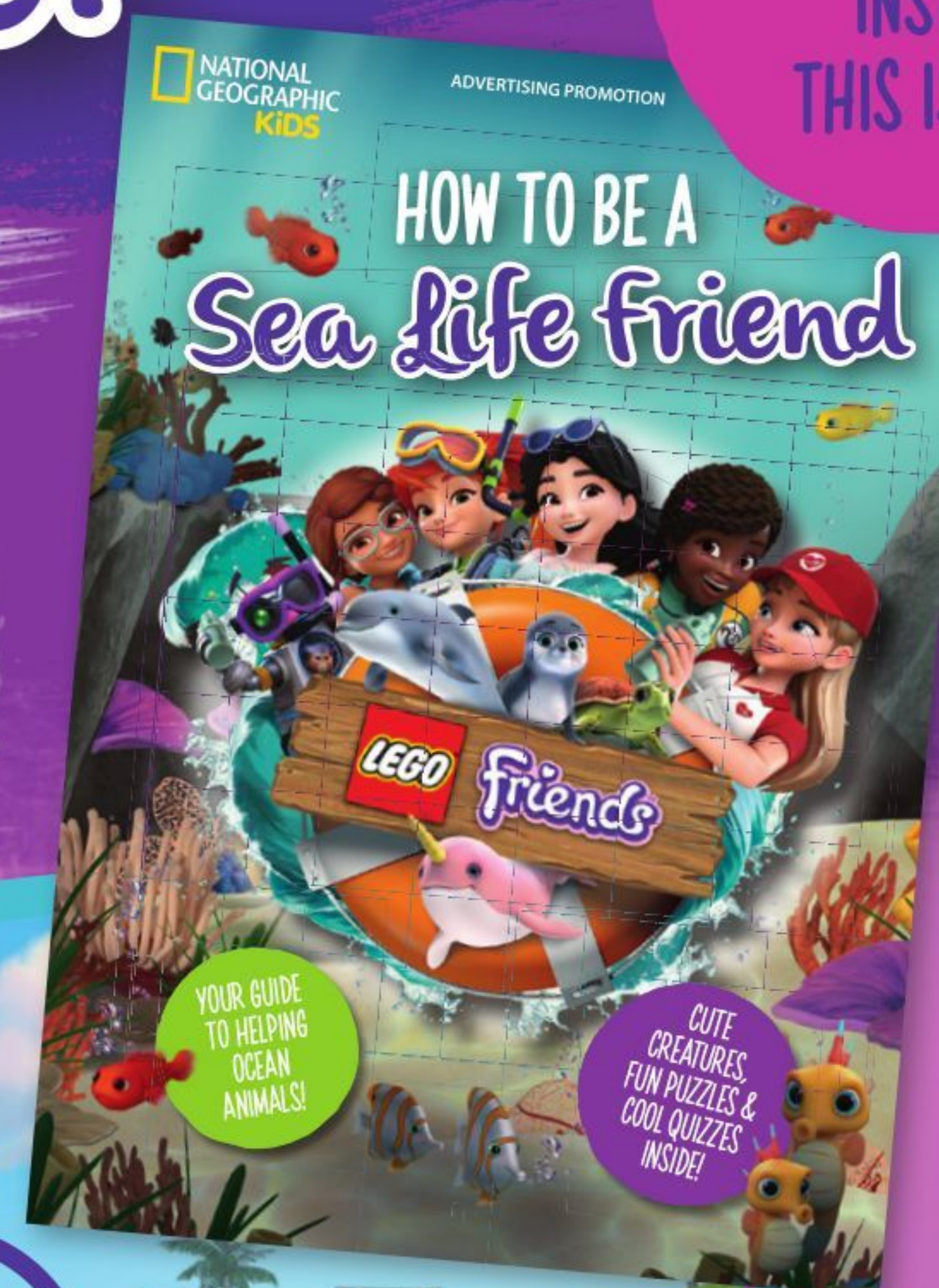


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LEGO® Friends Sea Life!

Budding marine biologists, animal lovers and ocean explorers will love playing creature-saving scenarios with the new LEGO Friends Sea Life range!

GET YOUR
FREE GUIDE
INSIDE
THIS ISSUE!



Rescue Mission Boat - 41381

FULLY
EQUIPPED SCIENCE
LAB TO TEST
SPECIMENS!

SWIVELLING
CRANE WITH A
STRETCHER FOR
TRANSPORTING SICK
ANIMALS!

ADD WATER
TO THE REACTIVE
MAP TO REVEAL WHERE
THE TREASURE IS
HIDDEN!

The largest
coral reef in
the world is
Australia's
Great Barrier
Reef.

Narwhals are
super sociable.
These 'underwater
unicorns' swim in
groups of around
ten, but may
gather in their
hundreds!

In
real life,
narwhals are
speckled grey,
not pink!

Turtle Rescue Mission - 41376

Turtles
can hold
their breath
for up to
five hours.

NURSE
BABY TURTLES BACK
TO STRENGTH IN THE
CLINIC!

STAY SAFE
IN THE SEA WITH
THE LIFE VEST AND
SAFETY RING!



Lighthouse Rescue Center - 41380

Sea lions can doze in the water and on land. In the sea, they sleep at the surface with just their head exposed.

KEEP SHIPS SAFE FROM THE SHORE WITH THE FLASHING LIGHT BRICK!

PUSH A BUTTON TO FREE THE TRAPPED SEA LION!

A CLEVER HINGED POOL SWINGS THROUGH 180 DEGREES TO BRING SEA LIONS INTO THE CLINIC!

CHECK FOR BROKEN BONES WITH THE X-RAY!

Dolphin Rescue Mission - 41378

The world's smallest dolphin is the vaquita, which in Spanish means 'little cow'. Sadly, it's also the most endangered.

THE SHIP'S GRABBING ARM HELPS FREE STUCK ANIMALS!

Download the LEGO® Life app to access the instructions PLUS building instructions!

Find out more at lego.com/en-gb/kids/friends

TURN THE PAGE FOR MORE FUN WITH THE LEGO FRIENDS...

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Sea Life Games!

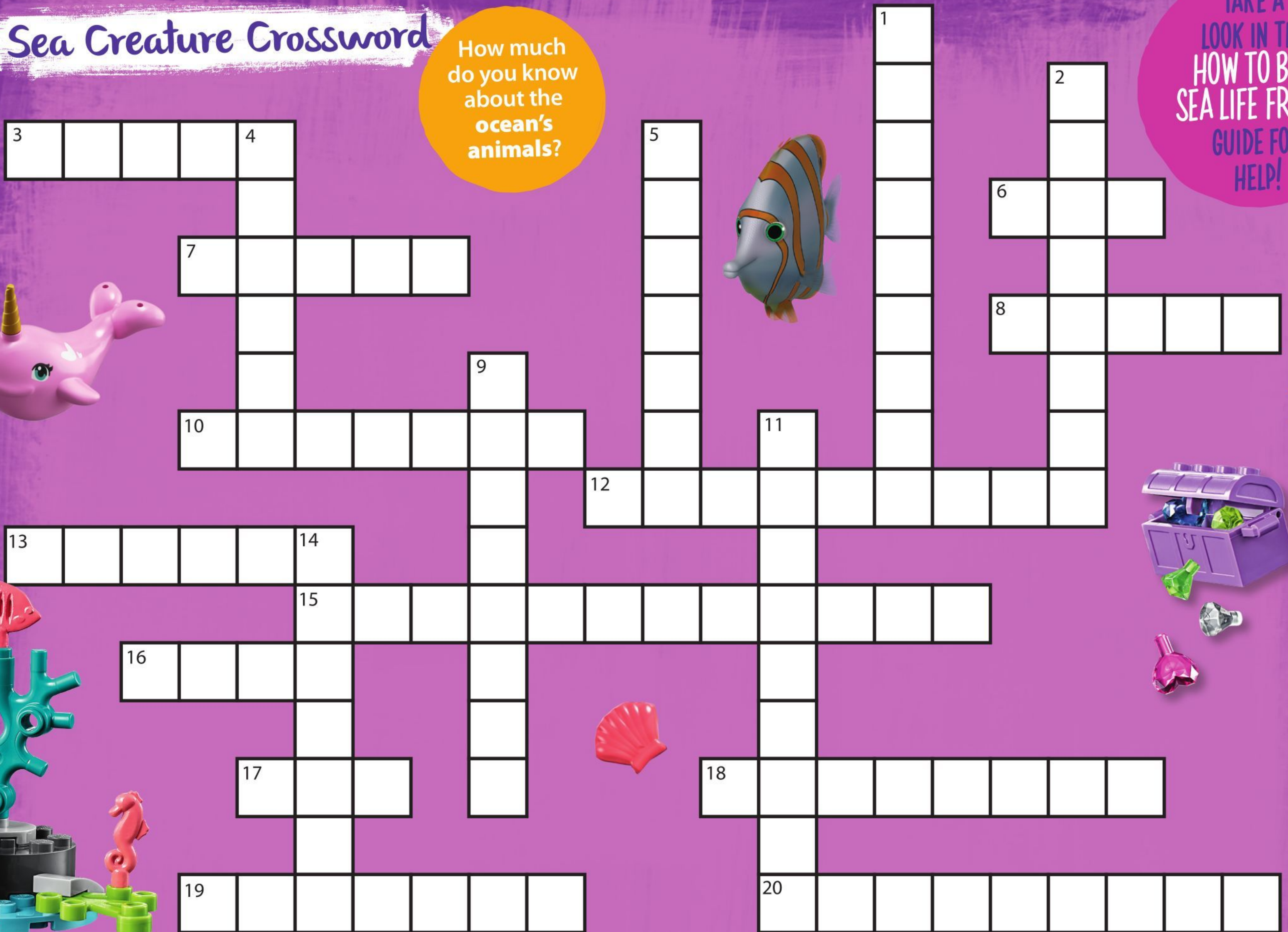
Before you dive into action with the LEGO Friends Sea Life range, test your underwater wisdom with these cool puzzles!

ANSWERS
ON PAGE
55

Sea Creature Crossword

How much do you know about the ocean's animals?

TAKE A
LOOK IN THE
HOW TO BE A
SEA LIFE FRIEND
GUIDE FOR
HELP!



ACROSS

- 3 What fish breathe through (5)
- 6 Group of dolphins (3)
- 7 Predator of the sea (5)
- 8 Protective, hard outer layer (5)
- 10 A layer of this protects sea mammals from the cold (7)
- 12 Largest creature ever to have lived (4, 5)
- 13 Marine mammal with tusks and whiskers (6)
- 15 How dolphins and narwhals navigate (12)
- 16 Killer whale (4)
- 17 Baby sea lion (3)
- 18 Some sea creatures push themselves through the water with these (8)
- 19 Acrobatic sea mammal (7)
- 20 Ride the waves on this (9)

DOWN

- 1 Sea turtles' favourite food (9)
- 2 What whales and dolphins breathe through (8)
- 4 Name of a group of fish (6)
- 5 Unicorn of the sea (7)
- 9 Males of this small fish give birth (8)
- 11 Squid have these (8)
- 14 Common ocean bird. Pinches chips (7)

Find out more at
lego.com/en-gb/kids/friends



Friends

Missing Letters

Fill in the missing letters so that a word is formed either side. If you get it right you'll reveal three types of equipment that undersea explorers might need!

BLO

ALS

FRO

SLU

MEA

BIT

PAS

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NLY

LAD

OOD

EFT

VEN

EEN

STE

GLE

FEE

LES

ZUL

SEM

BEA

ISH

ACH

ALL

UIT

RGE

NCH

RAP

TOE

NOO

DOD

DOO

LOO

TRE

YEL

OOT

INE

VEN

ANG

ISS

CHO

OVE

Turtle True or false?

Can you tell the facts from the fibs in this fun quiz?

1 TRUE OR FALSE? If they're scared, sea turtles hide their heads in their shells.

2 TRUE OR FALSE? Green sea turtles are named after their bright green shells.

3 TRUE OR FALSE? The oldest recorded sea turtle lived to be 188 years old.

4 TRUE OR FALSE? When they nest, female turtles lay about 100 eggs.

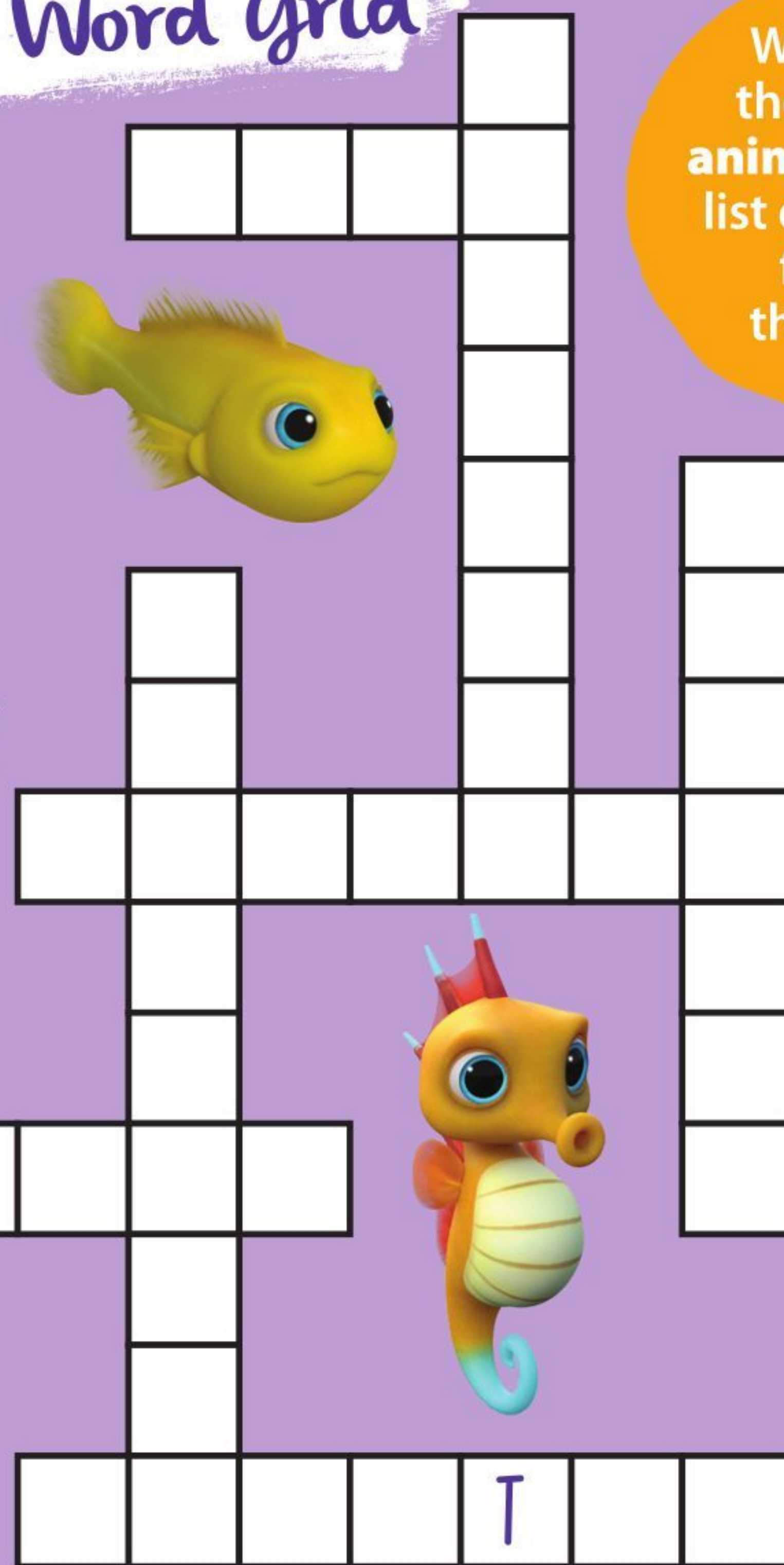
5 TRUE OR FALSE? Whether a turtle is male or female depends on the nest temperature.

6 TRUE OR FALSE? Turtles love nibbling on ice cream.

Watery Word Grid

Which of the ocean animals in the list does NOT fit into the grid?

BLOBFISH
DOLPHIN
NARWHAL
SEAL
SEA LION
SEA TURTLE
SEASTAR
SHARK



WIN!

LEGO FRIENDS SEA LIFE SETS!

One star-prize winner will scoop the entire LEGO Friends Sea Life range – Rescue Mission Boat, Lighthouse Rescue Center, Dolphins Rescue Mission and Turtle Rescue Mission!

Five runners-up will bag the Turtle Rescue Mission set. For your chance to win, just answer this question...

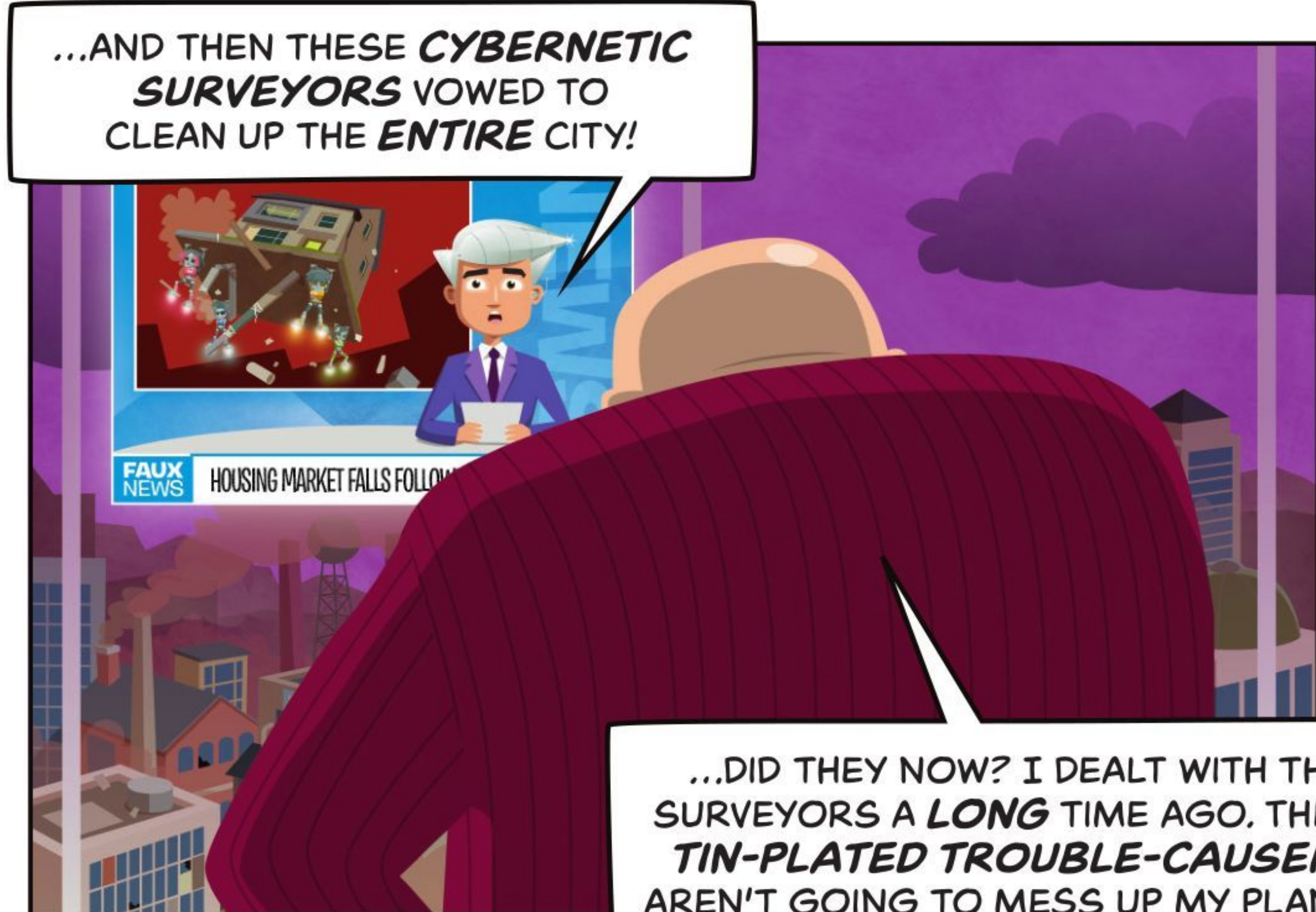
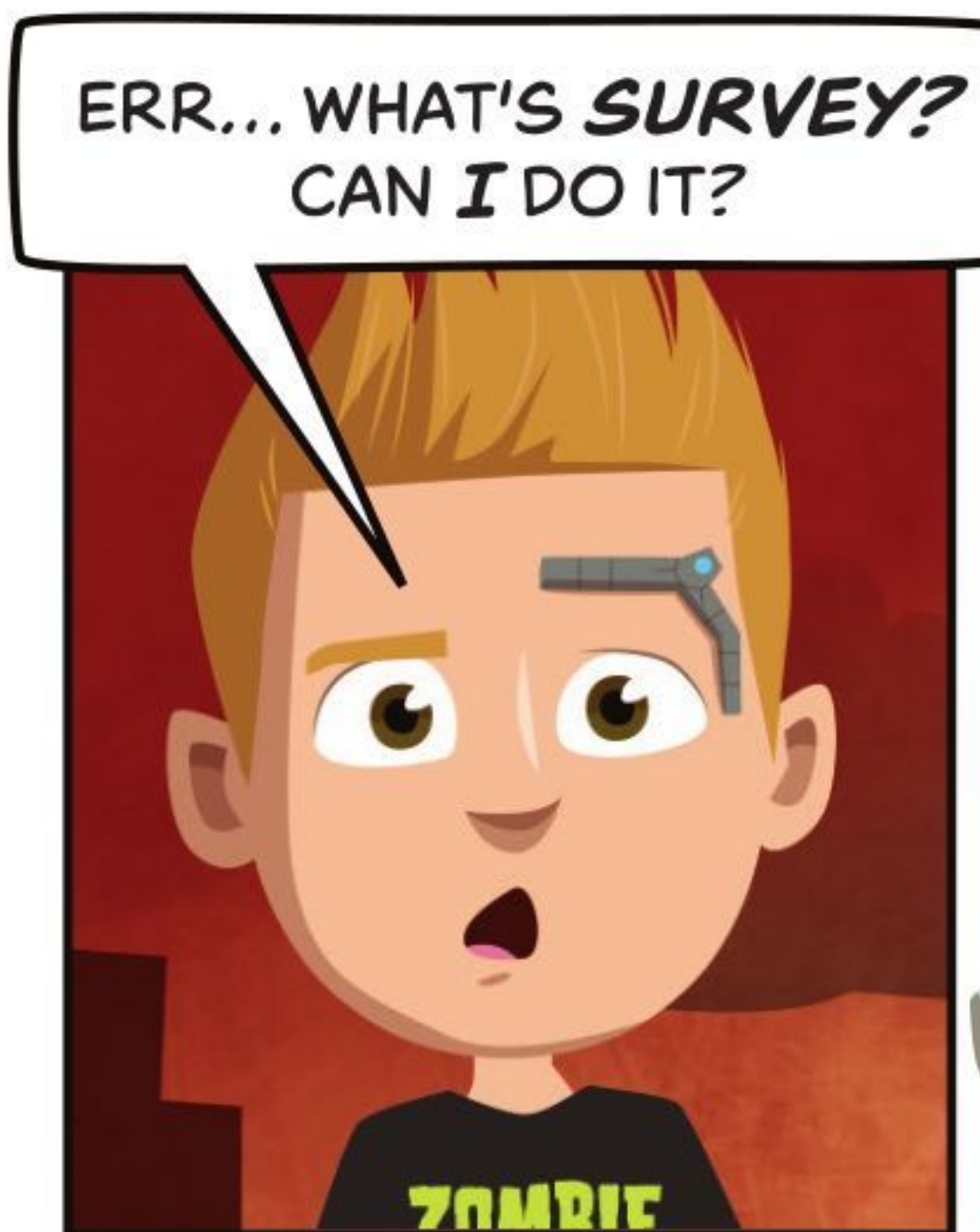
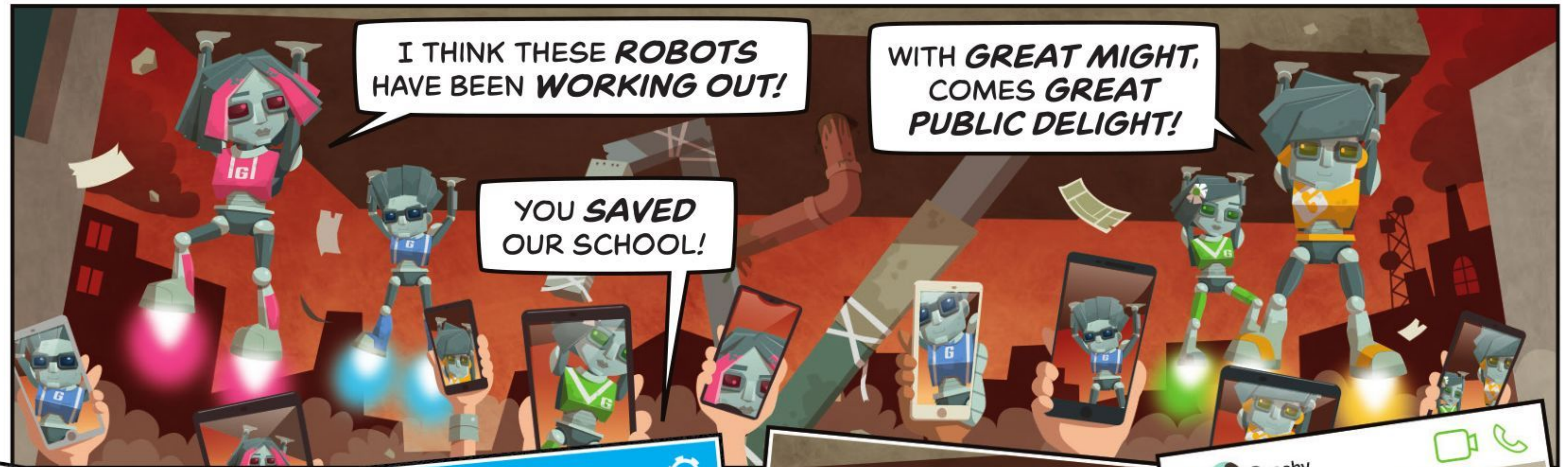
Q Which of these is NOT a type of whale?

- a) Humpback
b) Blue c) Red

ENTER AT NATGEOKIDS.COM

GEO SQUAD

#6

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KIDS
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@GETKIDSINTOSURVEY

...DID THEY NOW? I DEALT WITH THE SURVEYORS A LONG TIME AGO. THESE TIN-PLATED TROUBLE-CAUSERS AREN'T GOING TO MESS UP MY PLANS...

TO BE CONTINUED, IN THE PRESENT AND THE FUTURE...

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FIND OUT MORE AT www.getkidsintosurvey.com/ **Comic**

HISTORY'S GREATEST HITS

ALL ABOUT

MARIE CURIE

Meet the pioneering Polish scientist whose discoveries and inventions saved loads of lives – and continue to do so today!



1867

Marie Curie was born in **Warsaw, Poland**, on **7 November 1867** – her birth name was actually **Maria Skłodowska**. She was the youngest of **five kids**. Both her parents were **teachers**, and they made sure that Maria, her three sisters and their brother were **well educated**. Her dad specialised in teaching **maths** and **physics**, which Maria loved.

1883

When she left school aged **15**, clever Maria was **top of her class**. However, at that time the **University of Warsaw didn't accept girls**, so to continue her education she needed to study in **France**. But going to a university abroad would be **expensive**, so Maria struck a deal with her sister **Bronya** – Maria would **work** as a governess to **support Bronya** through **medical school** and, after graduating, **Bronya** would **help Maria** though uni. Sorted!

1894

Marie fell in love with fellow scientist **Pierre Curie**, and the pair **married** in **1895**. She then made an important **breakthrough** while studying the work of **Henri Becquerel**, who'd found invisible '**rays**' coming from the chemical **uranium**. Pierre quickly abandoned his own work to help her. Her further studies into this material led her to discover two previously unknown elements – **Polonium** and **Radium**. Both these elements gave out **energy** in powerful rays. She coined the phrase '**radioactivity**' to describe this.



Marie set up a **cancer research facility** in **Paris** that still exists today. And the **Marie Curie cancer charity** is named after her!

1891 – 1893

Maria got a job as a **home tutor** to support her sis, and in **1891**, she finally made her way to **Paris, France**, to enrol at **Sorbonne University**. When she registered, she signed her name as **Marie**, so she would seem more **French**. And the name stuck! After two years of hard study Marie graduated with a **master's degree in physics**, and just a year later, she earned a degree in **maths**, too. Très bien!

1903 – 1911

Her findings created a **whole new field of science** named **atomic physics** and, in **1903**, the **Curies** and **Henri Becquerel** were awarded a **Nobel prize**. Pierre tragically **died** in **1906**, but their discoveries were honoured in **1911** with **another Nobel prize** – this time in **chemistry**. Marie dedicated her award to Pierre. She later took over his role as a **professor of physics** at Sorbonne.

1914 – 1934

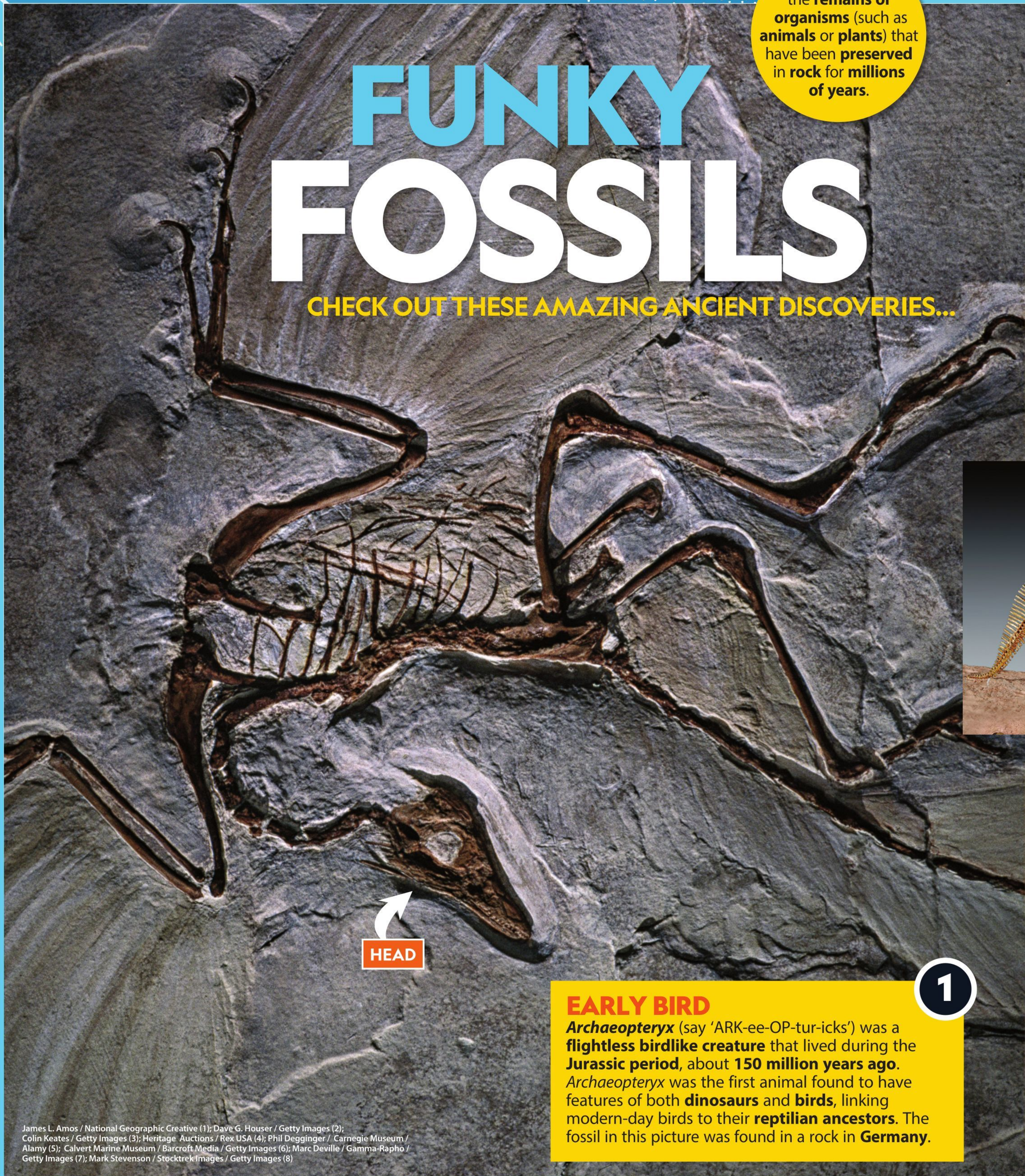
When **World War I** broke out in **1914**, heroic Marie invented a '**radiology car**' – a mobile **X-ray machine**! She fitted **20 cars** with **X-ray equipment**, trained women volunteers to operate them and headed to the battlefield. This helped save **countless lives**. Marie spent the rest of her life studying **radioactivity** and **teaching** until she died in **1934** (nobody knew then that exposure to radioactive materials can make you very ill). She'll forever be remembered as a **scientific trailblazer** – radiation is today used as one of the **main treatments** against **cancer**.



Fossils are the remains of organisms (such as animals or plants) that have been preserved in rock for millions of years.

FUNKY FOSSILS

CHECK OUT THESE AMAZING ANCIENT DISCOVERIES...



HEAD

1

EARLY BIRD

Archaeopteryx (say 'ARK-ee-OP-tur-icks') was a flightless birdlike creature that lived during the Jurassic period, about 150 million years ago. Archaeopteryx was the first animal found to have features of both dinosaurs and birds, linking modern-day birds to their reptilian ancestors. The fossil in this picture was found in a rock in Germany.

James L. Amos / National Geographic Creative (1); Dave G. Houser / Getty Images (2); Colin Keates / Getty Images (3); Heritage Auctions / Rex USA (4); Phil Degginger / Carnegie Museum / Alamy (5); Calvert Marine Museum / Barcroft Media / Getty Images (6); Marc Deville / Gamma-Rapho / Getty Images (7); Mark Stevenson / Stocktrek Images / Getty Images (8)



2

RHINO SKULL

Ten million years ago, flowing ash and rock from a volcanic eruption in what is now Nebraska, USA, 'baked' and preserved this rhino's skull and jaw. Because the heat usually incinerates them, mammal fossils like this one are rarely discovered in volcanic rock. What a find!

TERRIBLE TEETH

These terrifying fossilised teeth – yes, they're teeth – filled the entire lower jaw of the 270-million-year-old fish *Helicoprion*. The prehistoric creature didn't have any upper chompers, perhaps because its peculiar lower ones – which looked like a circular saw – were so effective at snagging grub. Gulp!

3



4

MONSTER FISH

Spanning 3.3m across and 2.7m in height, these giant jaws belonged to a prehistoric shark called *Megalodon*. The 15-m-long, 55-ton predator roamed the seas 3.6–20 million years ago, devouring dolphins and baleen whales!



5

DESERT SHEEP

This 70-million-year-old plant-eating dinosaur – a *Protoceratops* – lived in the prehistoric deserts of central Asia. So many *Protoceratops* fossils have been uncovered over the past century that scientists refer to them as the sheep of the Cretaceous period!



6

PREHISTORIC POOP

Researchers discovered these fossilised faeces (called coprolites) covered with bite marks from a prehistoric shark. They believe the poo – possibly belonging to an ancient crocodile – was still inside the victim when the shark attacked it. Barf!



7

STICKY SITUATION

Fossilised insects are hard to find. Luckily for scientists, this 125-million-year-old fly got stuck in sticky tree resin – which fossilised into amber – while it was sucking the blood of an animal. Oops!



8

FIERCE FACE-OFF

In 2006, an American farmer discovered the 68-million-year-old skeletons of a *Tyrannosaurus rex* and a *Triceratops* locked in battle. Some of the *T. rex*'s teeth were even found IN the *Triceratops*'s skull!



JUNIOR EXPLORERS' CLUB



Evie mucking in with her tasks!

WILDLIFE WATCH



Dear NG KIDS,
I recently enjoyed a **Junior VIP experience** at **The Donkey Sanctuary Sidmouth**, where I learned how to **look after** the donkeys, **groom** and **harness** them, take them for **walks** around the paddock, **clean the yard**, make **fruit kebabs** and much more. It was the **best experience ever** and I will remember it for many years to come! I would love to **volunteer** at a donkey sanctuary when I'm older.

Evie, 8

● It looks like you had a terrific day out, Evie – hope the donkeys enjoyed it, too!

ART ZONE!

HA
HA

LOLZ

HA
HA

Q Why is Europe a bit like a pan?

A It has Greece at the bottom!
Aaron, 9

HA
HA

HA
HA



Hi NG KIDS!
My favourite animals are **sun bears** – I love their funny **long tongues**. I really enjoy drawing so I decided to make this picture. I hope you like it as much as I do!
Charlotte, 10
● We love it, Charlotte. It's *bear-illiant*!

ECO WARRIOR



Hi NG KIDS,
I'm passionate about the ocean. To help look after it, I like to take part in **beach clean-ups** organised by the **Sea Shepherd**s, a **marine wildlife conservation** organisation. Here's me getting to work on **Brighton Beach**.
Mika, 7

● Fantastic, Mika. Keep up the great work!

Brighton's pebbly beach is cleaner thanks to Mika!



We want to hear from YOU! Send in your artwork, jokes, craft pics and pet photos; tell us about your wildlife sightings, hobbies and interests, and share your opinions. Email kids@ngkids.co.uk or write to the address on page 3. A selection will be printed on this page. Every reader on these pages will receive a copy of NG KiDS' **Weird But True! 2020** annual! Available at harpercollins.co.uk



SUPER SCIENCE

Check out the **formicarium** (ant farm) I am making for some **Lasius niger** queen ants. I'm hoping to place a **colony of ants** in it once the **nanitics** (a kind of **worker ant**) have hatched. I used a **concrete block** and carefully **carved out** the **chambers** and **tunnels** with a **screwdriver**, and my **dad** helped me **drill some holes** as well.

Now I need to finish the **foraging area** which will go on the top. I can't wait to watch the colony develop in their new home!

Aether, 6

What a fascinating project, Aether! Just make sure the ants are kept safe and healthy.



Aether hard at work making his ant farm



POSTCARD FROM...

Central America



Hello NG KiDS!
This year me and my family went on holiday to **Central America** and **Cuba**. In **Costa Rica**, we headed up a **smoking volcano** called **Poas**, swam in **thermal pools**, went **zip-lining** through the **rainforest** and visited a **cacao plantation**, where we learned how to make **chocolate**! In **Mexico**, I was lucky enough to visit the **Mayan cities** of **Chichen Itza** and **Tulum**, and float on **inflatable rings** through the **mangroves**. We also visited the city of **Havana** in **Cuba**, where we saw awesome old **American cars** and watched a **Cuban ballet**. The whole holiday was amazing but my favourite place was **Costa Rica**!
Sophia, 8

Thanks for the postcard, Sophia. Sounds like an incredible trip. Wow!



Mum sloth and baby!

ADVERTISEMENT

MEET MYLES FOWL

Fantastically **clever** and fanatically **neat**, **Myles** is not your typical **11-year-old**. Every day, he **3-D prints** a sharp new suit, and **slicks back** his jet black hair with **special seaweed gel**.

This dapper **brainbox** (**IQ of 170**) is also a **non-identical twin** – but the pair have next to **NOTHING** in **common** (aside from their **big brother**, **criminal mastermind Artemis Fowl**).

Turn the page to find out about Myles' **equally bizarre**, but **wildly different**, twin...



Spectacles augmented with **artificial intelligence**. Cool!

IN IT TO WIN IT!

Enter online at
natgeokids.com

WIN! HOT WHEELS CITY ULTIMATE GARAGE

Check out this awesome **Hot Wheels Ultimate Garage**! With over **90 parking spaces**, it's an amazing way to store and display your rad rides.

Zip up the speedy **two-car lift** with the press of a button, and then zoom down the **racetrack** from the top of the **tower** with a **big air jump**!

Race through the **multi-level garage** and pull back the launcher to take on the massive double lane. But be careful of the **monster shark** – because this menace likes to munch!



Five readers will zoom off with a **Hot Wheels Ultimate Garage**. Amazing!

● Available from all good toy stores

Q Which of these is a real species of shark?

- a) Giraffe shark
- b) Whale shark
- c) Rhino shark

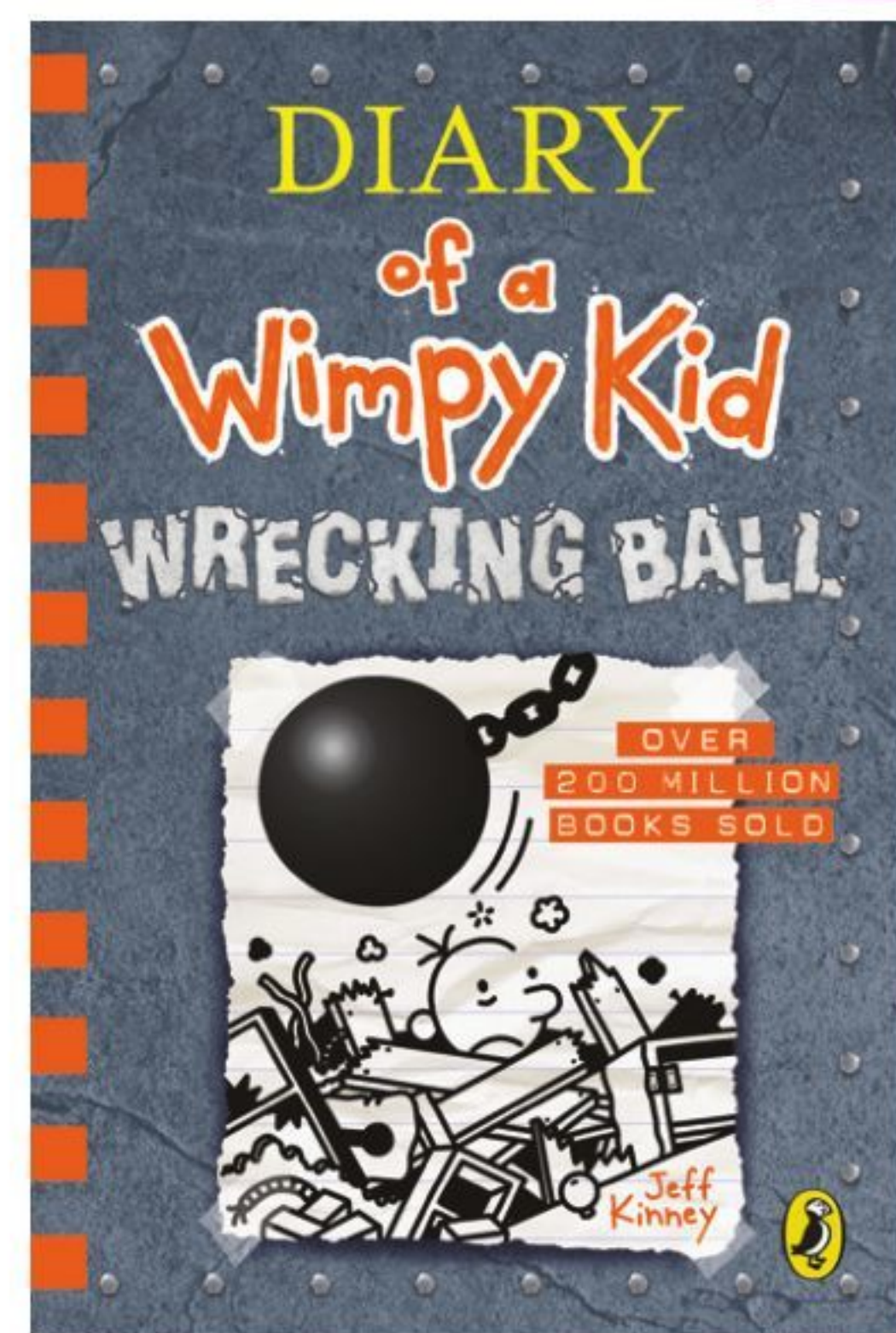
WIN! DIARY OF A WIMPY KID SERIES

Join the **Heffley** family in **Wrecking Ball**, the hilarious new book in the **Diary of a Wimpy Kid** series.

An unexpected **inheritance** gives the Heffleys a chance to make major **improvements** to their home. But they soon find that **construction** isn't all it's cracked up to be. When things get rough, will the Heffleys be able to stay put, or will they be forced to **move out**?

Five bookworms will win **all 14 books** in the **Wimpy Kid** series – including **Wrecking Ball**.

● Available in all **good bookshops**



Q Which of these tools might you use in construction?

- a) Screwdriver b) Screwcyclist c) Screwpilot

WIN! NATIVITY! THE MUSICAL TICKETS

LONDON'S FAVOURITE FAMILY CHRISTMAS MUSICAL RETURNS FOR A THIRD SENSATIONAL YEAR!

SHARON OSBOURNE • DANNY DYER
DANI DYER • RYLAN CLARK-NEAL • SIMON LIPKIN

Nativity!
The Musical



Every child in every school has one **Christmas wish** – to star in a **Nativity**. And at **St. Bernadette's School** they're attempting to put together a **musical** version.

Unfortunately, teacher **Mr. Maddens** has told a little white lie and promised his class that a **Hollywood producer** is coming to see the show, to turn it into a film.

Join Mr Maddens, his crazy teaching assistant **Mr. Poppy**, hilarious children and a whole lot of sparkle and shine as he struggles to make his festive fib – and everyone's **Christmas wish** – come true.

One reader will win a **family**

ticket to see **Nativity! The Musical** in **London** plus up to **£100** towards travel. **Two runners-up** will each scoop a **family ticket** to the show.

● Read more at nativitythemusical.com

Q Can you unscramble these letters to reveal something found on a Christmas tree?

AIFRY HIGTSL

ENTER BY
20 NOVEMBER

Ts&Cs: A family ticket is four tickets, minimum one adult, to see **Nativity The Musical**, at the Eventim Apollo Hammersmith. Valid for all Mon–Fri performances, until **20 Dec 2019**. Subject to availability. No cash alternative. Top prize includes up to **£100** towards travel costs.

21 chances to win!

WIN! BEE SIMULATOR AND NINTENDO SWITCH

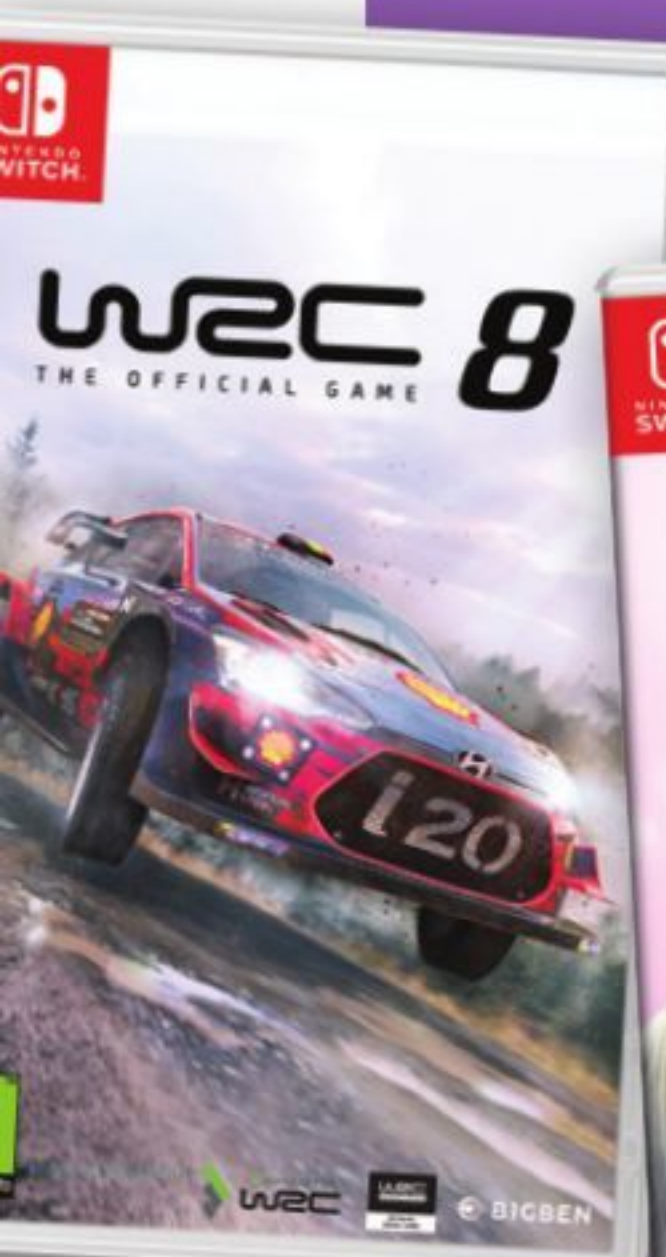
See the world through the eyes of a **bee** in new game *Bee Simulator*. Learn all about the lives of these helpful insects – from how they **communicate** and **collect pollen**, to how they **protect the hive** from **disease** and **defend** it from other **bugs**. It's the bee's knees!

You play as a **pollinator bee** who has set up home in a **city park**. But one day your life is turned upside down when **humans** decide to **cut down your tree**. The fate of the hive is in your hands, so there's no time for **bumbling** about!

One winner will buzz off with *Bee Simulator* plus *The Unicorn Princess*, *WRC 8* and a **Nintendo Switch** to play them on! Two runners-up will fly off with *Bee Simulator*.

● Buzz over to game.co.uk

Q Which of these would you find inside a beehive?
a) Jamcomb b) Buttercomb c) Honeycomb



WIN! JOHN ADAMS SCIENCE KITS

Perform **12 yucky activities** with *Gross Science*, and learn about everything from how **farts brew** to why **scabs form**. You can even make your own **edible skin**. Eww!

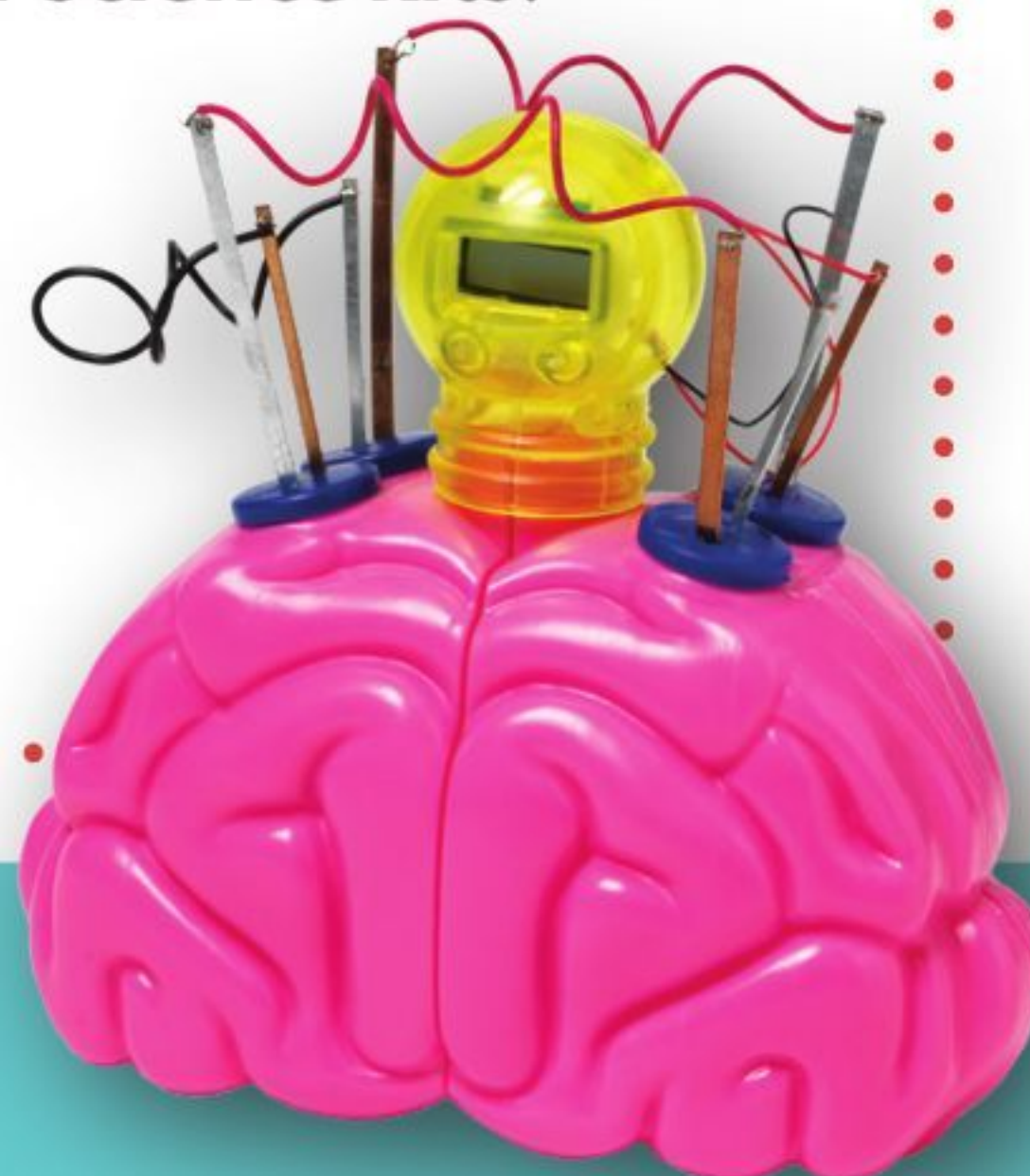
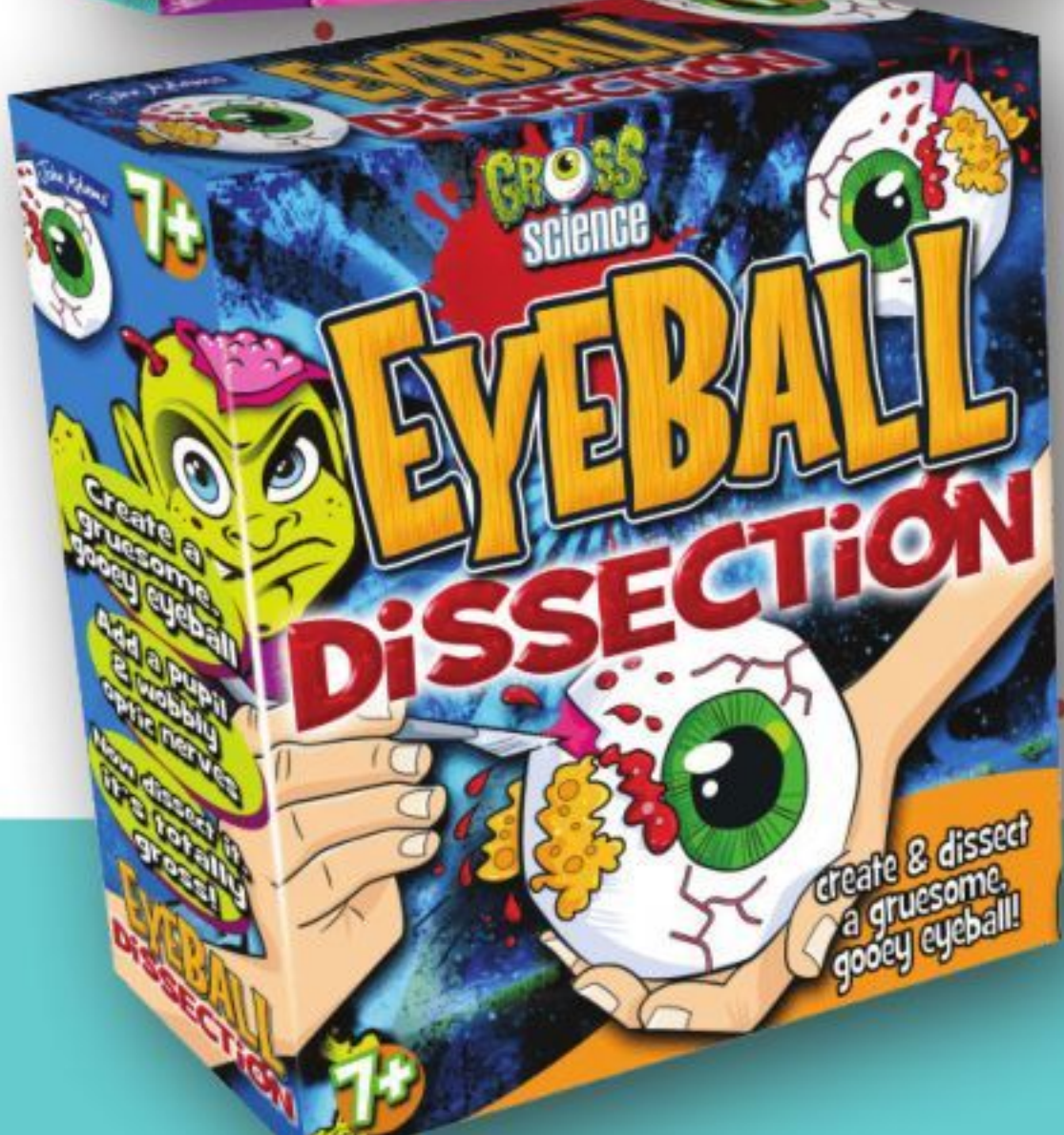
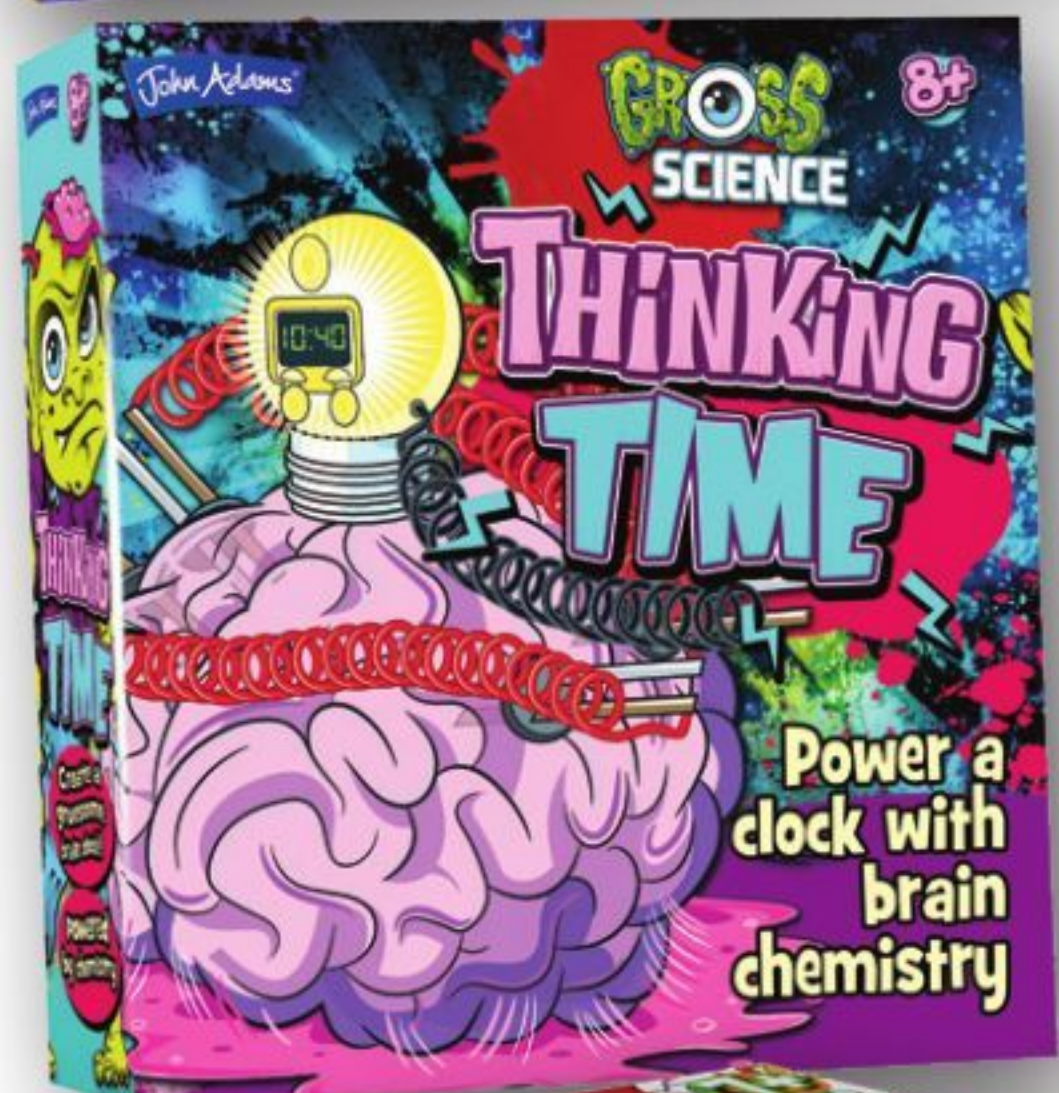
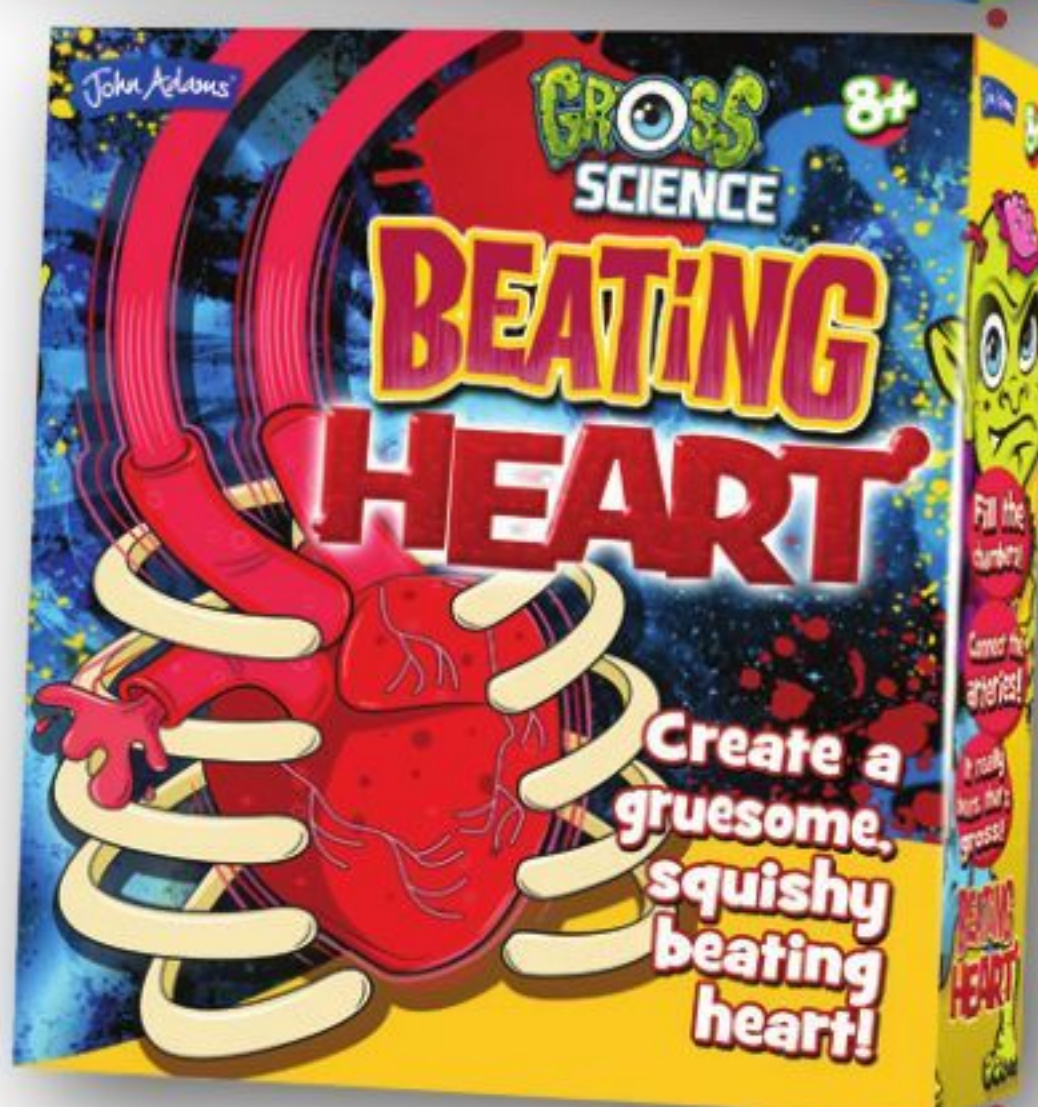
In *Eyeball Dissection*, create a realistic-looking **peeper** complete with a **pupil** and wiggly **optic nerves**, and then perform a gory **autopsy** with the **scalpel**.

Make awesome **snap-together electronics sets** with *Hot Wires*, and then **power a clock** using **brain-power chemistry** with *Thinking Time*. You can make a model of a **Beating Heart**, too. Once built, press the **balloon pump** to watch it beat realistically.

Five winners will get all five super science kits.

● Available from **Amazon**

Q Which of these is NOT a part of the eye?
a) Lens b) Retina c) Lobe



ADVERTISEMENT

MEET BECKETT FOWL

Messy and wild, with **untamed blonde curls**, you'd never know **animal-loving Beckett** was related to the super-smart **Myles** – let alone that they're **twins** who were once **conjoined**!

When they were born, the peculiar pair were **fused together from wrist to little finger** – but the only evidence of that now is a **pink scar** running along the outside of their palms.

Flip the page to find out about the **strange** and **adventurous** lives of these brilliant brothers, stars of a **brand-new book...**

Golden necktie, made from Beckett's cured and laminated pet goldfish, Gloop. He never takes it off!

HarperCollinsChildren'sBooks

CRIMINAL GENIUS RUNS IN THE FAMILY

Experience another pulse-pounding adventure from the author of the epic *Artemis Fowl* series...

Eleven-year-old **twins Myles and Beckett Fowl** are wildly different. Myles is an **impeccably neat brainbox**, Beckett a **boisterous scruffbag** – and they have almost nothing in common. So when they're left for one night in the care of **NANNI**, a **house security system** designed by their big brother – **criminal mastermind Artemis** – it's unlikely anything could go wrong. Right?

Wrong! During that solitary evening, the boys befriend a **one-of-a-kind fairy**, discover a **troll** named **Whistle Blower** on the run from an **evil immortal duke**, meet a **knife-wielding nun** and are **shot at, kidnapped, buried, arrested, threatened** and even **killed** (just temporarily, though). Yikes!

In an **epic adventure** that's fraught with **danger** and full of impressively **hi-tech gadgets**, Myles and Beckett discover just how **strong the bond between twins** can be.



OUT
NOW!

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wherever
books are
sold

BADDIES
TO WATCH
OUT FOR!

**SISTER JERONIMA
GONZALEZ-RAMOS DE
ZARATE OF BILBAO**

AKA the **Nunterrogator**. Not your average nun, **knife-throwing Jeronima** is on a mission to **find proof** of the existence of **magical creatures** – and she'll **stop at nothing** to succeed, even if it means **trespass, kidnap** and her speciality, **nunterrogation**. Gulp!

**LORD TEDDY
BLEEDHAM-DRYE**

Also known as the **Duke of Scilly**, **Lord Teddy** is a royal **thorn in the twins' side**. With his mouth permanently curled in a **bitter sneer**, Teddy is determined to find the secret to **eternal life** and will do anything to extend his **life-span**, including **bathing with electric eels**, hanging over an **active volcano** and now hunting the **venom of a rare troll**...

UNS IN THE FAMILY...

HIGH SPEED GETAWAY

Oh no! The villainous **Nunterrogator** and the **Duke of Scilly** are in hot pursuit of the twins. Can you navigate this maze and help them escape?

START

Answers
on page
55

FOWL FINDER

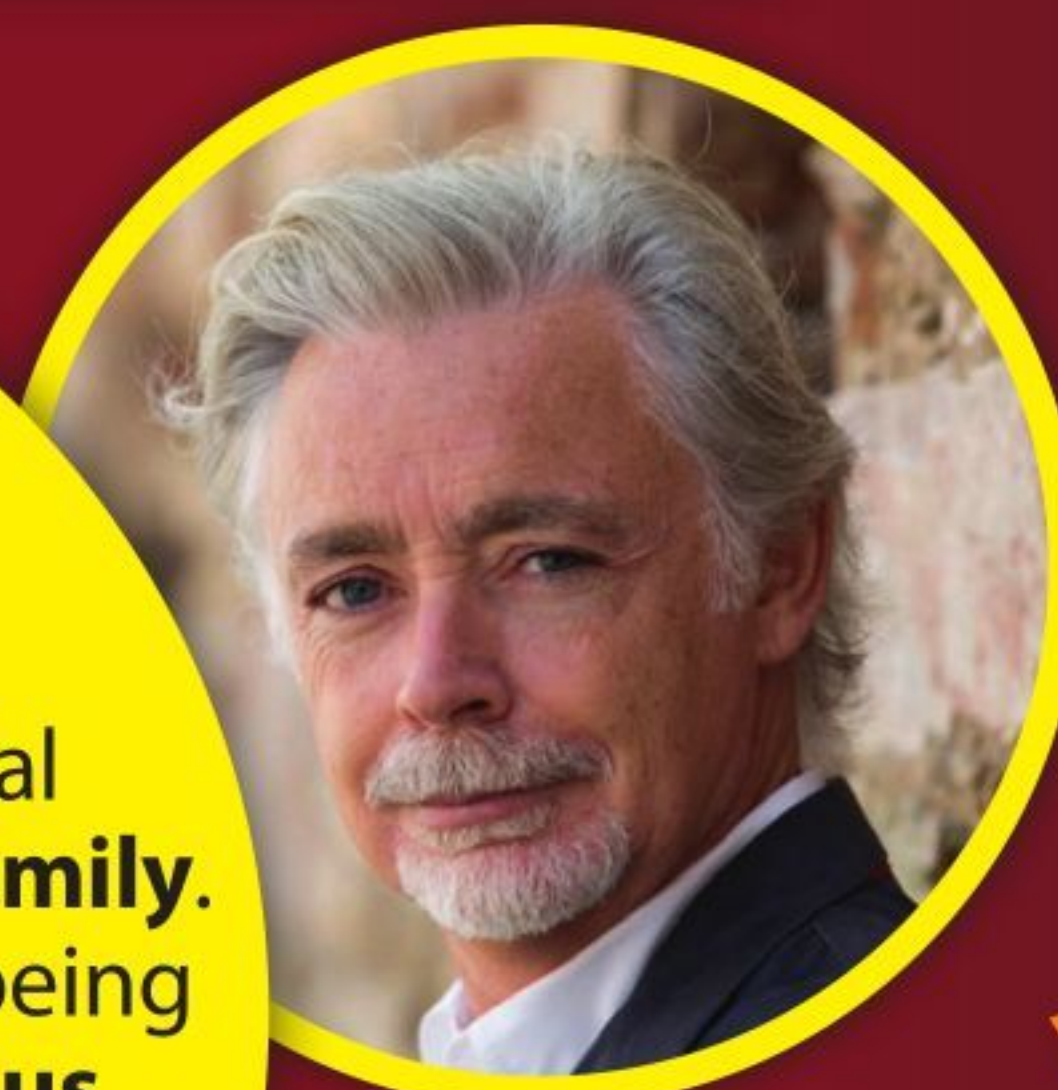
Can you find the following characters from **The Fowl Twins** hidden in the grid below?

● ARTEMIS ● BECKETT ● JERONIMA
● LAZULI ● MYLES ● NANNI ● TEDDY

G	T	M	L	A	Z	U	L	I	J
E	A	B	Y	T	E	D	D	Y	C
X	M	H	E	L	F	N	Y	K	Q
R	I	L	I	C	E	E	U	Q	Y
M	N	D	N	A	K	S	Y	H	W
I	O	O	N	F	R	E	G	K	P
S	R	R	A	M	B	D	T	H	N
Q	E	P	N	D	M	F	L	T	L
M	J	A	R	T	E	M	I	S	K
G	P	V	R	T	T	J	C	I	M

MEET THE 'BIOGRAPHER'

Author **Eoin Colfer** is the official biographer of the famous **Fowl family**. He worked as a **teacher**, before being recruited by the **criminal-genius dynasty** and turning his attention to full-time writing. Eoin lives with his family in an undisclosed location in **Ireland**. His home is **protected by fairies**.



WIN!

Signed Fowl Twins books!

We've got **five copies** of this brilliant new book to give away, each one **signed** by author **Eoin Colfer**. For a chance to win just answer this question...

Q In the book, Lord Teddy is the Duke of where?
a) Sicily b) Scilly
c) Silly

Enter at natgeokids.com

HERO TO ROOT FOR!

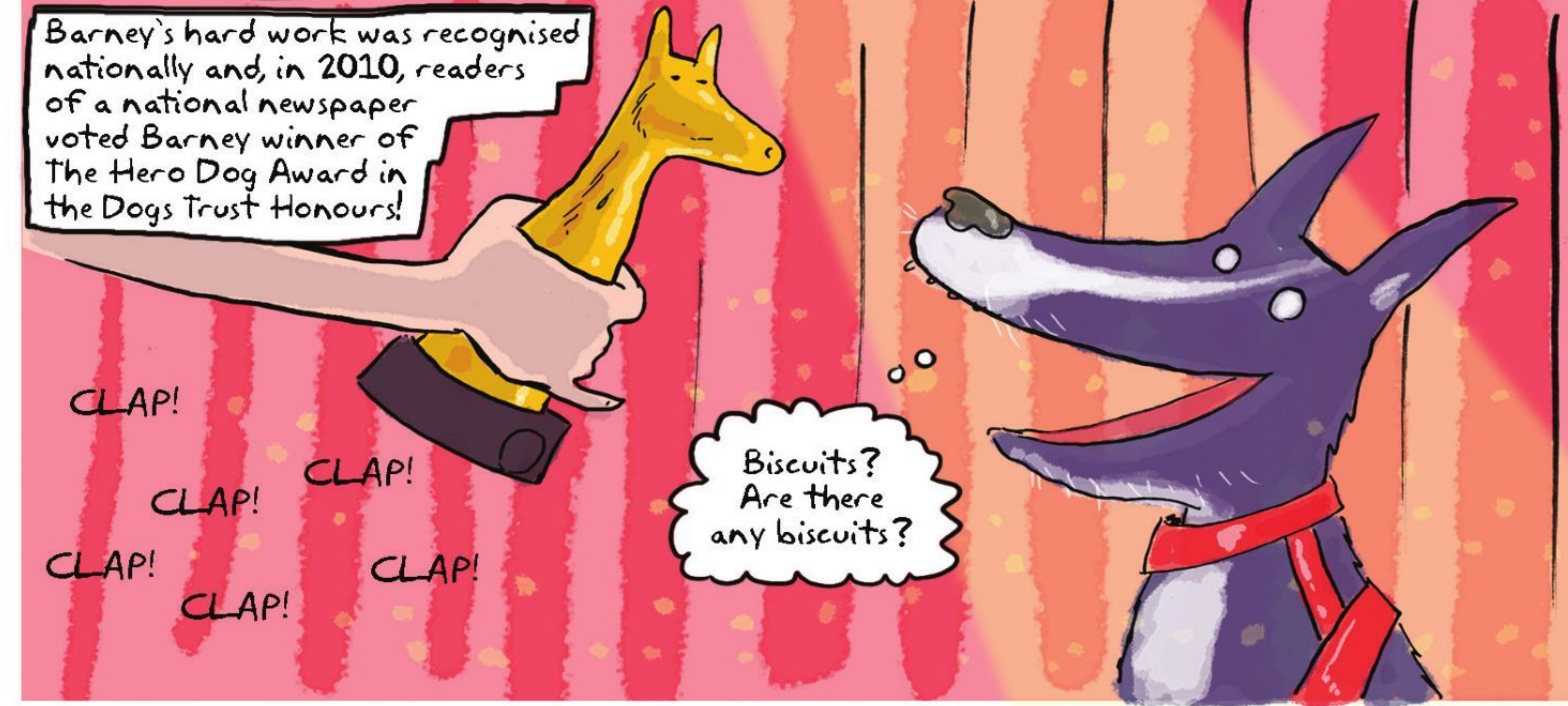
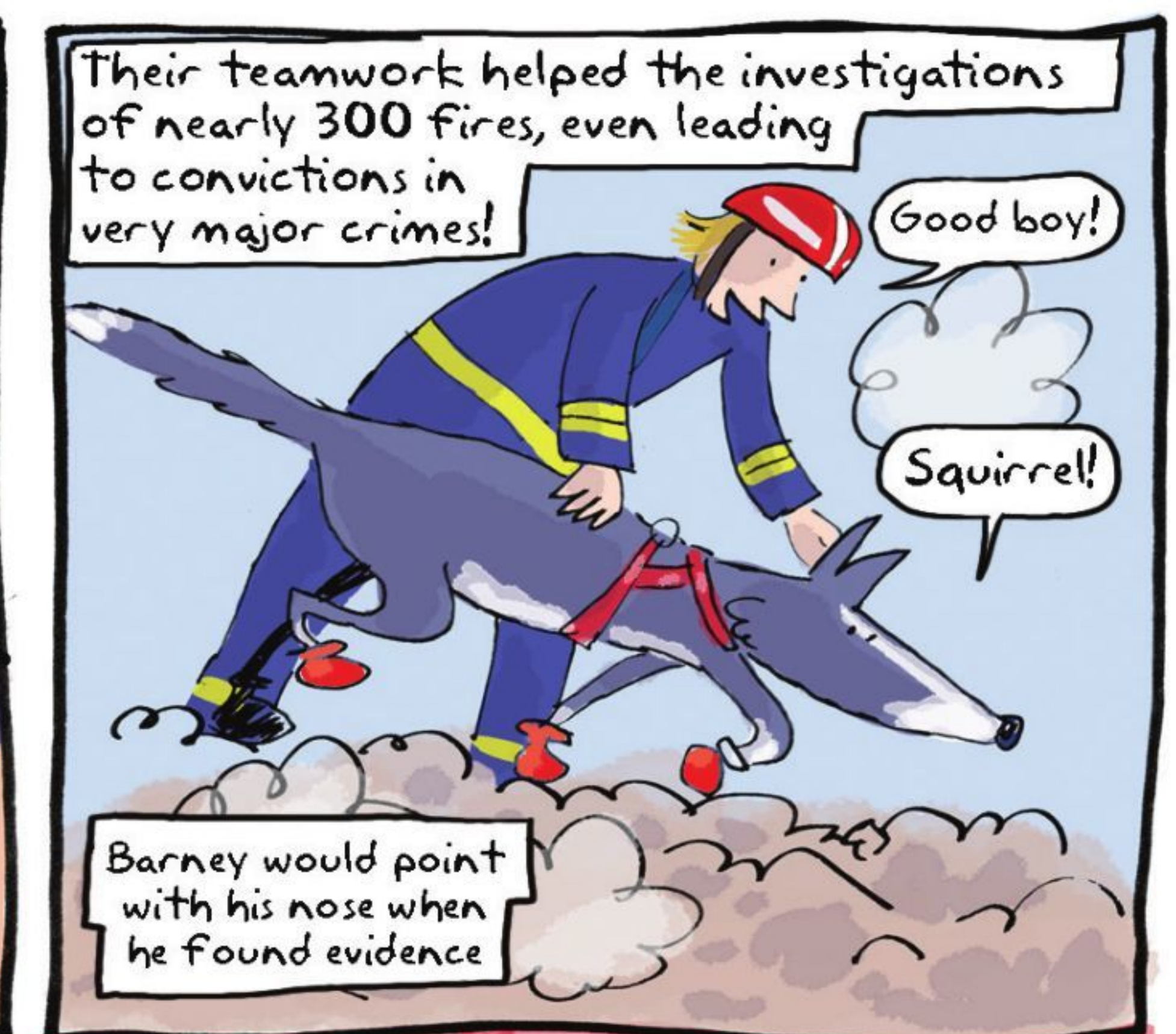
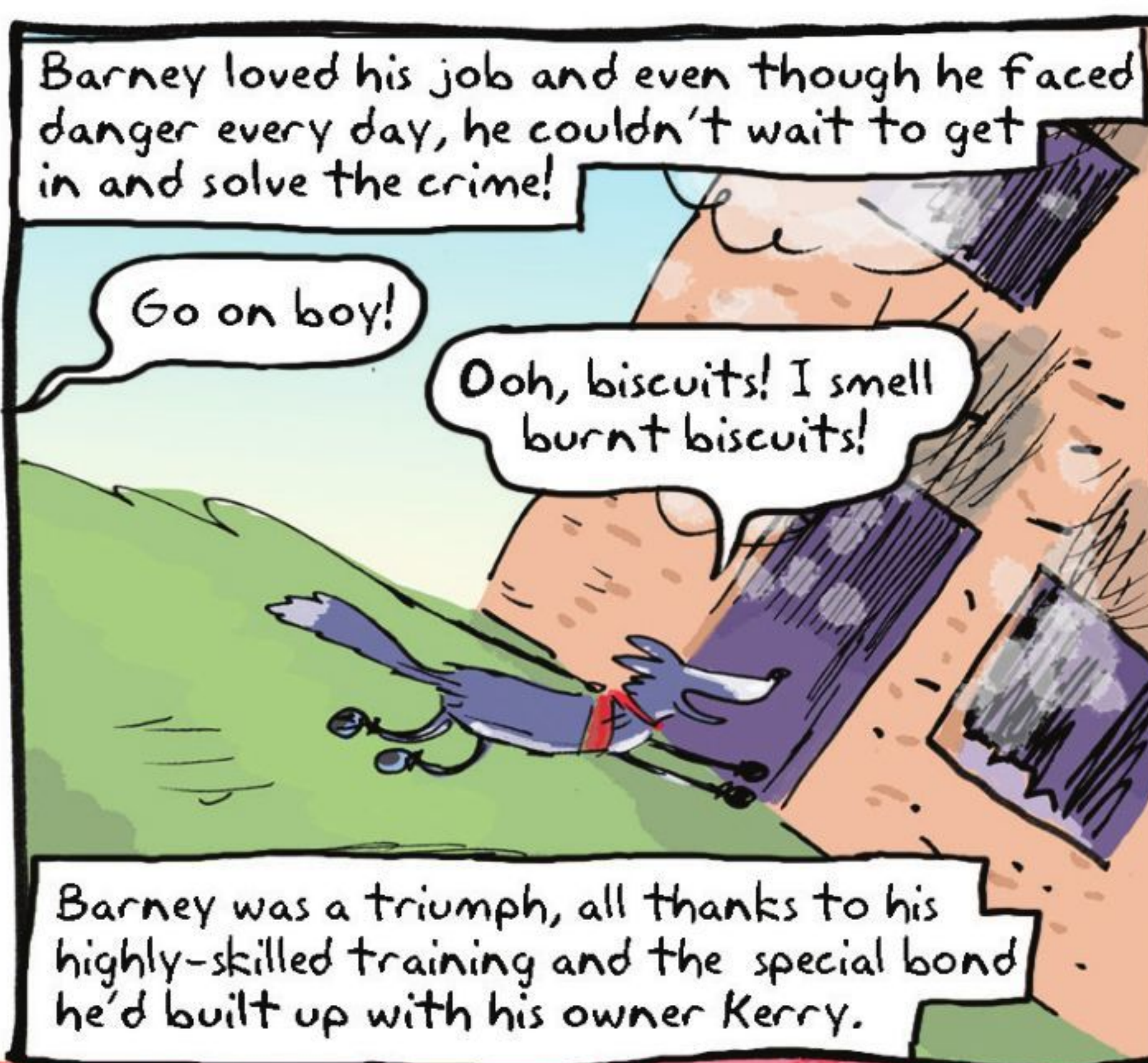
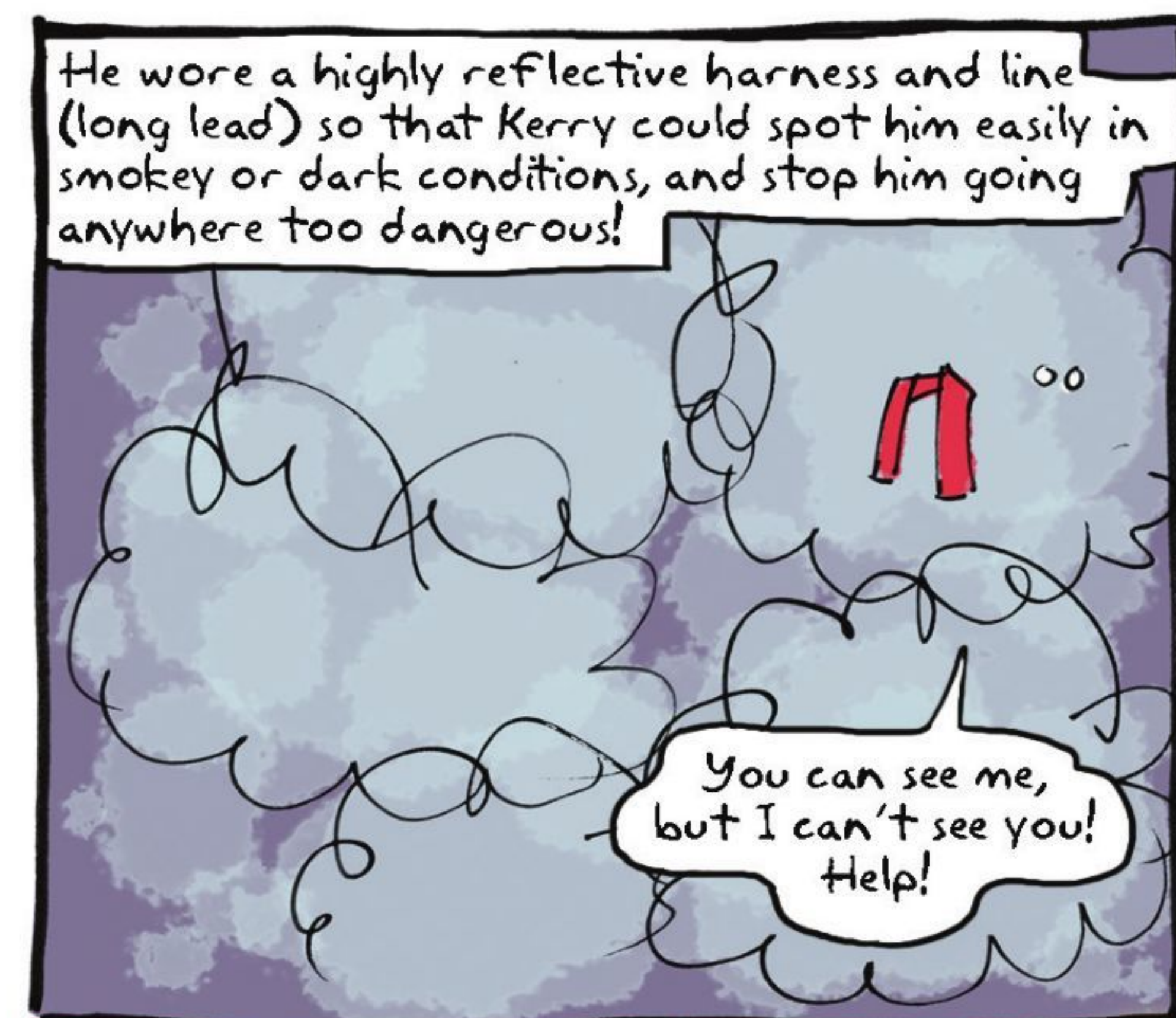
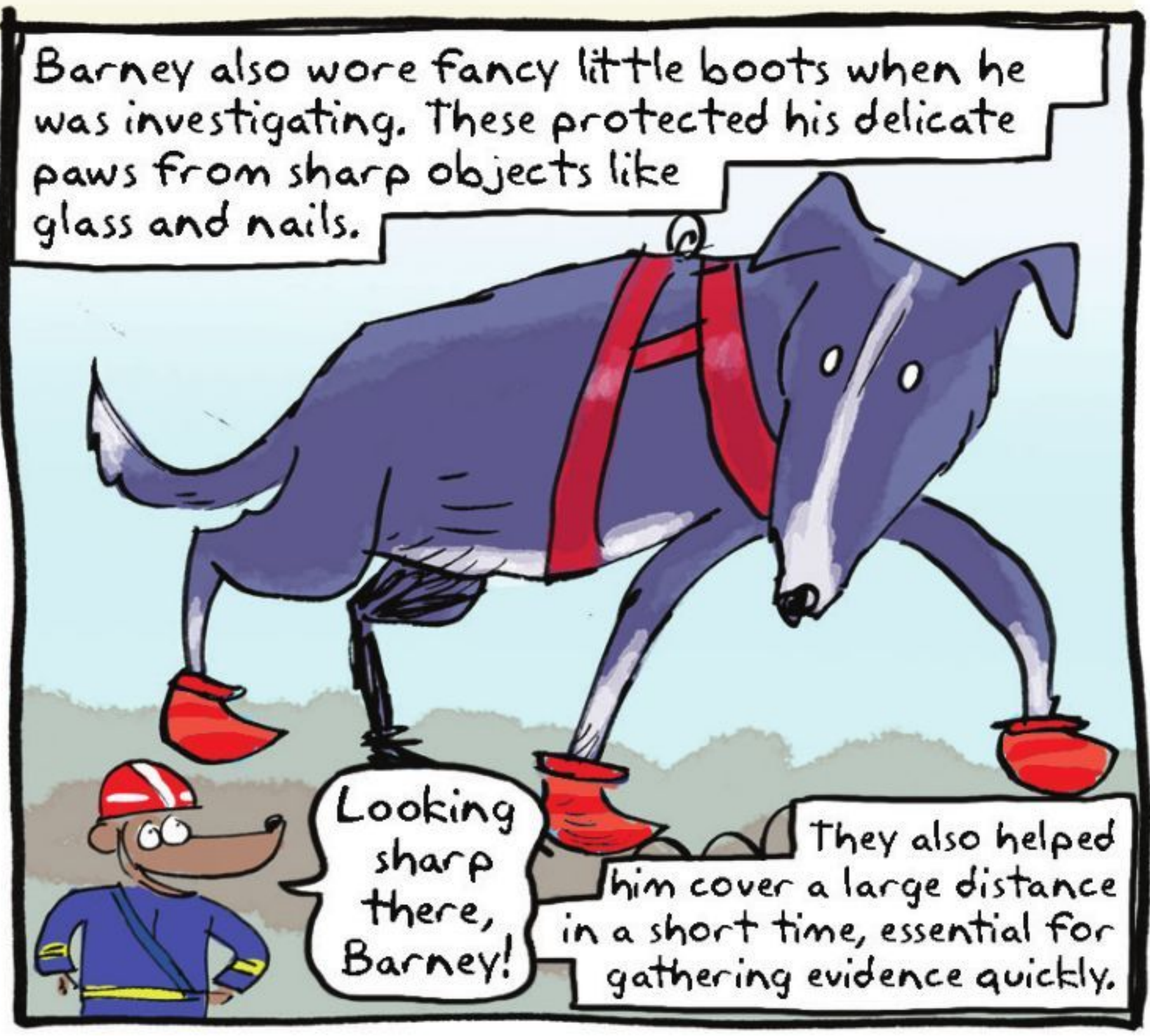
LAZULI HEITZ

Lazuli is a unique hero, a **pixie-elf hybrid** known as a **pixel**. This gives her very **distinguishing features**, like **aquamarine blue skin** and **eyes**, a mottling of **yellow arrowhead markings** scattered across her neck and shoulders, and **fair blonde hair**. She might be **small in stature**, but **don't underestimate** this **petite police officer** – she has a **sharp mind**, a **stubborn streak** and she's deadly with an **Oxalis pistol**. Watch out!

Find out more at po.st/FowlHCCB


MAX MEETS... BARNEY, THE FIRE INVESTIGATION DOG

This month, NG KiDS' time-travelling mouse, Max, visits Barney – the canine hero that solved hundreds of crimes!



**weird
but
true!**

Check out these
outrageous facts...



The **BATS** from
WIFFLE BALL,
a miniature version
of baseball, were
originally made from
BROOMSTICKS.



A British man grew a
**GIANT
COURGETTE**
that weighed as much as
a large sheepdog.

Two
Brazilian
men windsurfed
8,119
km




– the trip
took them
14 MONTHS!



You
can shine
leather **SHOES**
with a
**BANANA
PEEL**.



A cat named
Lucky
got **STUCK IN**
A TREE for **6 WEEKS**
and **SURVIVED**.



There are only
13 LETTERS
in the
HAWAIIAN
alphabet.



A **GOAT'S**
PUPILS are
RECTANGULAR.

The average
person in the
USA
drinks about



470

cans of fizzy
pop in a year.



Only
MALE TURKEYS
MAKE
GOBBLE
NOISES.

Answers on page 55

RAKING WRECK

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

GRAMMAR TERMS!

Noun – a person, place or thing

Verb – an action word that describes what a person or thing does

Adjective – a word that describes a noun

Adverb – a word that describes a verb



_____ and I were raking _____ on a(n) _____ autumn day.
friend's name **noun, plural** **adjective**

As I reached down to scoop up a pile, I saw a shiny _____ ring on the ground. " _____ !"
colour **exclamation**

I shouted. "We could be rich like _____ !" But then a(n) _____
celebrity **adjective** **animal**

with a mouthful of _____ stole the ring with its _____. We started to
food, plural **body part**

_____ the animal through the piles, scattering _____ everywhere. But it ran up a(n)
verb **noun, plural**

_____. Hoping the critter would drop the ring, we shook the branches,
adjective **noun**

but instead _____ fell on our heads and covered us up to our _____. Then the animal
something gross **body part, plural**

jumped onto the _____, where it seemed to _____ at us. Maybe that ring
part of a house **verb**

will buy the _____ a hibernation holiday in _____.
same animal **warm destination**



FUN STUFF MAKE IT CHEESY PITTA POCKETS

What you'll need

- Toaster
- Pittas
- Large handful of grated cheese (we used a mix of cheddar and mozzarella)
- Small handful of spinach
- ½ pepper
- 1 spring onion
- 4 cherry tomatoes
- A few basil leaves

Makes 4-5 pitta pockets

Ask an adult to help you when using a toaster and microwave.

Nom nom nom, this is yum!

Start here!



1

Pop the pittas into the toaster (or a microwave) for just 30 secs so they puff up. Leave to cool.



2

Meanwhile, chop up the vegetables and basil into small pieces, then mix them together with the grated cheese. Add a sprinkle of salt and pepper if you like.



3

Carefully slice the top off your mini pittas, as shown.



4

Stuff the pittas with the cheese and veggie mix. Make sure there's a bit of room at the top so the melted cheese doesn't ooze out. And don't overfill them – you want them to fit in the toaster!



5

Squeeze your pittas and place them upright in the toaster. Put them on a medium setting for 1–2 mins until the cheese has melted and the pitta is golden and crisp. Tuck in!

Try this
easy-peasy
veggie
meal!



FUN STUFF ANSWERS

Get Experimental!

MEMORY MASTERS

Test your memory, then learn a cool trick to improve it!

1. Ask a pal or parent to select **ten random objects** (without you seeing them) then **cover** them with a **scarf** or **towel**.



2. Remove the scarf and **look at the objects** for **30 seconds**. Then cover them back up and **try to remember** as many items as you can. How many can you recall?!

TOP TIP! You'll probably find it **tricky** to remember **all ten** objects. One brilliant technique to help you is to **link** the things **together in pairs** with a **little story**. For example, if you had a **watch** and a **toy octopus**, you could say that the **octopus** likes to wear a **watch** (right)!

The order of the objects doesn't matter, but it is important that each pair **overlaps** – so **pair 1** is **objects A** and **B**, then **pair 2** is also **object B** and **object C**, **pair 3**



is **objects C** and **D**, and so on.

So if the next creature you chose was this **home-made toy** (left), you could say the **octopus** went for a swim and met this sea creature. The **sillier** the connections, the

better you'll remember them later on!

TEST! When your silly story is **complete**, cover up the items. Ask your pal to **hold up** the **first object** from the story and see if you can **remember its pair**, then the next one, then the next. You should find it **easier** now!

How it works:

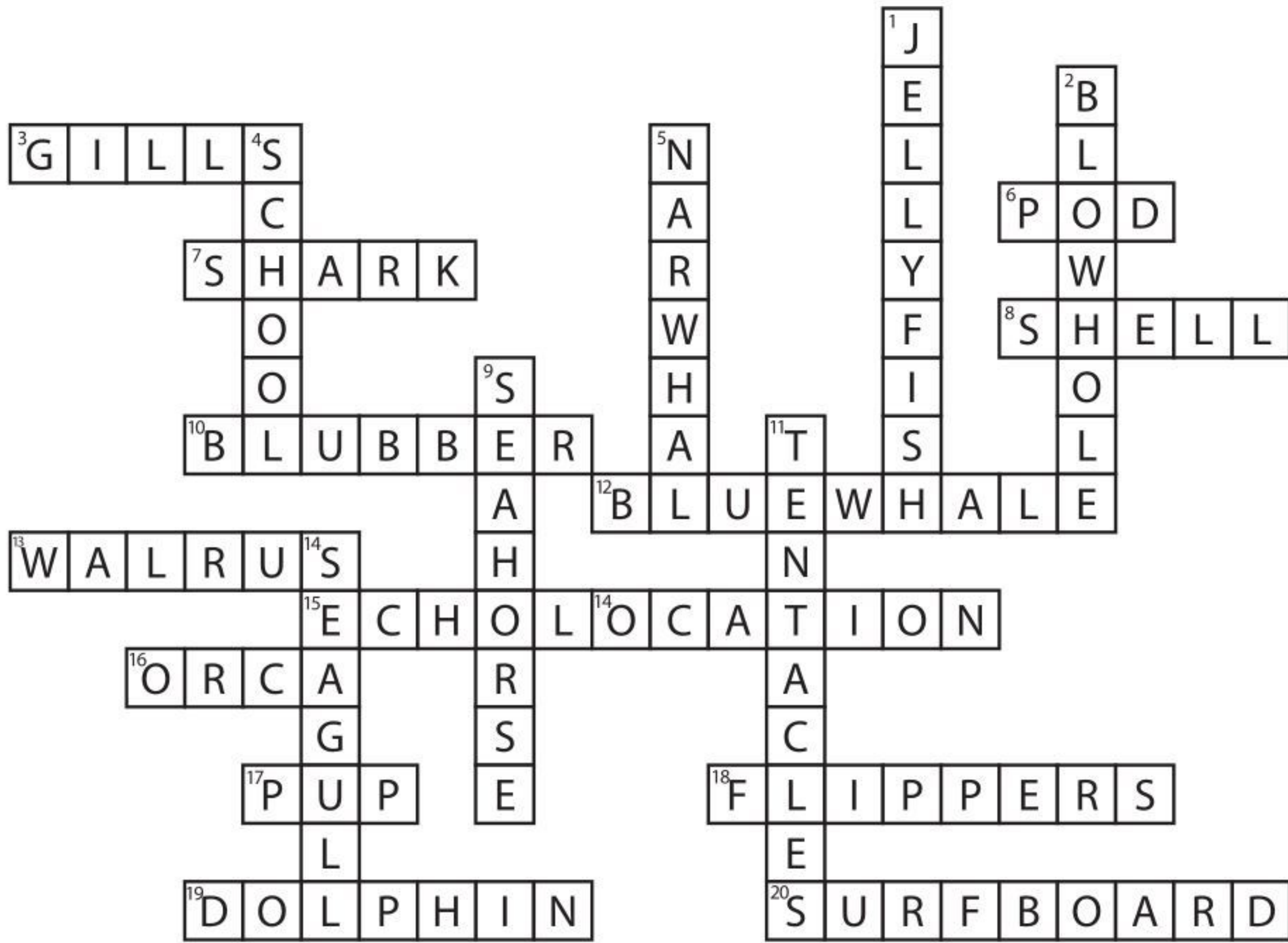
We struggle to store more than about **nine 'chunks'** of **information** at a time in our **short-term memory**. But by **pairing** items up, **two objects** can be considered **one 'chunk'**, so we can usually remember **twice as many** things. Because we're **overlapping** the pairs, when one 'chunk' of information is recalled, it triggers a connection to the next 'chunk', creating a **chain of memories**. Clever!

This fun home science experiment is from our pals at the **Royal Institution**. Head to rigb.org/families for more **exciting activities** and find out about the **Christmas Lectures** at rigb.org/christmas-lectures

TURBO TIME! (page 15)
The word is **vehicle**

BONKERS BEAST (page 21)
The animal mash-up has a **tiger's head**, **orangutan's body** and **duck's feet**

SEA CREATURE CROSSWORD (page 38)

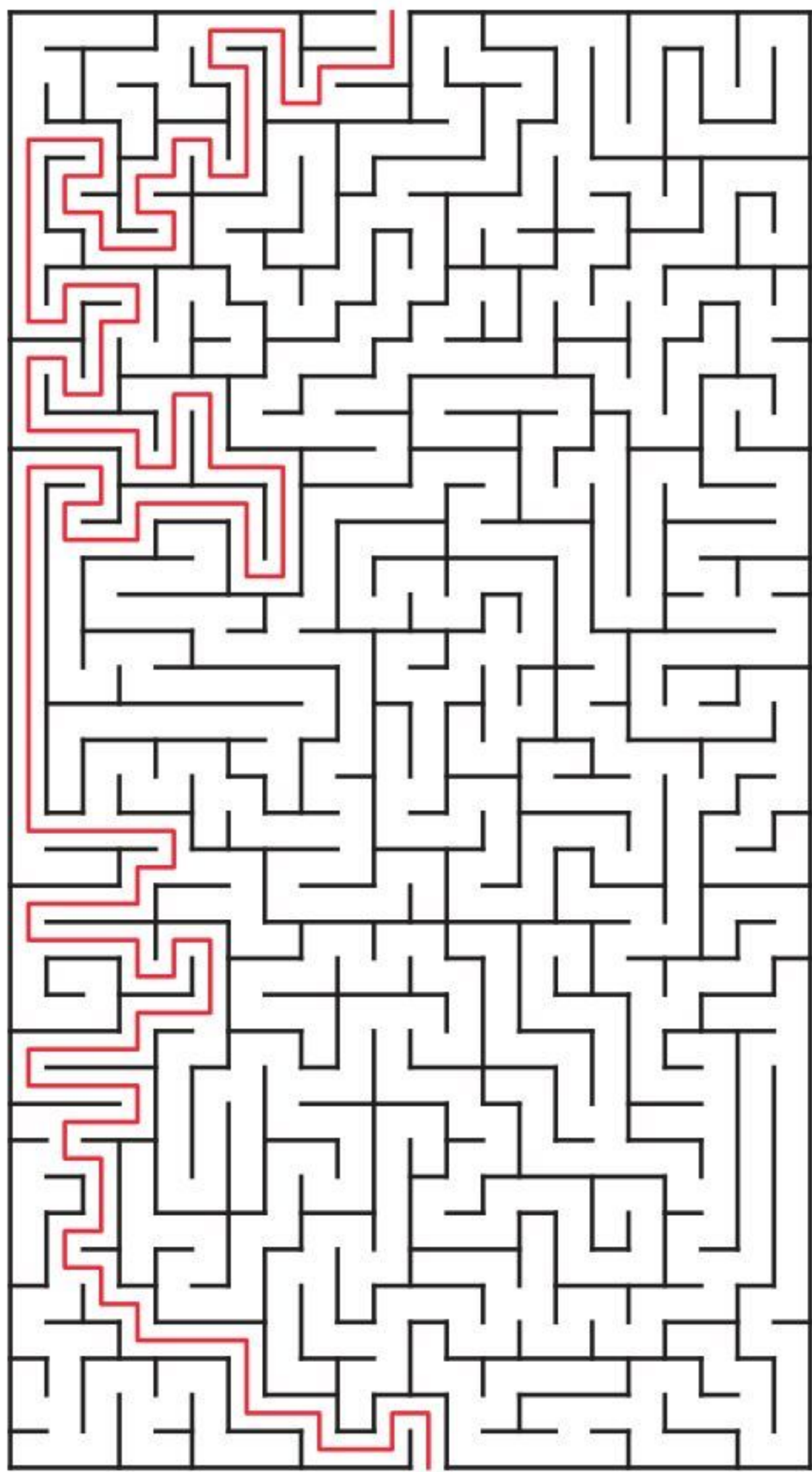


MISSING LETTERS (page 39)
GOGGLES, WETSUIT and **SNORKEL**

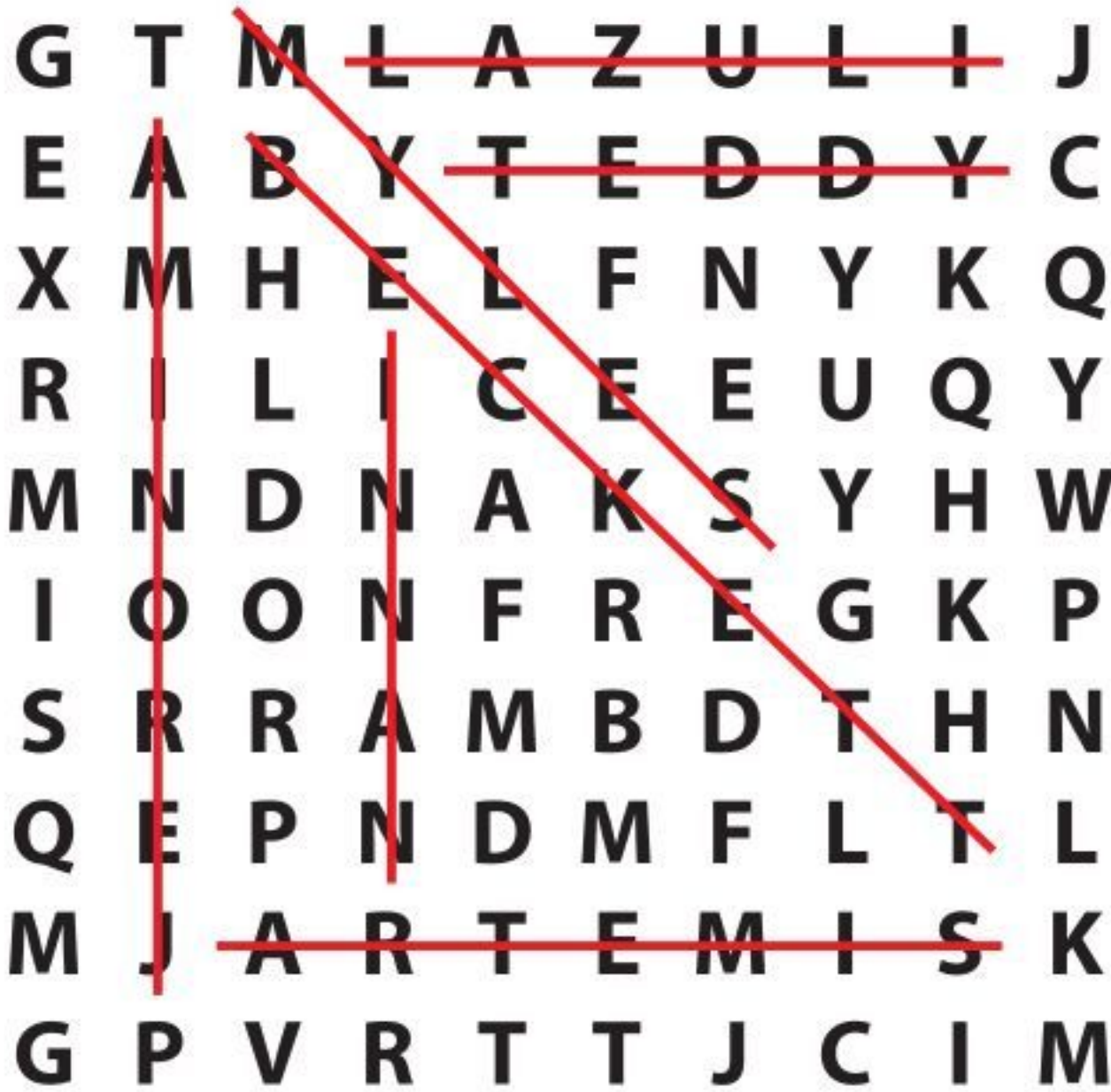
TURTLE TRUE OR FALSE (page 39)
1 False, 2 False, 3 True, 4 True, 5 True and 6 False

WATERY WATER GRID (page 39)
The ocean animal NOT in the grid is **dolphin**

HIGH SPEED GETAWAY (page 49)



FOWL FINDER (page 49)



WHAT IN THE WORLD (page 52)
Top row: pumpkin, hay bale, corn. **Middle row:** conkers, berries, apple. **Bottom row:** frost, autumn leaves, tractor. **Bonus:** Leaf me alone!



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The **first 50 new NG KIDS subscribers** this month will receive a copy of **Weird But True! 2020**. Cool!

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Have YOU
 won this year's
 Photo Comp?!

In next month's
NG KIDS...

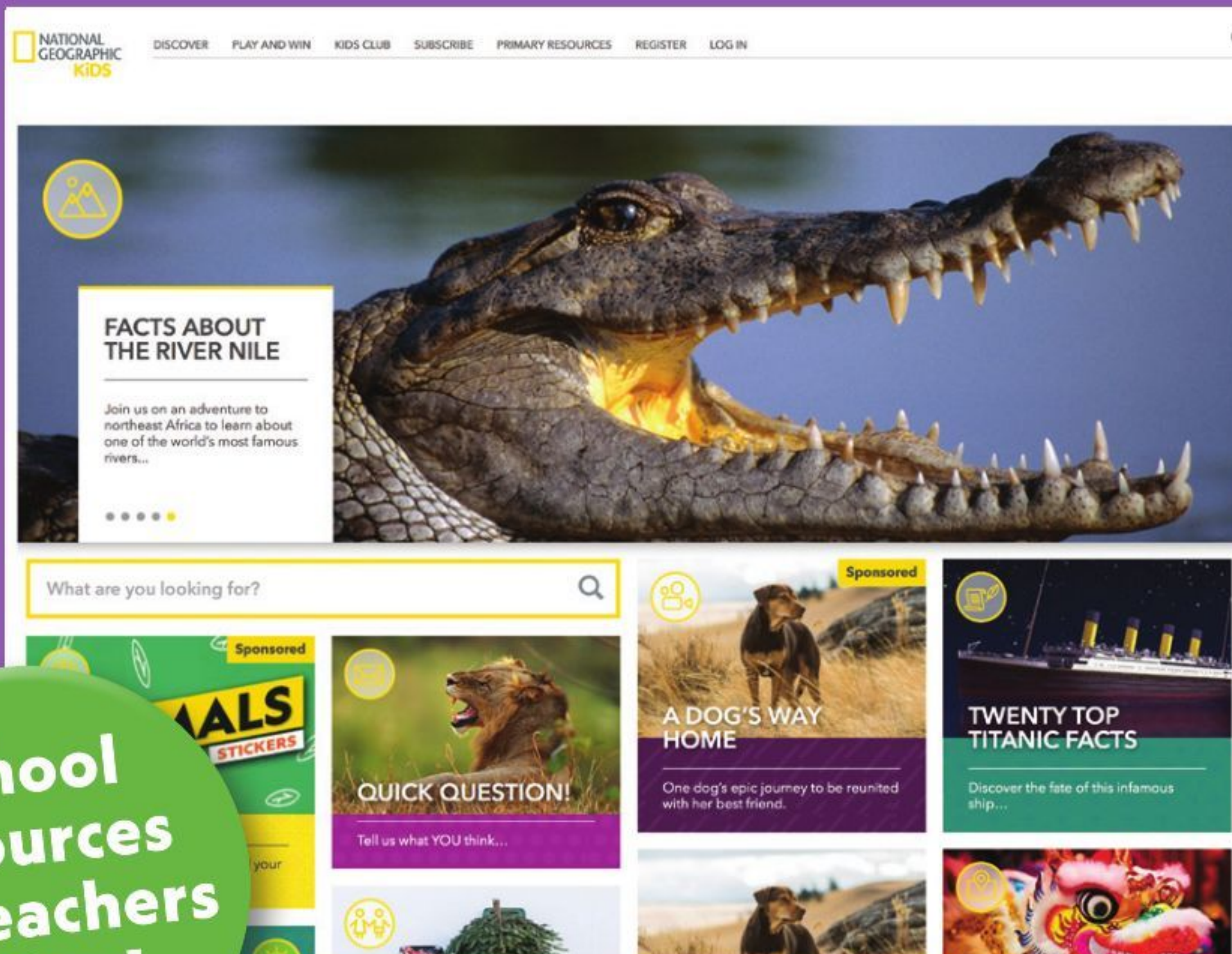
LIFE ON THE ICE!
 We get up close to
 emperor penguins

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 winners
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 2019
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IT DOESN'T GET MENTIONED IN YOUR HISTORY CLASSES,
BUT FROM JULIUS CAESAR TO ABRAHAM LINCOLN
EVERYONE IN HISTORY HAD TO GO TO THE LOO
BUT TOILETS DIDN'T ALWAYS LOOK LIKE THEY DO TODAY.

he **ROMANS** had **TOILETS** that were a very **PUBLIC AFFAIR**, with **BENCHES** that had rows of holes in them. You could **CHAT** away to your **NEIGHBOUR** as you went and even wipe your **BUM** with a soiled **SPONGE** on a stick. **GROSS!**

YUCK!

VIKINGS WERE
MORE **OUTDOORSY**.
THEY WOULD JUST
DIG A HOLE IN THE
GROUND AND **WIPE**
THEIR BOTTOMS WITH
MOSS AND **LEAVES!**

In the **MIDDLE AGES** castles had **HOLES** in the **WALL** called **GARDEROBES** that you would use as a toilet, letting everything **FALL DOWN** into the pit or moat below. It was worth being **CAREFUL** if you were walking down below.

FLUSHING TOILETS were invented in 1596 by Sir **JOHN HARRINGTON**. But they didn't catch on and people continued to use **CHAMBER POTS** instead. It wasn't until the **LATE 1800S** that **TOILETS** as we know them today **BECAME COMMON**.

Radical Radishes

In **MEXICO** each year at **CHRISTMAS** an unlikely **VEGETABLE** is **CELEBRATED**.

For more than a hundred years the people of **OAXACA** have celebrated **NOCHE DE RABANOS** ('Night of the Radishes') by **CARVING UP RADISHES**. As the holiday approaches, people or festive scenes are **CARVED** into the **RED SKIN** of the radishes. Shopkeepers also **ADVERTISE** for their wares.

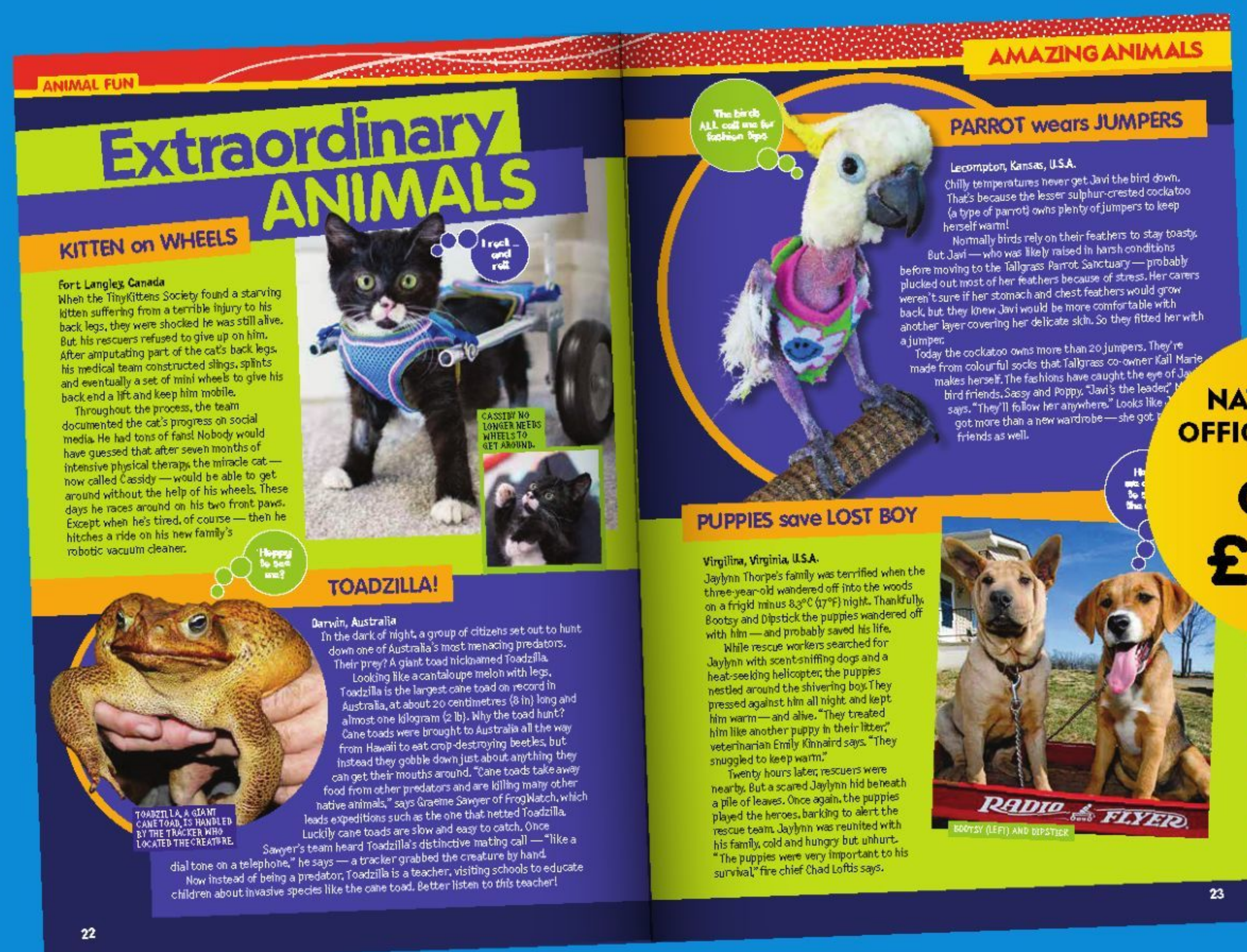
The most **BEAUTIFULLY** carved radishes are bought as centre pieces for Christmas **DINNER TABLES**. As the festival has gone on the radishes have got **BIGGER** and **BIGGER**.

Today radishes used may weigh as much as **3 KG (7 LB)**! There is even a **CASH PRIZE** for the most **IMPRESSIVELY DECORATED RADISH OF THE SEASON!**

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