



NATIONAL
GEOGRAPHIC

THE UK'S
BEST-SELLING
MONTHLY
CHILDREN'S
MAGAZINE!

KIDS

LYNX

THE
COMEBACK
CATS

AMAZING
ACCIDENTAL
INVENTIONS!



WASTE
NOT,
WANT
NOT!



30

WINTER
SPORTS
FACTS!



From £4
a month

DO YOU KNOW SOMEONE WHO LOVES DOLPHINS?

Adopt a dolphin today and you'll be helping to give the amazing dolphins of Scotland's Moray Firth a future

The survival of these intelligent and charismatic dolphins is threatened. This population is just under 200 individuals. Your support will help protect these individuals from threats including oil and gas exploration and production, chemical pollution and fishing. You will receive lots of stuff

including a personalised certificate with a picture of your adoption dolphin, a set of fun stickers and a colourful WDC badge. We'll keep you up-to-date on their daily lives through a great quarterly magazine SPLASH!, a monthly e-newsletter and you'll receive an email birthday and Christmas card.



YOU CAN ADOPT:

OR

RAINBOW

Rainbow is a friendly sociable female dolphin. She is a brilliant teacher to her sons, showing them how to catch the largest salmon!

CHARLIE

Charlie is a boisterous teenage dolphin. He enjoys racing around with his buddies Lunar and Flake, getting into all sorts of mischief.

NATIONAL GEOGRAPHIC KIDS

Happy New Year to all our readers old and new! We hope you had a fun festive time and haven't



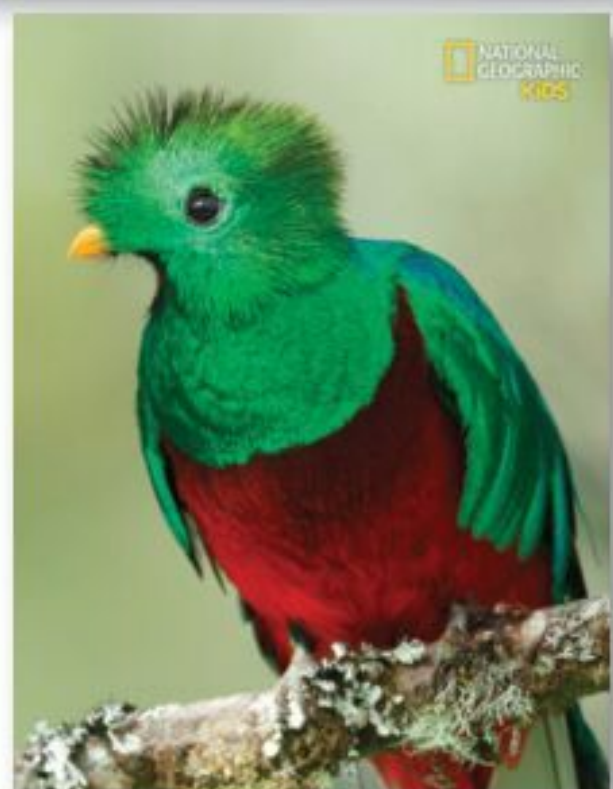
broken your resolutions yet! This year, the NGK team is going to try to create less waste. Turn to page 30 to find out why that's such an important issue!

How gorgeous is our cover star?! The Eurasian lynx went extinct in the UK over 1,000 years ago, but plans are afoot to bring it back! Could it really happen? Find out on page 12. Plus, on page 20, meet five inspirational teens whose bright ideas are helping the planet!

We've got all the usual puzzles, facts, crafts and jokes for you, too. Enjoy the issue!

The Nat Geo Kids team

FREE this issue...



4 POSTERS!

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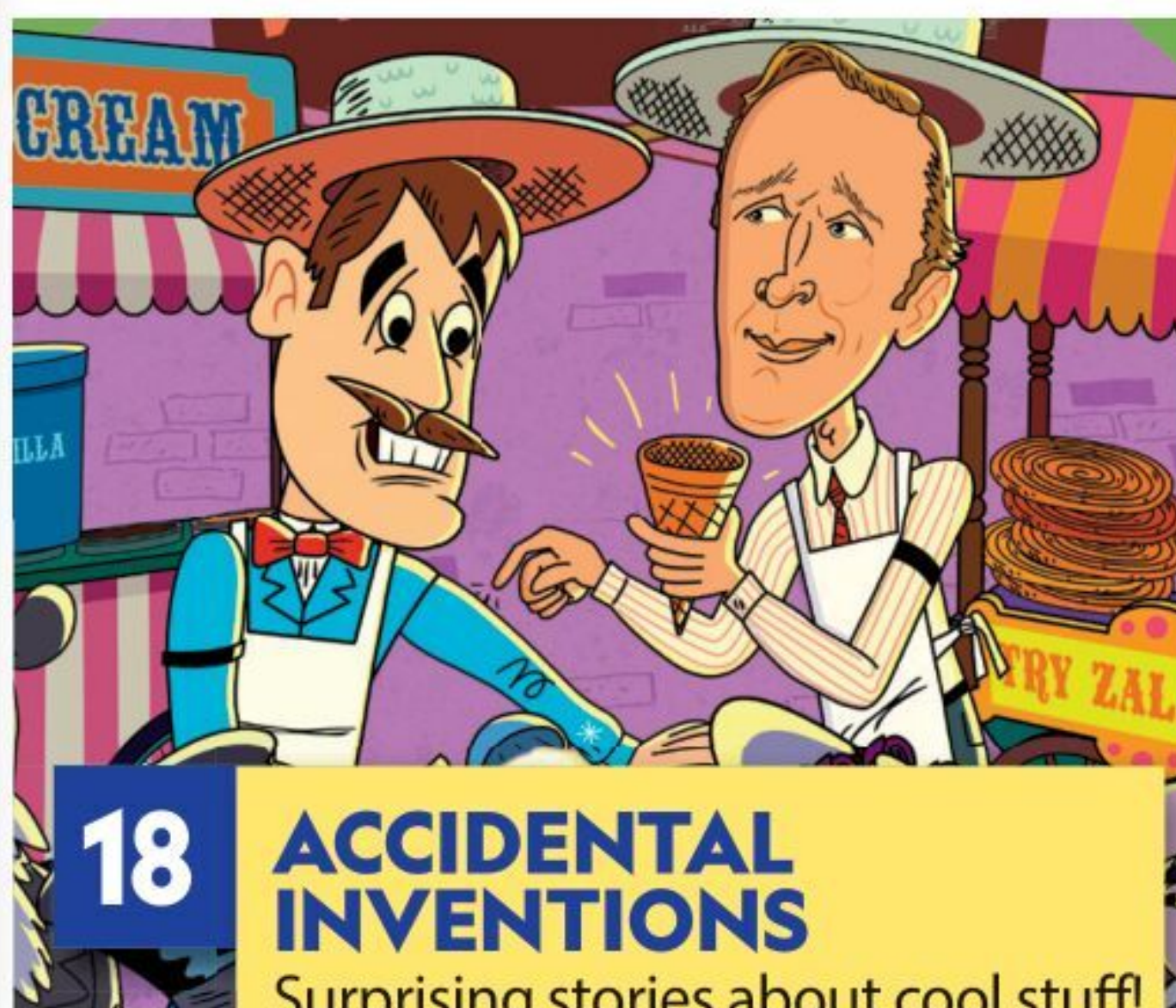


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Och aye the mew!

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Oi, no cheating!

The mosaic is 11 metres long, and almost 7 metres wide!

Roman villa unearthed!



An **Ancient Roman** house with a very fancy **floor** has been uncovered in a **field** in the **East Midlands**. During the 2020 lockdown, engineer **Jim Irvine** and his dad **Brian Naylor** were on a stroll in **Rutland** when they spotted some **unusual pottery** on the ground. Further investigation revealed it was from an **Ancient Roman villa** buried beneath the **field** dating back to around the **4th century AD**.

Archaeologists working on the site then discovered a magnificent **mosaic** depicting a scene from **The Iliad** – an **Ancient Greek poem** written in around **750 BC**. The experts think the massive artwork may have been on the **floor** of the villa's **dining room**, where guests could admire it. Wow!



Jim and Brian made the ancient discovery!

Australia's new national park!



The **biggest ever national park** has been declared in **South Australia**, after a **ten-year campaign** to protect the pristine area from **fossil fuel companies**. Hooray!

The newly named **Munga-Thirri-Simpson Desert National Park** covers around **36,000km²** of **desert** – that's an area **15 times larger** than the **Lake District national park** in **England**!

Home to **more than 900 species** of plants and animals, the huge reserve will protect wildlife like **thorny devils**, **wedge-tailed eagles** and **dingoes**, and preserve the desert's **rare temporary wetland habitats**, which only exist during the **rainy season**. Several **First Nations groups** have had **custodianship** over this intact **wilderness** for **thousands of years**, so this new park means their efforts won't be ruined. Great news!

Thorny devils will thrive in the new national park!



Watering holes like this appear after heavy rain



3 FAST FACTS!

CHINESE NEW YEAR!

On 1 February, people all over the world will welcome in the Year of the Tiger!

1 Also known as '**chunjie**' (the **Spring Festival**), or **Lunar New Year**, this celebration marks the end of the coldest winter days. It falls on the **second new moon** after **winter solstice**, and lasts for **15 days**, until the next full moon.

2 During celebrations, **fireworks** are set off to **scare away bad luck**, and children are given **money** in **lucky red envelopes**. It's traditional for people to pray to **gods** and their **ancestors** to ask for a **good harvest** in the next year.

3 According to the **Chinese Zodiac**, **2022** is the **Year of the Tiger**. People born in this year are said to be **daring**, **brave** and **independent** – just like the majestic cat. They're also believed to have a strong sense of **justice**. Roar-some!



The **Dragon Dance** is often performed at **Chinese New Year celebrations**

GET INVOLVED!

Big Garden Birdwatch



House sparrows were the most spotted bird in 2021 - for the 18th year in a row!



Join more than a **million wildlife-lovers** around the UK by taking part in this year's **Big Garden Birdwatch!** Just head out into your **garden, balcony or local park** on **28-30 January** and spend an **hour** counting all the birds you see **land on the ground.**

When you've finished spotting, report your findings on the **RSPB website** to help scientists understand how garden birds are doing. Around **17 million birds** were counted last year - more than ever before!

● Fly over to **[rspb.org.uk/birdwatch](https://www.rspb.org.uk/birdwatch)** to sign up, and to discover helpful spotting tips, bird ID guides and more!

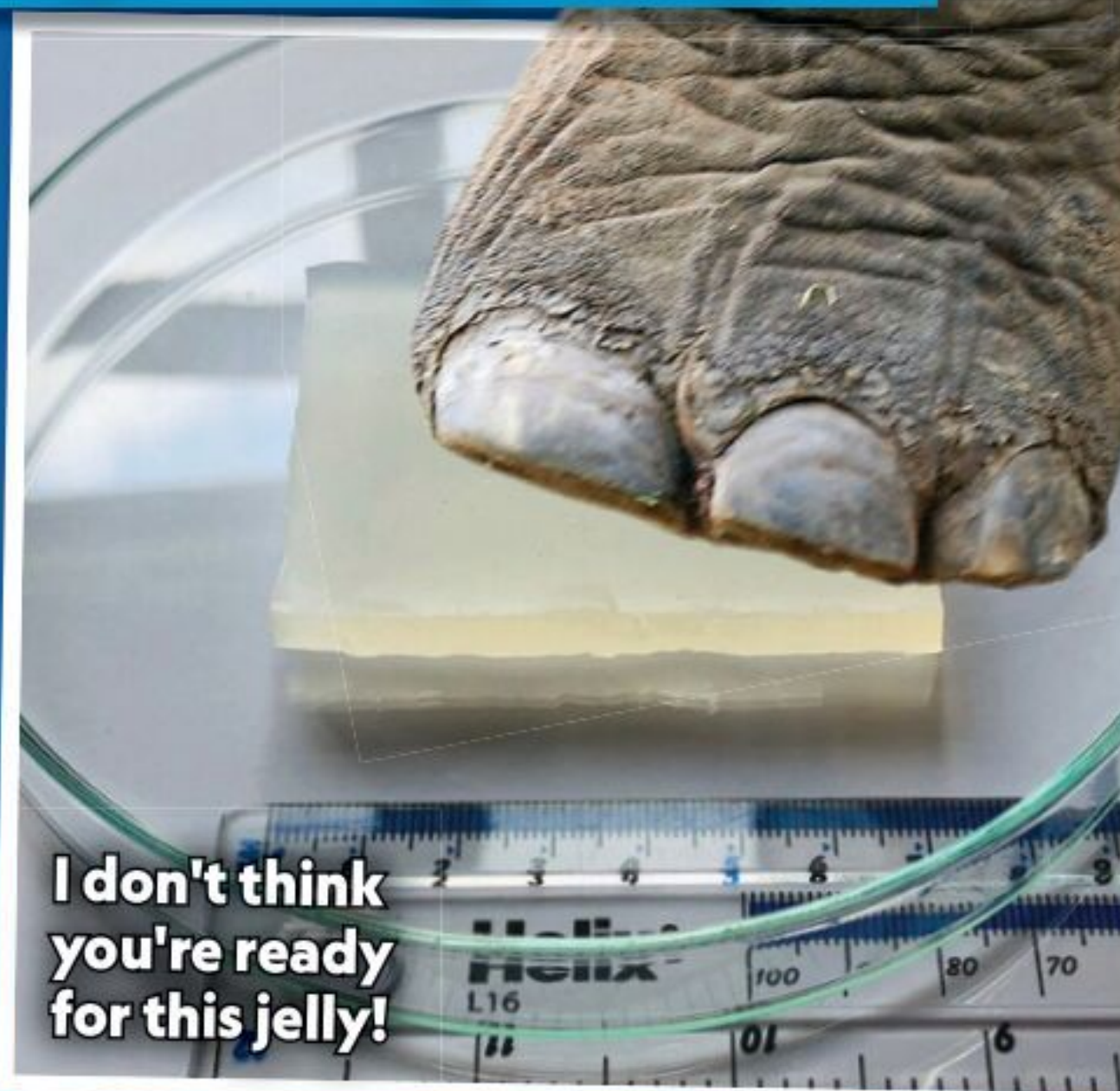
Unsquishable super-jelly!



If an **elephant** trod on a **jelly**, there would be an almighty **SPLAT**, right?! Well, not **THIS** special **super-jelly!** Created by researchers from the **University of Cambridge** the **soft-yet-strong hydro-gel** can withstand being **run over by a car** (or stepped on by a **6 tonne African elephant**).

When the squishy substance is **compressed by strong forces** it acts like **ultra-tough shatterproof glass**, holding together without breaking. But as soon as these forces are removed, the super-jelly reverts back to its **soft and stretchy original shape**, ready to be used again.

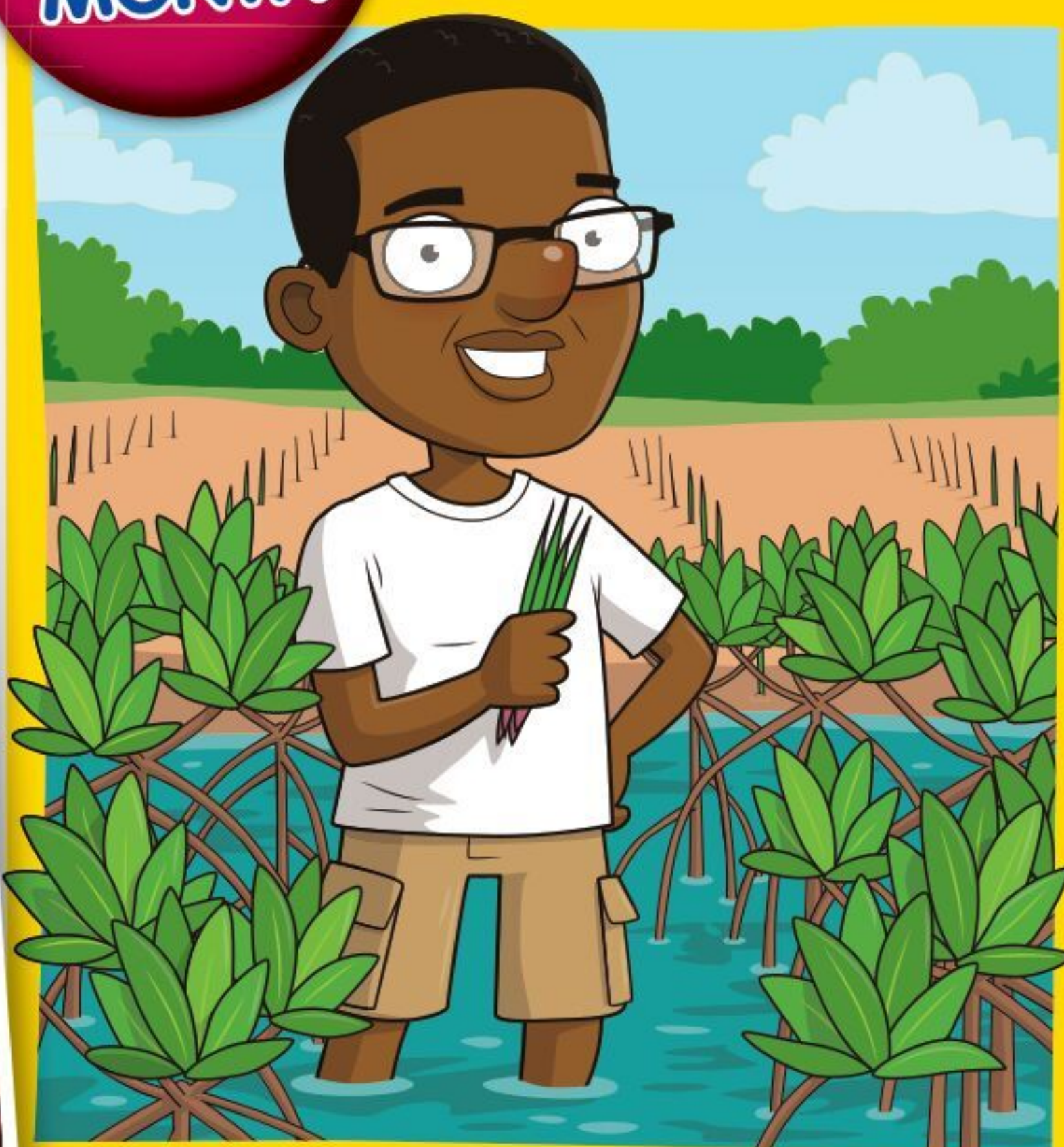
This is the **first time** that a soft material like this has been able to withstand such pressure, so scientists are hoping to use it in future **robotics and medical tech!**



I don't think you're ready for this jelly!

HERO OF THE MONTH

CONSERVATIONIST MOMODOU 'INKEH' BAH!



This month's hero is **Momodou** from **The Gambia** in **Africa**, for his amazing work **restoring his country's mangrove forests**. Mangroves grow in salty water by the coast and **protect rural villages** from **flooding** by reducing the impact of **storm surges**. Villagers also use the trees as a place to harvest **fish**. But recently, many trees have **died** due to **drought**, leaving communities **vulnerable** to rising waters and extreme weather.

Momodou decided it was time to help these damaged forests. So he designed the '**Community Action Platform on Environment and Development**' (**CAPED**), an initiative that helps bring local people together to **plant trees**.

Since then, **CAPED** helpers have planted a whopping **3 million mangrove trees**, creating more than **5km of forest!** This will keep villagers safe and provide habitats for animals.

MAKE IT A DATE

Key events for your diary!

JAN 20



Penguin Awareness Day

Find fun penguin facts at **[natgeokids.com/uk/penguins/](https://www.natgeokids.com/uk/penguins/)**

JAN 24



International Day of Education

Celebrate schools today!

JAN 25



Burns Night

Sample some Scottish supper in honour of the great poet!

JAN 31



International Zebra Day

Say 'yay' for these stripy animals!

FEB 2



World Wetlands Day

Check out your local marsh!

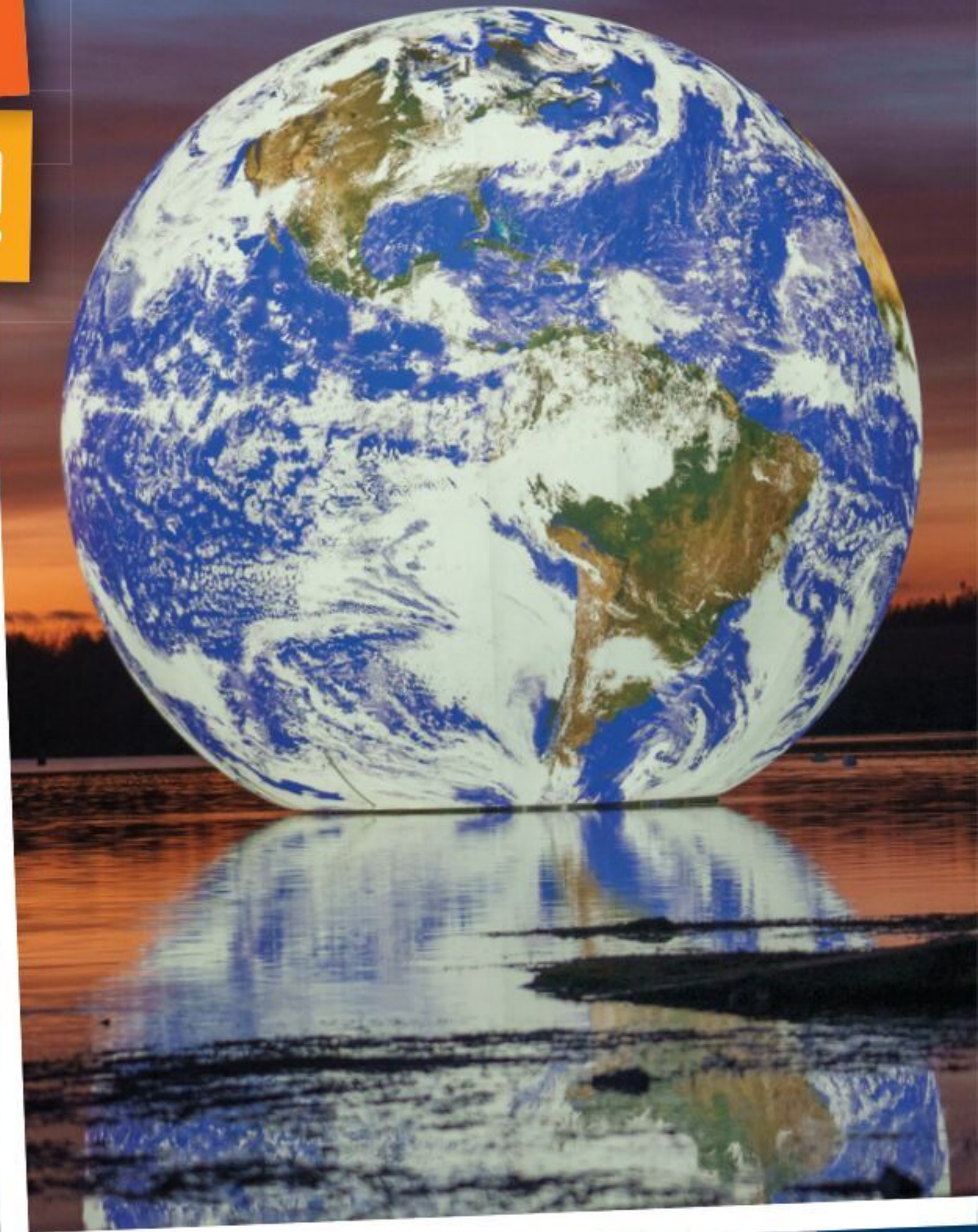
WACKY WORLD!

Check out the planet's strangest pictures...



Watery world!

Artist **Luke Jerram** has made this remarkable replica of planet **Earth** to highlight the **climate crisis**. He hopes that the **10m-wide** model, called **Floating Earth**, pictured here in November bobbing up and down on **Pennington Flash** near **Wigan**, will also make viewers feel the **awe** experienced by **astronauts** when they look down at Earth from **space**. Awesome idea!



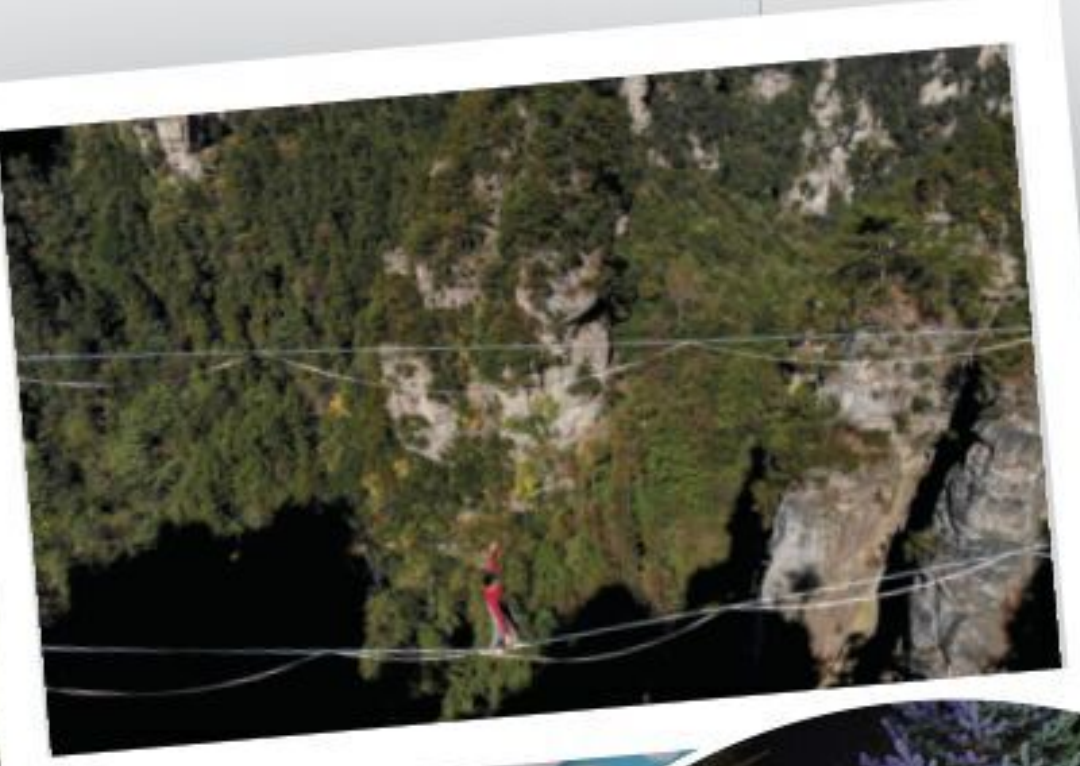
Art de Triomphe

If you thought wrapping Christmas presents was exhausting, spare a thought for **Vladimir Yavachev**, who wrapped up the entire **Arc de Triomphe**! The vast monument in **Paris, France**, was covered in **25,000m²** of **recyclable fabric**, held together with **3,000m** of rope. His uncle, artist **Christo**, dreamed up the idea in **1961**.

Ready, set... slackline!



Have you ever walked along a **slackline**? Well, try (er, actually, *don't* try) doing it **1,000m** above the ground! These fearless folk were snapped recently **racing** across **200m-long** slacklines strung between **sandstone cliffs** in the **Wulingyuan Scenic and Historic Interest Area** in **Hunan, China**. Breathtakingly bonkers!



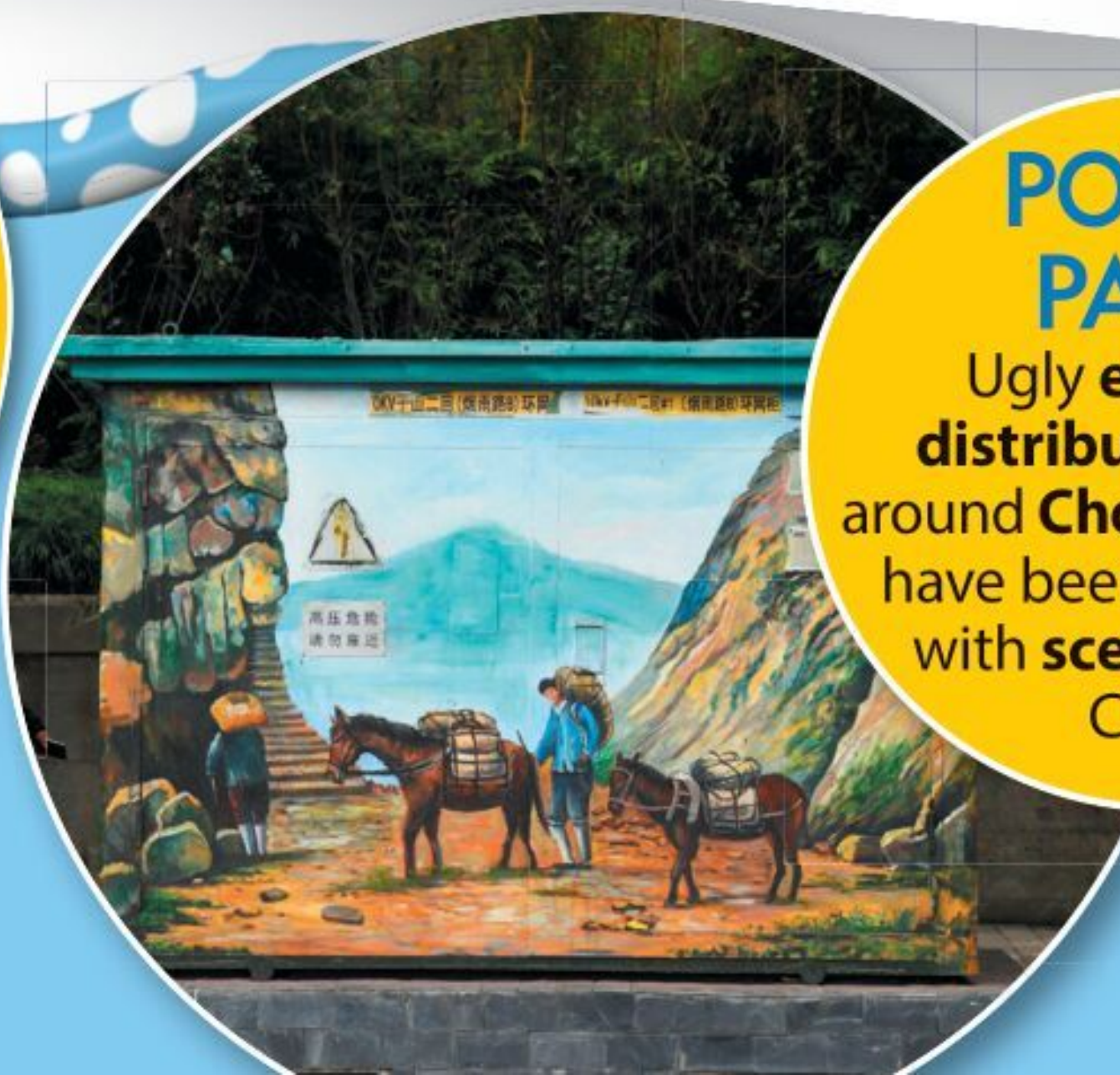
BIRD LIFE!

Meet **Peanut Butter** and **Jelly**, the lucky **turkeys** 'pardoned' by **US President Joe Biden** for **Thanksgiving**. Not only were the birds **saved from being eaten**, they were also given their own **suite** at a **posh hotel**!



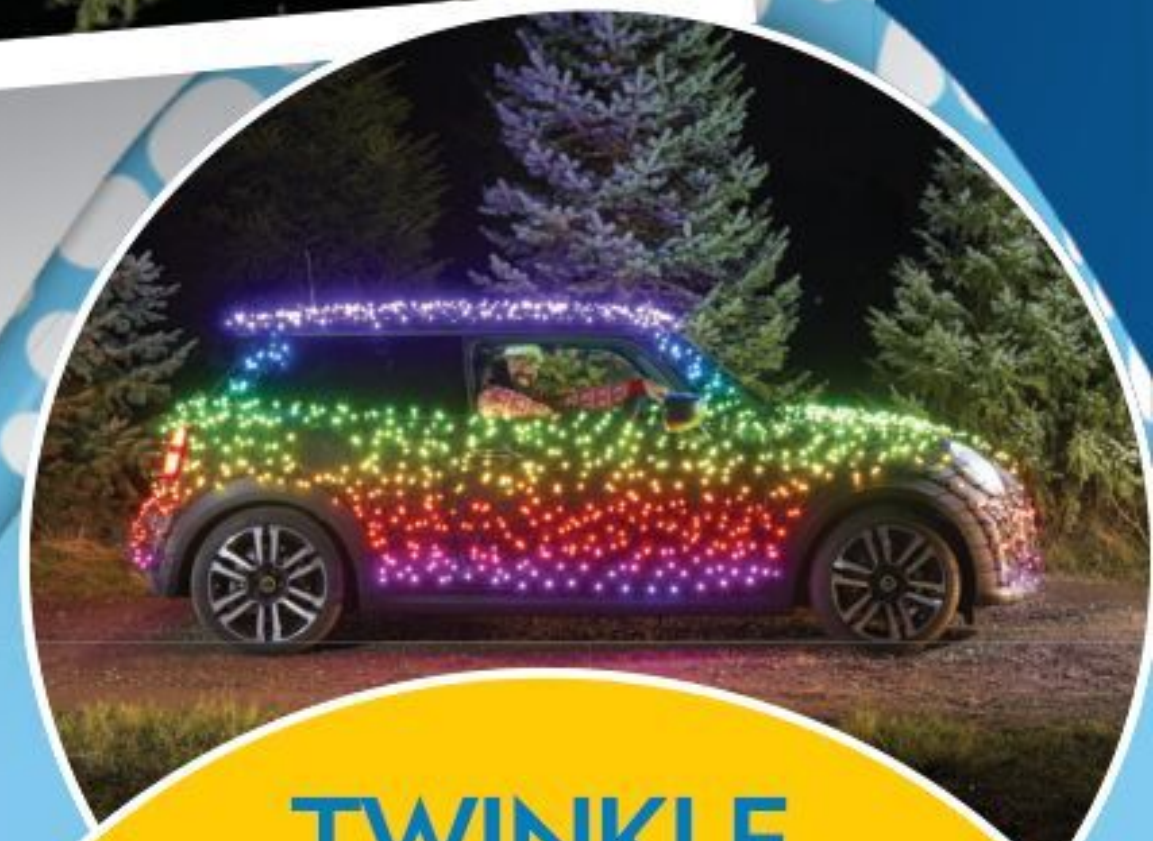
POWER PAINT

Ugly **electricity distribution boxes** around **Chongqing, China**, have been spruced up with **scenic murals**. Clever!



TWINKLE TWINKLE LITTLE CAR!

Nico Martin took his **Mini** out for a spin around **Britain** in the run-up to **Christmas** to raise money for **charity**. He'd covered it in **2,000 festive fairy-lights**!



MATTHEW MCCONAUGHEY REESE WITHERSPOON SCARLETT JOHANSSON TARON EGERTON TORI KELLY NICK KROLL BOBBY CANNAVALE
HALSEY PHARRELL WILLIAMS NICK OFFERMAN LETITIA WRIGHT ERIC ANDRÉ CHELSEA PERETTI AND BONO

ILLUMINATION PRESENTS
SING 2



ILLUMINATION
ENTERTAINMENT

IN CINEMAS JANUARY 28

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WHAT'S UP?

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



SING 2

Join go-getting **koala Buster Moon** and his **all-singing, all-dancing friends** from the **New Moon Theatre**, as the **animal performers** launch an ambitious plan to put on **megashow** in the entertainment capital of the world – the glamorous **Redshore City**.

The only way they can pull off their dream **gig** is by persuading **rock legend Clay Calloway** to perform. The trouble is, he's shut himself away for over a decade after the **loss of his wife**. Can the power of **music** help heal his **broken heart** and coax him back into the **limelight**?

● In cinemas 28 January



Can (L-R) Gunter, Buster Moon and Ash pull off the best gig ever?!



PUFF: WONDERS OF THE REEF

It's the **Great Barrier Reef** as you've never seen it before – through the eyes of a **baby pufferfish**! In this beautiful new **documentary film**, journey with little **Puff** as he learns to survive his **first year** of life in one of Earth's most diverse **ecosystems**. Every surface is covered with weird and wonderful **creatures**, and **drama** unfolds in ways that are too **fast**, too

slow or too **small** for **human eyes** to see. And for Puff, who began life tinier than a **human fingernail**, there are hidden **dangers** amongst the colourful coral...

● On Netflix now



Follow little Puff on a big journey!



BRITAIN'S BEST YOUNG ARTIST

This **February**, some of the UK's most **creative kids** will showcase their **artistic skills** in a bid to be crowned **Britain's Best Young Artist**!

Each day, **three talented contestants** will create art in different disciplines – from **cartoons** and **portraits** to **sculpture**. Their work will be judged by amazing artists, including **graffiti artist Aske** and **Nathan Wyburn**, who's known for his **carpet art**! Contestants will even be tasked with making special pieces for people like **telly presenter Lindsey Russell** and **race car driver Jamie Chadwick**. But who's got the skills to walk away with the top prize?

● Catch it on **CBBC** and **iPlayer** from **Monday 7 February**



Who will be named Britain's Best Young Artist?



POKÉMON LEGENDS: ARCEUS

In this sprawling new **Pokémon** game, players travel back in time to the beautiful **Hisui region**, where the mission is to **build** the region's very first **Pokédex**!

This is the first time that a **Pokémon** game has been truly '**open-world**', so you'll be able to wander around the **charming towns**, **snowy mountains** and **vast meadows** as you please. You can even use your **Poké-pals** to take to the **sky** and the **sea**! Maybe you'll meet new regional forms like **Hisuian Growlithe**, or encounter the **mythical Pokémon Arceus**. Just make sure you keep enough **Poké Balls** handy...

● Play it on **Nintendo Switch** from **28 January**



Get ready to explore the fantastic Hisui region



Enter ALL comps at natgeokids.com/ by 14 March 2022

KEY



Website



Event



Movie



Game



Book



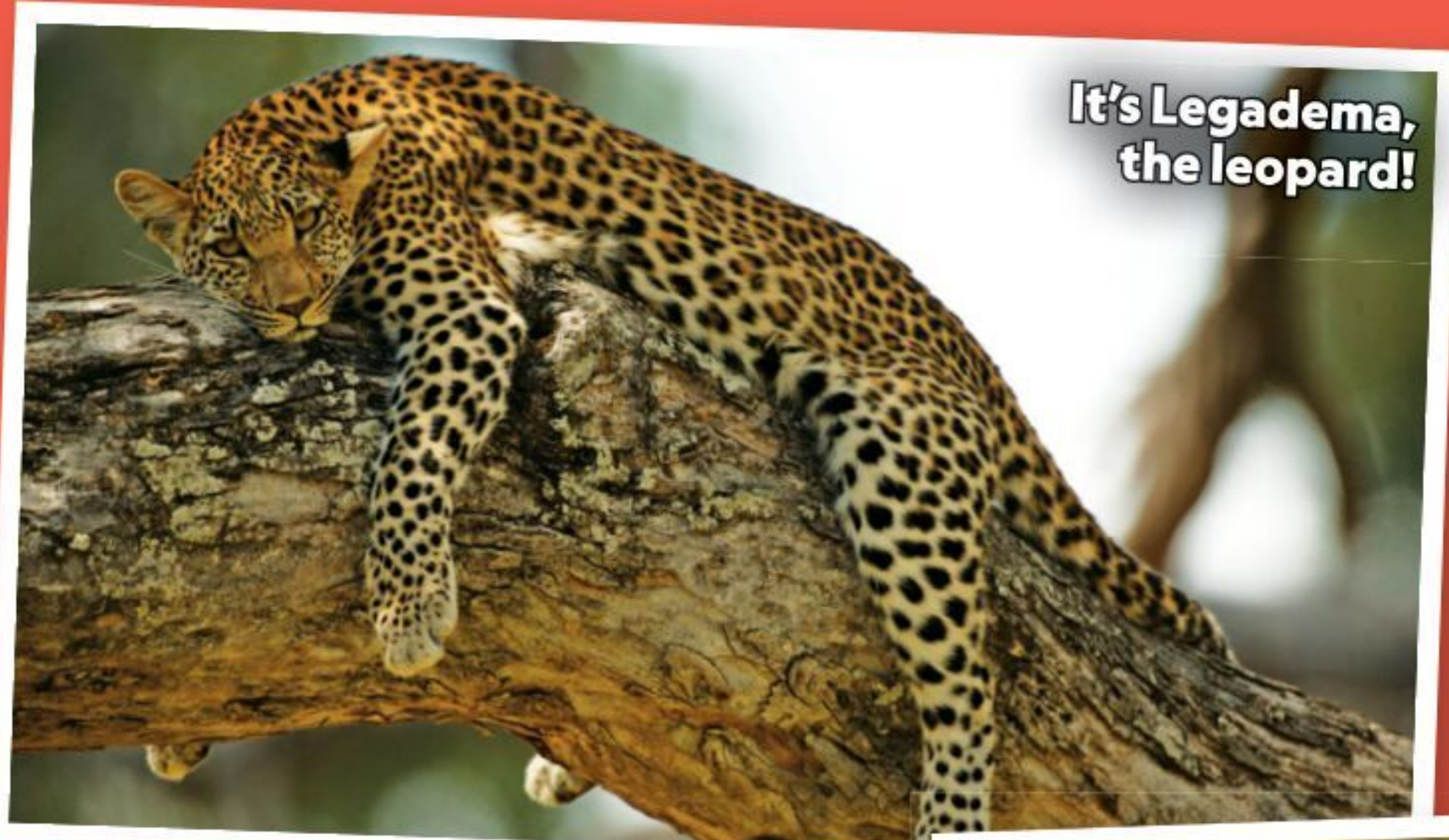
TV/Streaming

BIG CAT WEEK

Get ready for a **whole week** of TV dedicated to the world's most **fearsome felines**! Nat Geo Wild's **Big Cat Week 2022** will take you to some of the world's most **remote regions** – from **scorched deserts** to **lush forests** – revealing the lives of these beautiful big cats. Through **stunning documentaries**, viewers will be given a **rare peek** into the lives of these astonishing **predators**, witnessing their **struggles** and **hard-fought victories**.

Take a look at two of the **roar-some** shows below...

● **Big Cat Week** will run **7-13 February** on **Nat Geo Wild** with **brand-new documentaries** starting from **8pm, Monday to Friday**



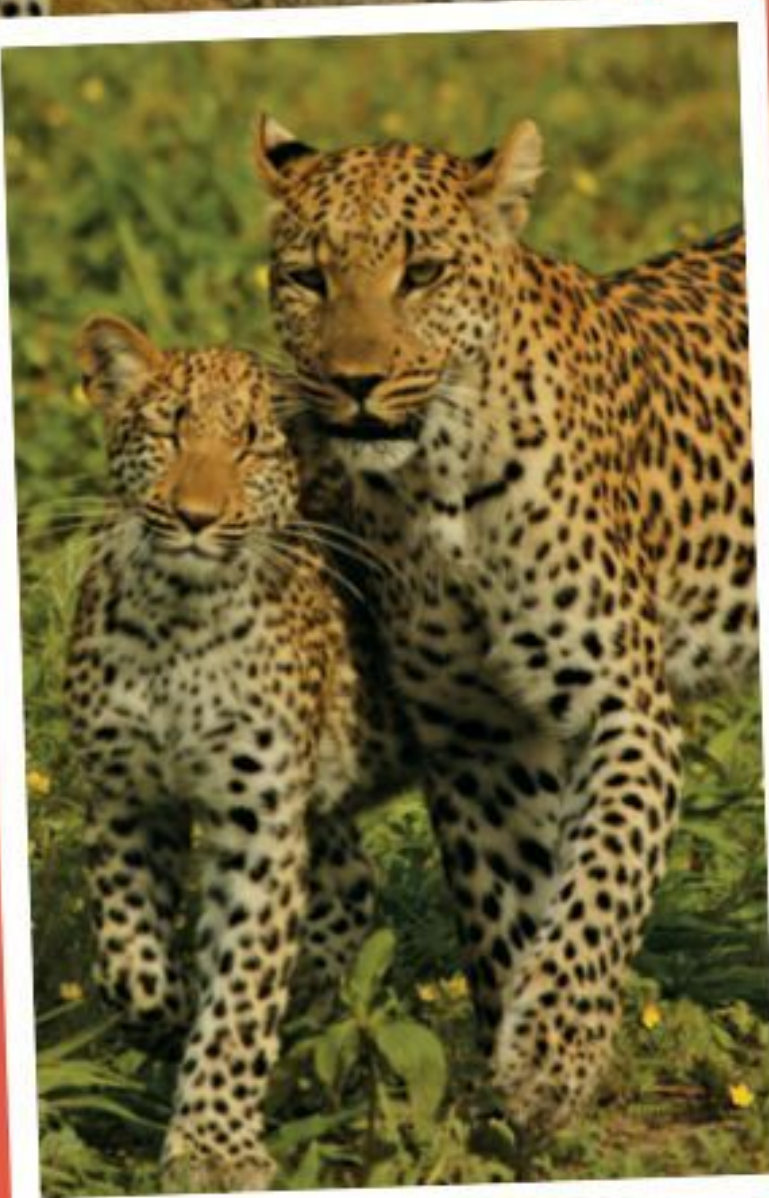
It's Legadema, the leopard!

EYE OF THE LEOPARD

Meet a little **leopard cub** named **Legadema** (meaning **Light from the Sky**) after she's born in **Botswana's Okavango Delta**.

Follow her remarkable **transformation** over **three years**, as she survives her **vulnerable** early days (where she **can't even open her eyes!**) and slowly develops her **hunting instincts**, becoming one of the most **feared predators** stalking the African **floodplain!**

● **Wednesday 9 February, 9pm**



Get up close to cute lion cubs in Botswana!

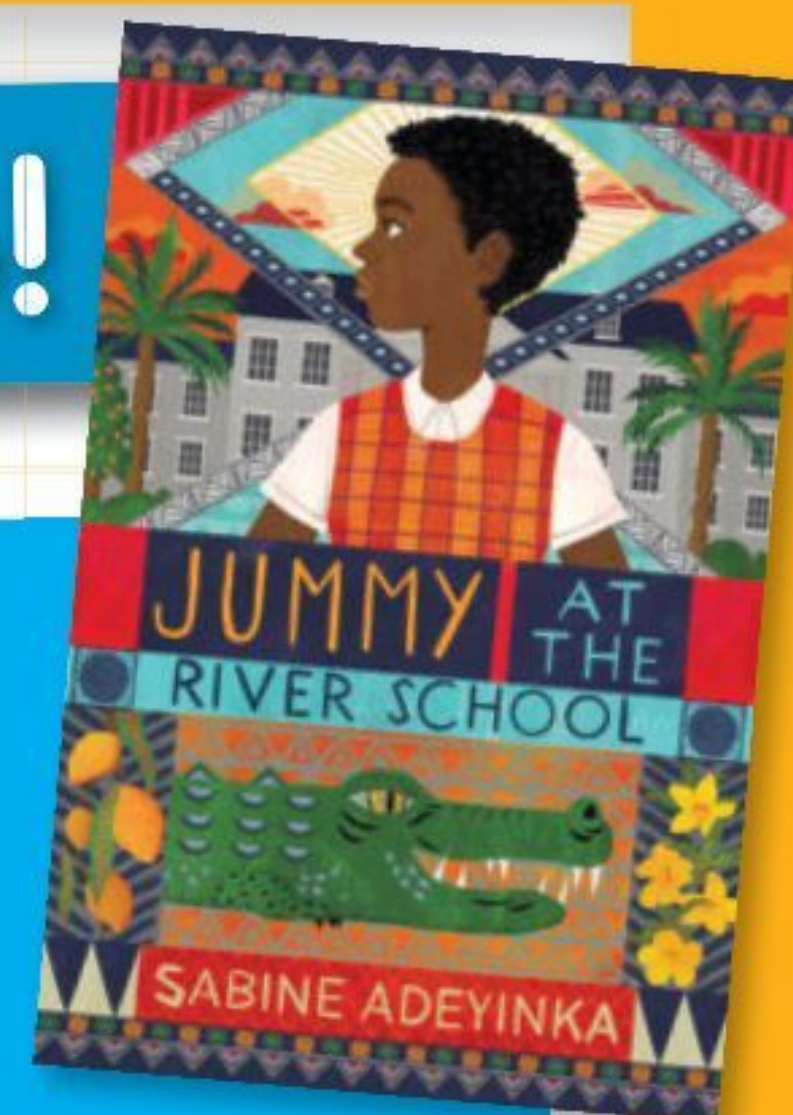


NEW BOOKS!

Jummy At The River School

Sabine Adeyinka

Step back in time to vibrant **1990s' Nigeria** in this **joyful story** about **privilege** and the power of **friendship**. Life is looking pretty sweet for **Jummy** when she wins a place at Nigeria's **best boarding school**. The **Shine-Shine River school** has **friendly new girls**, **sporting prizes** and even **midnight feasts!** The only downside is that her **best bud Caro** can't join her. But when her less-fortunate friend arrives at the school to **work** rather than study, Jummy must gather her new mates together to help...



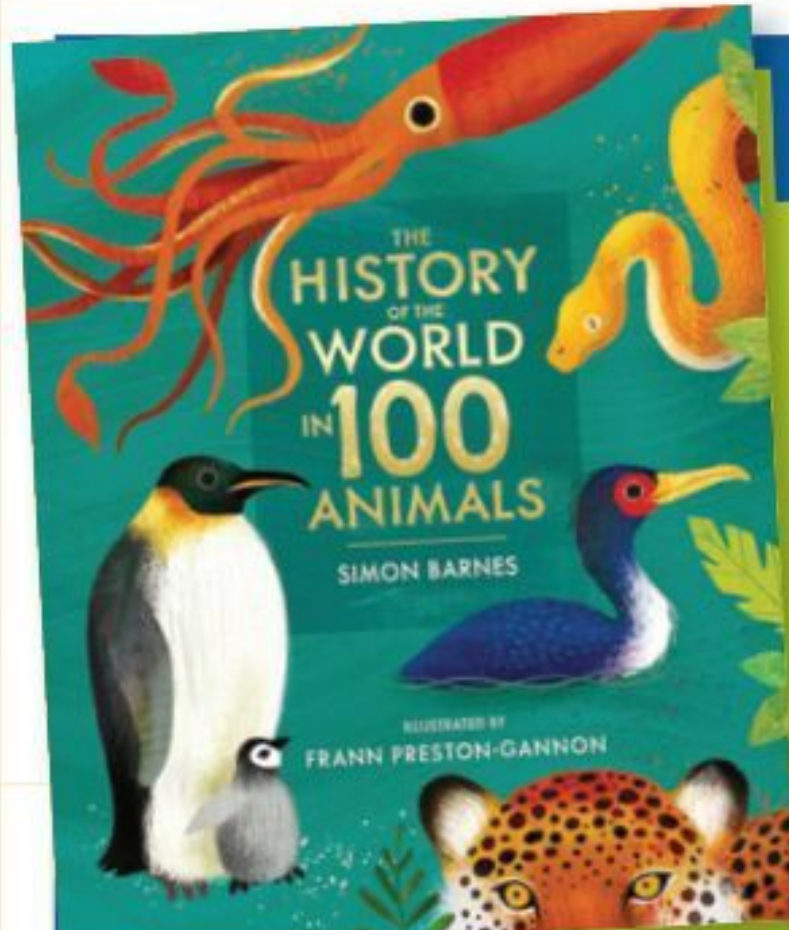
FACT BOOK OF THE MONTH

The History Of The World In 100 Animals **Simon Barnes**

Animals have had a **HUGE** impact on the course of **human history**. In this fab **fact-filled book**, explore how **100 creatures**, from **giant squid** to little **locusts**, have affected us and the way we view the world. You'll

learn about the **bees** that **pollinate** our food, the **chimpanzees** that share over **98% of our DNA** and much more!

A silkworm's cocoon contains **900 metres** of thread!



WIN!

Five readers will grab **both** of these brilliant books. For your chance to win, head to **natgeokids.com** and answer this easy question...

Q Which of these is the capital of Jamaica?
a) Kingston b) Queenston c) Dukeston

Enter online by 14 March!

BIG CAT ODYSSEY

Over **30 years ago**, **National Geographic Explorers Dereck and Beverly Joubert** embarked on a quest to learn more about **big cats**. In this documentary, witness their adventures as they work through **droughts, floods** and the dead of **night** to study their beloved **lions and leopards**. Watch as they uncover what makes these incredible animals **unique** and learn how **people** are putting big cats in **danger**.

● **Tuesday 8 February, 9pm**



Learn about these territorial felines

SLEUTHING FOR
SLIME MOULDS

UK photographer **Andy Sands** is a man on a **mission**: to **hunt down** and **take pictures** of **slime moulds**! These **tiny, blind, brainless organisms** have existed practically unchanged for at least **100 million years**! "I'm captivated by their **strange forms, wonderful colours** and **amazing lifecycles**," Andy explains of his obsession.

The bizarre blobs seen here are the '**fruiting bodies**' of a slime mould called ***Lamproderma scintillans***, which grows on rotting **holly leaves**. Just **1mm** in length, the species was "**painstakingly difficult**" for Andy to find. He spent **weeks crawling** around **cold wet woodlands** until he finally struck gold. "Suddenly, there it was," he says. "A line of **tiny jewel-like blobs** on a holly leaf. It was worth all the effort!"

To take photos of the **microscopic** moulds, Andy uses a special lens and combines hundreds of images together. Other pictures in his series show the blobs bursting open to release their spores!

● Check out more of Andy's slime mould shots at andysands.co.uk/project/slime-moulds





Return of the Missing

L
Y
N
X



How a majestic
wild cat might
make a comeback
in Scotland...



The **UK** and **Ireland** were once covered in **forests** full of **wolves**, **brown bears** and **lynx**. But around **1,500 years ago**, people began **chopping down trees** to create **pastures** and **farms**. This **deforestation** left **predators** with **fewer places to hide** – and **fewer prey** to stalk.

Times became tough for shy **Eurasian lynx**. The lack of food and habitat forced these wild cats towards farms, and they began pouncing on **sheep** and **goats** – which made them **public enemy number one**.

The last lynx in the UK and Ireland lived a **life of danger**, **hunted** by farmers who wanted to **protect their livestock**, or for the **fur trade**, and the cats finally became **extinct** here in around **700 AD**.

But in recent years **conservationists** have proposed bringing the Eurasian lynx back to **Scotland!**

SECRETIVE LYNX

The Eurasian lynx is one of the **widest ranging** of the **four lynx species**, slinking through forests from **western Europe** across **Russia** and into **Central Asia**. But they **struggle to survive** wherever humans have destroyed their habitat.

These cats rely on **stealth**, good **vision** and super **hearing** to stalk **rabbits**, **rodents**, **birds**, and **deer** four



Where Eurasian lynx live



Female Eurasian lynx, like this one in Norway, live alone unless they're raising kittens

The average home range for these lynx is huge – up to **248 km²** for males and **133 km²** for females.

times their size. But without a **thick cover** of **trees** and **shrubs** to hide them, the lynx have difficulty ambushing prey. And in some places, the cats have **disappeared**.

Wildlife conservationists in **Switzerland**, **Germany**, **France** and other countries have taken Eurasian lynx from elsewhere in their range and **reintroduced them** to **protected forests**, allowing their populations to grow. They're hoping that they may one day be able to do the same thing in **Scotland**.

Returning the cat would do more than just boost the numbers of this once-threatened species. Some say a win for the lynx is a **win for the forest** – and the **planet!**

There are about **8,000 Eurasian lynx** living across **25 countries** in Europe.

Conservationists say that **Scotland's Cairngorms National Park** could be an ideal home for reintroduced Eurasian lynx



Turn over to find out more about these incredible cats!

BALANCING ACT

What would happen if you **opened the bonnet** of your parents' car and **started removing parts**? It wouldn't take long for the engine to sputter or belch smoke, because the car was **missing a crucial bit**. The **landscape of Scotland** went similarly out of whack when the Eurasian lynx **died out**. Without cats and other predators to hunt them, **deer populations skyrocketed**. The deer nibbled on the **leaves of trees and bushes for food**, and soon **large areas of the Scottish forest disappeared** because it couldn't grow fast enough to keep up with the deer's appetites. **Birds and rodents** that relied on the forest floor for **shelter** fell prey to **foxes**, which lynx also hunt.

"Lynx do a lot more than just live their own lives," says **Steve Micklewright**, from **Trees for Life**, a charity that's working to **rewild the Scottish Highlands**. "They affect **all the nature** around them."

When Steve's team **plant new saplings**, they often have to put up **fences** to stop deer from **nibbling them**. But Steve thinks that if lynx were roaming the woods, the cats would keep the deer from **overgrazing** on the young trees, helping Scotland's forests make a **comeback**.

Restoring forests in places like Scotland can help provide **more space for wildlife** and even **fight climate change**. "When you restore forests, **you lock carbon away**, get an amazing habitat for more **wildlife**, and you also get more nature for **humans** to enjoy," Steve says. "Everybody wins!"

CAT CHAT

A recent poll found that about **75 percent of the local population** supported **restoring Scotland's forests** – but people are **less excited** about **bringing back lynx**. That's mostly because **farmers are worried** that these wild cats will **eat their animals**. Although scientists say that's **unlikely** – because lynx prefer forests, and farm animals live

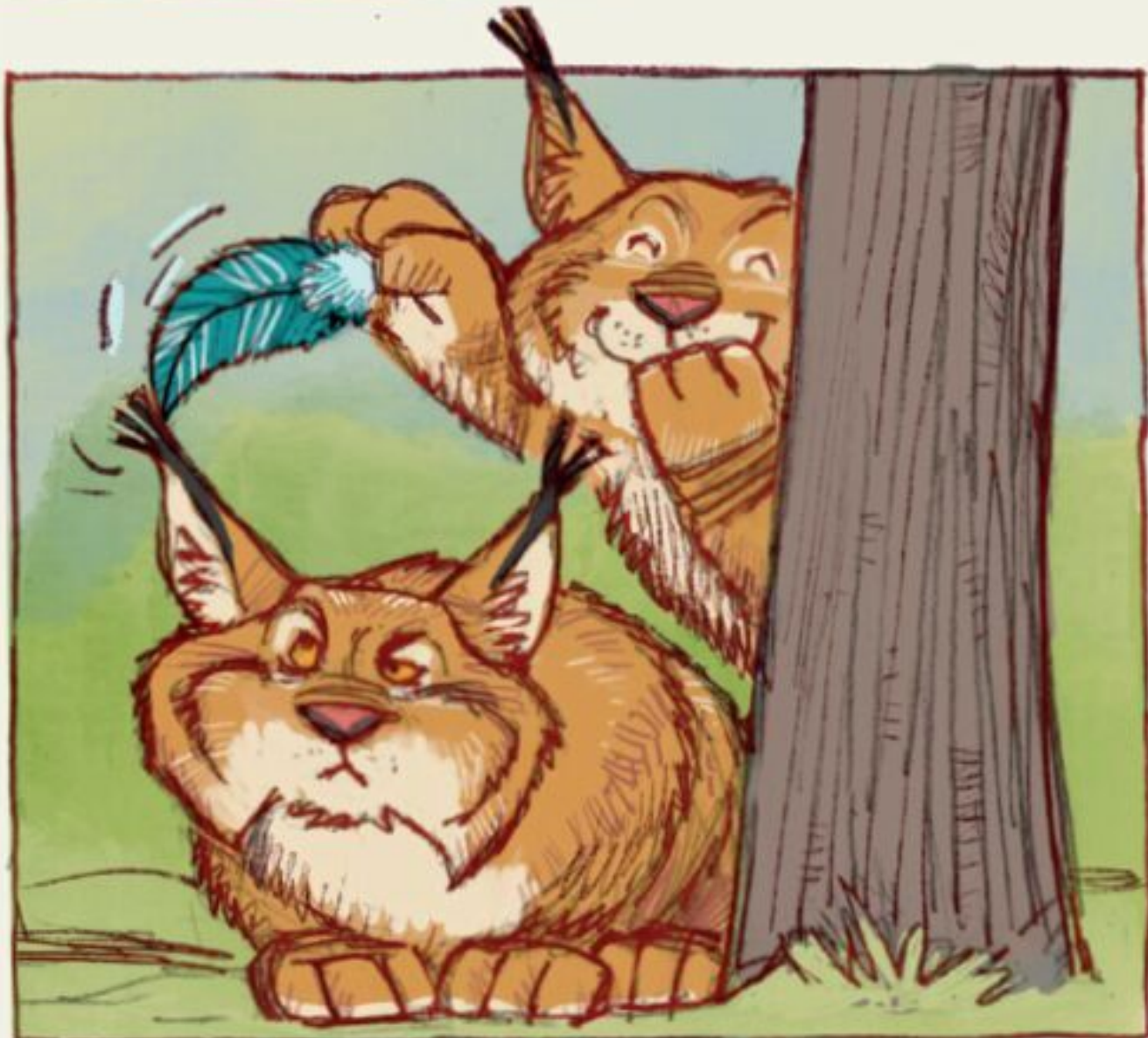
Forests around the world are cut down to make room for farms and towns, and to sell wood for products like furniture and toilet paper. In 2020 alone, the planet lost as many trees as would cover an area larger than the whole of the UK!

Eurasian lynx, like this one in Norway, often rest up in trees

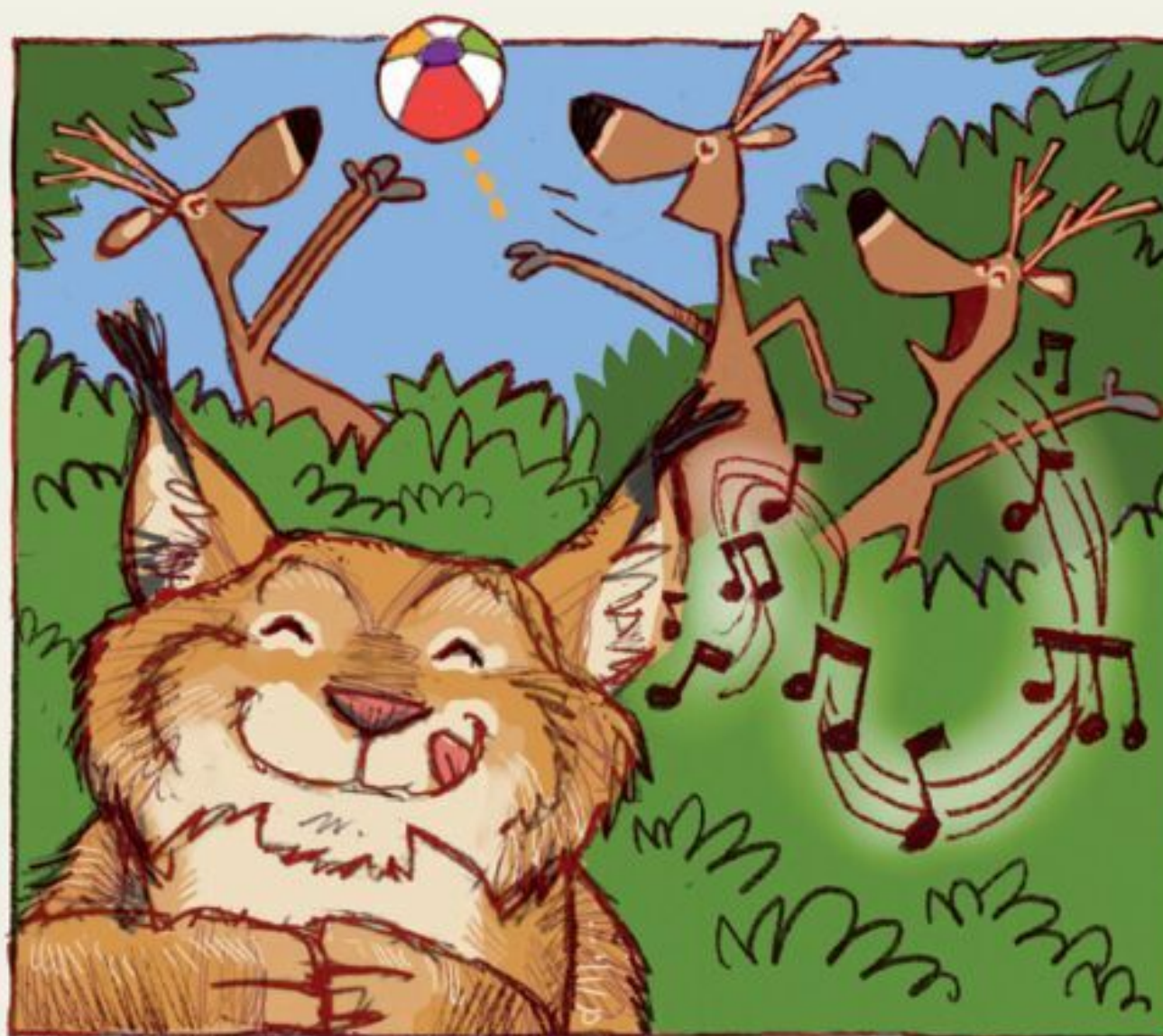
A Eurasian lynx is about the same size as a Labrador dog.

I'm All Ears

Scientists aren't completely sure why all four species of lynx have 2.5cm-long black tufts on the tips of their ears, but they've got a few theories...



Some scientists think the tufts work like a **cat's whiskers**, allowing a lynx to **feel things** brushing against the top of its head.



Other experts think the tufts might improve the lynx's **hearing** by channelling **sound waves** into their ears, sort of like a **furry funnel**.



Another theory is that the long ears help the cats **communicate**, telling other lynx when to back off by **twisting** and **flicking** the tufts.

in **pastures** – conservationists want to address their **concerns** before reintroducing the cats.

That means **interviewing hundreds of people** who might be affected by lynx living near them, such as **sheep farmers, hunters, timber growers** and **land managers**.

"I want to **better understand people** and their **relationship with wildlife**," says **David Bavin**, from the **Vincent Wildlife Trust**, who's leading the **Lynx to Scotland** study. "If people feel they **aren't being listened to**, then a lynx conservation project just won't work."

For example, previous proposals have **offered farmers money** for each animal that the lynx might take. But David says that doesn't consider things like how much **farmers care about their animals**, or if they feel **their way of life** is being **disrespected**. So, to give a potential reintroduction the best chance for success, conservationists want to make sure **everyone is heard**.



Thick fur and big paws help Eurasian lynx survive in their snowy homes

Comeback critters!

Bringing Eurasian lynx back to Scotland is still a way off – but it wouldn't be the first species to bounce back in the UK...



EURASIAN BEAVER

A small group of **beavers** appeared in a **river in England** after they hadn't been seen in the country for **500 years**. Now these busy beavers are helping solve problems like **biodiversity loss** and **flooding** by building their dams.



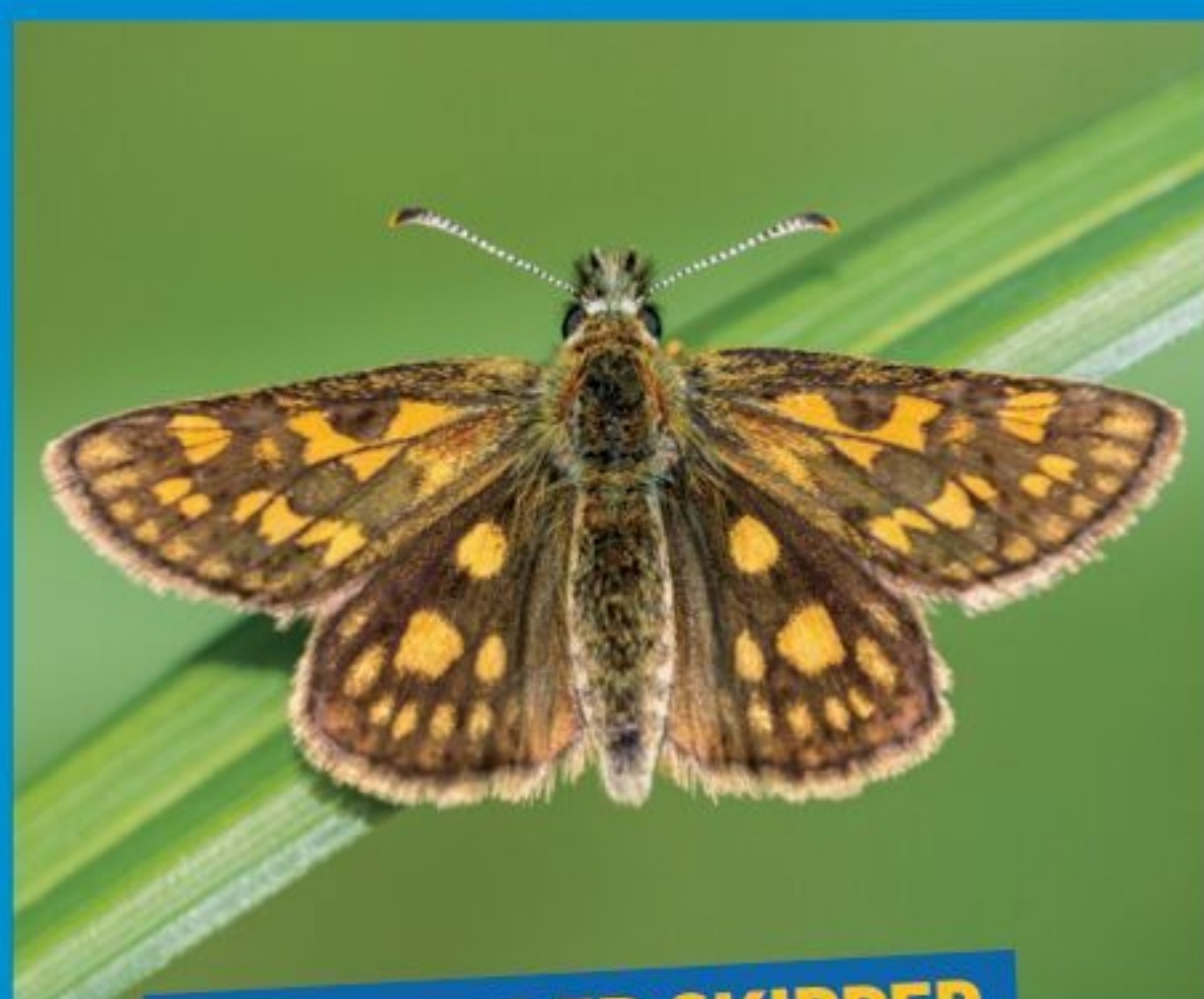
WHITE-TAILED EAGLE

This **bird of prey** vanished from England's coast about **240 years ago**, but in **2019** conservationists collected **six chicks** from **Scotland** and released them in the **Isle of Wight**. Now they're soaring once again!



RED SQUIRREL

Habitat loss and competition from **grey squirrels** (which *aren't* native to the UK and Ireland) pushed out local **red squirrels**. But conservationists are battling to help protect the rare rodents.



CHEQUERED SKIPPER

Habitat loss caused this **butterfly** to die out in **England 45 years ago**. But in **2018**, **42 chequered skippers** from **Belgium** were released into **Rockingham Forest in Northamptonshire**. Their population has continued to grow – suggesting that the **forest is healthy**, too. Brilliant!



PINE MARTEN

Pine martens reintroduced to England's **Forest of Dean in 2019** are helping control invasive **grey squirrels** – good news for **red squirrels** and the **forest**!

Read more about Eurasian lynx over the page!

“**Lots of people** need to **agree** that **reintroducing lynx** is the **right thing to do**,” says Steve Micklewright. “So we’re **taking our time, talking to people**, and trying to find the right place where **lynx would be welcome**.”

The **Lynx to Scotland** study ends in **February 2022** and, if the results show that there is **community support** for the carnivores’ return, the next step would eventually be for scientists to bring a **few lynx** from **other parts of Europe** to **Scotland**, fit them with **tracking tags**, and **monitor where they go** and **what they do** in a **five-year study**. Researchers would also look at how the **landscape changes** – for instance, if **more young trees sprout** when lynx prey on the **leaf-nibbling deer** – and whether the lynx **hunt any sheep**.

LAND OF THE LYNX?

Recent research indicates that **mainland Scotland** has enough habitat and prey to support about **450 lynx** – and conservationists predict that reintroduced cats would **restore balance** to the wild forests and help more new trees grow. Bringing back this top predator to the landscape **won’t be easy**, but conservationists think it’s worth it, **no matter how long it takes**.

“Lynx belong here,” says Steve. “They were here in the past and it’s **our fault that they’re gone**. We have a home in Scotland waiting for them, and we’re just so excited to bring them back.”

Eurasian lynx mothers give birth to up to five kittens at a time.

A Eurasian lynx kitten climbs a tree in Germany



Meet the Family

The Eurasian lynx is one of four species of lynx. Meet the other members of this feline family...



EURASIAN LYNX



CANADA LYNX



IBERIAN LYNX



BOBCAT

Home Sweet Home

Western Europe, Russia and Central Asia

Canada, Alaska and many northern U.S. states

Mountains of Spain and Portugal

Most of North America

Fave Food

Woodland deer

Snowshoe hare

European rabbits

Rabbits, rodents and other small animals

Claim to Fame

Largest lynx

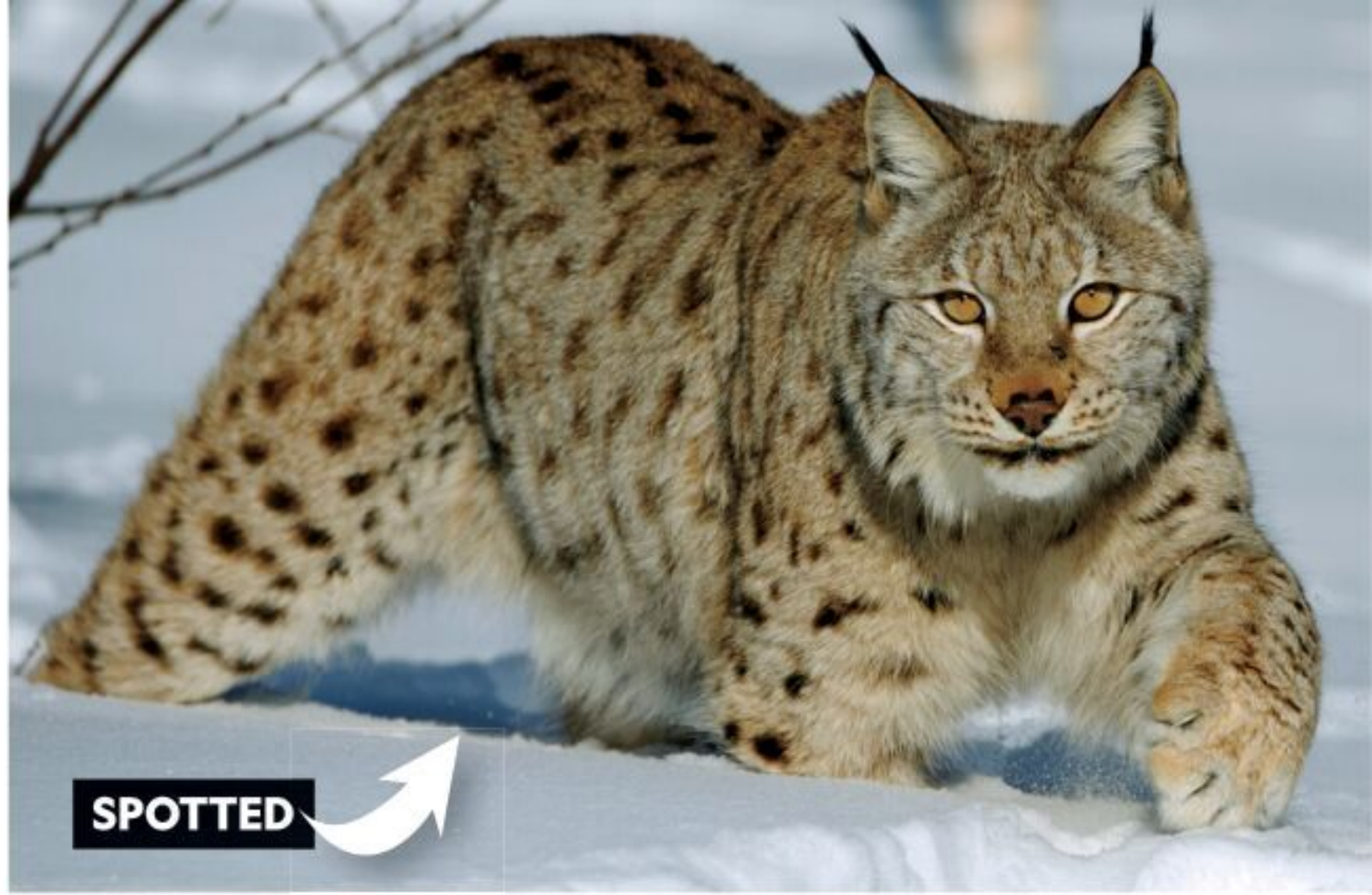
Furriest lynx

Rarest lynx

Most adaptable lynx



These cats' coats can be striped, spotted or solid.



SPOTTED



STRIPED



SOLID



FROM 'OOPS!' TO Awesome

How these unlikely inventors
turned a mess into a success!

THE INVENTION: CHOCOLATE CHIP COOKIES

THE DATE: 1938

THE DETAILS: Ruth Wakefield was trying to make something delicious for her guests at the **Toll House Inn** in **Whitman, Massachusetts, USA**. But she ran out of **cooking chocolate**, the key ingredient for her chocolate cookies. So, in a hurry to melt the chocolate into the dough, Ruth grabbed a bar of **semi-sweet chocolate**, broke it into pieces with an **ice pick**, and stirred them into the mixture.

What came out of the oven 12 minutes later was the world's first batch of **chocolate chip cookies**! Rumour has it that Ruth later sold the recipe to the **Nestlé chocolate company** for a **dollar** (about **£15** in today's money) plus one really sweet perk – a **lifetime supply of chocolate**!

Historians **aren't sure** if Ruth invented chocolate chip cookies on purpose or by accident... but either way, we're glad they exist!

A whopping
**7 billion chocolate
chip cookies** are
eaten in the **USA**
each year – **half**
of which are
homemade.
Yum!



THE INVENTION: SILLY PUTTY

THE DATE: 1943

THE DETAILS: Scottish-born scientist **James Wright** was gutted. He had been trying to develop a **cheaper** alternative to **rubber** for the **U.S. military** to use during **World War II**. But though his invention **moulded like clay** and **bounced much higher than rubber**, it also **melted easily** – it just **wasn't tough enough** to help win the war.

But it *was* fun to play with, and so the scientist used it to **entertain his friends**. When a sample ended up in the hands of toy shop owner **Ruth Fallgatter**, she decided to sell the stuff in her shop in **Connecticut, USA**. And in 1949, it caught the attention of businessman **Peter Hodgson**.

Peter saw the putty's potential as a bendy, bouncy toy! Renaming the product **Silly Putty**, he put it in plastic **egg-shaped shells** to sell in time for **Easter**.



Silly Putty was put to **serious use** in **1968** – **astronauts** on the **Apollo 8** spacecraft used it to stop their tools from **floating in zero gravity** during their **mission to orbit the Moon**.



THE INVENTION: ICE-CREAM CONE

THE DATE: 1904

THE DETAILS: The **St. Louis World's Fair** in **Missouri, USA**, was packed with inventions like the **car**, the **electric typewriter** and **electrical plug sockets**. But one clever man also accidentally invented the **ice-cream cone**!

Ernest Hamwi, an **immigrant from Syria**, was selling **waffle-like pastries** called **zalabia** next to another stall offering **ice cream**. Back then, ice cream was served in **paper cups** – but the frozen-treat seller **ran out**! Thinking quickly, Ernest **rolled a thin waffle into a funnel shape** and gave it to his neighbour. The waffle **cooled** and **remained solid**, making it the perfect carrier for a scoop of ice cream. Fairgoers were soon salivating over what was probably the world's first ice-cream cone.

HOW TO WIN AT FAILING

Messing up isn't always a bad thing. Follow these tips to make failure fantastic...

FAILURE STINGS - AND THAT'S OK!

Don't ignore a failed test or a dropped catch because you're **disappointed** or **embarrassed**. See it as a reminder to **study harder** and **practise more**, and then **move on**!

SUCCESS IS NOTHING WITHOUT FAILURE.

Ever learned to **ride a bike**, **skateboard** or **rollerskates**? We bet that **whenever you fell off you hopped back on and kept trying**. **Failing first** always makes **success** feel **extra sweet**!

FAILURE IS THE BEST TEACHER.

Embrace the teaching power of **messing up**. **Tell your teammates** about your embarrassment on the sports field. They'll **learn** how to **avoid making the same mistake** themselves.

Meet the CHILDREN'S CLIMATE PRIZE WINNER

WINNER

Reshma Kosaraju
for her project
**AI Against
Forest Fires!**



*I'm so happy
to have won
the Children's
Climate Prize!*

Name: Reshma Kosaraju

Age: 15

From: Saratoga, California, USA

Project summary: Artificial
intelligence that predicts
forest fires!

Due to **climate change**, there are **more forest fires** every year – and they're getting **more dangerous**. Across the world, forest fires are responsible for **over 339,000 deaths** every year.



When **Reshma** first moved to **San Francisco, California** in 2018, **smoke** and **pollution** from a **forest fire 320km away** made the air **dangerous to breathe**. It was so bad that she had to wear a mask for over a month! Firefighters put out the blaze, and the air eventually cleared, but it got Reshma thinking – **how long until there's another one?**

THE IDEA!

"I wanted to figure out a way to **predict fires before** they occurred," says Reshma. "I hoped this could save **lives, money** and the **environment**." Back then, Reshma only had a vague idea about how **artificial intelligence (AI)** worked – but using **online resources**, she gradually **taught herself** everything she needed to know. She then gathered **information** about the **weather** and **climate** from **automatic weather stations** situated around the USA.

Next, Reshma combined the **meteorological** (weather)

data, such as **temperature, wind speed, and humidity**, with info about **human behaviour** to create an **artificial intelligence system** that could **predict forest fires** with **almost 90% accuracy!**

SUCCESS!

Amazingly, Reshma's '**early warning system**' is now being used by firefighters in **California!** Using her AI they're able to **predict where and when** forest fires

will occur. They're able to **reach fires more quickly, save more lives**, and **reduce the amount of toxic smoke** that each blaze produces. Wow! So what now?

"I think **making it into an app** would be the next step," Reshma explains excitedly. "Then **everyone would be able to access it**, and it could become useful **all over the globe**."



**Smoke in
San Francisco**

**Wild fires can
destroy homes
and trees, and kill
countless animals**

CLIMATE PRIS

Find out how five
inspirational teens are
tackling the climate crisis...



CHILDREN'S CLIMATE PRIZE

These **international awards** celebrate **young innovators** who have made **extraordinary efforts** for the **climate** and **environment**! Launched in **2016** by a **Swedish renewable-energy company**, a panel of seven judges awards winners with a **diploma, medal** and **SEK 100,000 (£8,000)** to continue developing their projects.



Reshma with
her award

With her prize money, Reshma hopes to **train the AI system** to work in **other regions**, so it can **predict fires worldwide**!

WHAT THE JUDGES SAID

Reshma is brave, innovative, and solution-focused. She has created an extraordinary and creative solution to a huge human problem, with potential to save lives all over the world.



FINALIST

Lesein Mutunkei
with his project
Trees For Goals



*My dream is that the world football organisation **FIFA** get involved in my project!*

Name: Lesein Mutunkei
Age: 17
From: Nairobi, Kenya
Project summary: Local football groups plant trees for each goal scored!



Lesein loves forests and, alongside sports, **walking in nature** has always been his favourite thing to do. So when he learned about the problems of **deforestation**, and its links to **climate change**, he was **determined to help...**

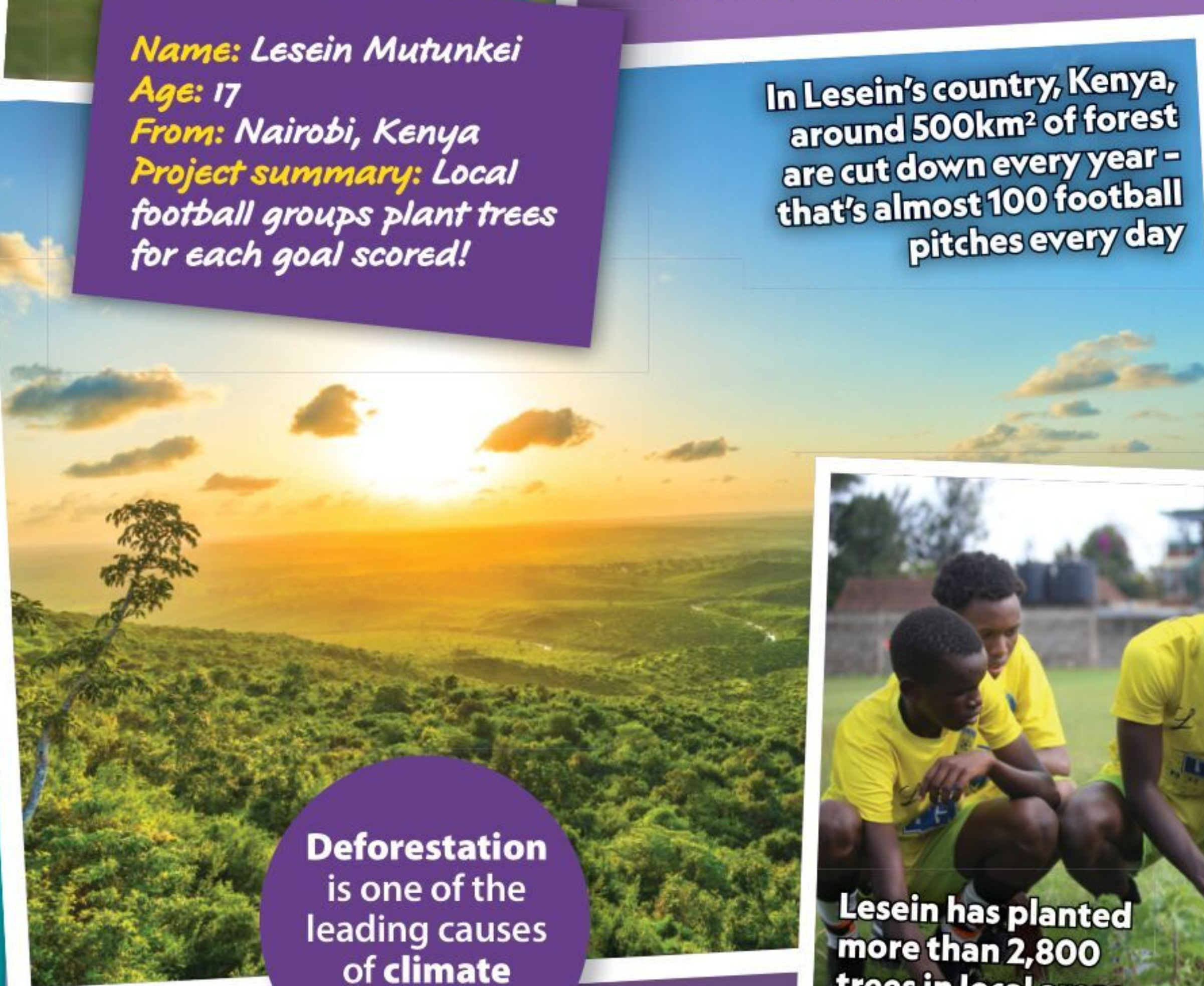
THE IDEA!

"I thought that if I didn't do something, I'd **lose all the outdoor activities that I loved**," Lesein says. "So, aged **12**, I decided that **for every goal I scored playing football, I'd plant a tree!**"

Lesein's **friends and team-mates** began to join in, and slowly his personal mission grew into a much larger project: a scheme called **Trees for Goals**. Local schools and football clubs can sign up, pledging to **plant 11 trees for every goal scored** – one for each player in the team! Each group is assigned their own area of **deforested land**, where they plant the new trees. By joining the scheme, sport-lovers of all ages get **football training and learn about the environment**, too. **Tree-mendous!**

In Lesein's country, Kenya, around 500km² of forest are cut down every year – that's almost 100 football pitches every day

Around 240 million people in 200 countries play football, so imagine how many trees could be planted if the project went global!



Deforestation is one of the leading causes of **climate change**.



Lesein has planted **more than 2,800 trees** in local areas

FINALIST

Fernanda Barros
for co-founding
**Fridays for Future
Amazonia!**



I started protesting because we're facing so much destruction!

Name: Fernanda Barros
Age: 16
From: Belém, Brazil
Action summary: Co-founding a protest group to challenge the Brazilian government!



"The Amazon is important to me because I'm right in the middle of it," explains **Fernanda**, from **Belém** in northern **Brazil**. But sadly, her beloved rainforest is threatened by **deforestation**... and not everyone from her country wants to protect it. In fact, since the **Brazilian President Jair Bolsonaro** came to power in **2019**, **deforestation** and **fire** in the **Brazilian Amazon** have risen to their **highest levels** in more than a decade, with **government policies** that seem to **encourage** deforestation.

TIME FOR ACTION!

Fernanda co-founded **Fridays for Future Amazonia** as a way to bring young climate activists together to speak up against the government, demand climate action and save their home. "I really think that the destruction to the Amazon rainforest could be **reduced**, and we could **recover many forest areas**," Fernanda says. "There's still so much we can do, and **our voices have a lot of power**. **Support from around the world** keeps me motivated!" You have our support too, Fernanda!

The Amazon rainforest stores up to **140 billion tonnes** of carbon. Plus, it's home to about **10% of the world's animals**, **40,000 plant species** and around **30 million people**

Fridays for the Future is a youth-led global movement started by **Greta Thunberg** in **2018**, which demands that **politicians accept responsibility** and **take action** against **climate change**.

Fernanda also co-founded the **SOS Amazonia Relief Fund**, which has supported **thousands of indigenous people** during the **Covid-19 pandemic**.



Fernanda is protesting about Brazil's reaction to the climate crisis



Fernanda's group have picked up huge amounts of rubbish

FINALIST

Yash Narayan
with his project
Deep Waste!



Waste mistakes are a big problem!

Name: Yash Narayan
Age: 17
From: San Carlos, USA
Project summary: An app to identify waste for recycling!

FINALIST

Anjali Sharma for taking **legal action** against **Australia's Environment Minister!**



If we make our views heard, the people in power can't ignore us all.

Name: Anjali Sharma
Age: 17
From: Melbourne, Australia
Action summary: Tackling climate change in the courtroom!



"I was shocked when I went to a local **recycling centre** and saw how many **recyclable** and **compostable materials** were in the **landfill pile**, like **plastic** and **food waste**," says Yash. "People really don't know what they can **recycle**!" And he was right. Of the **2 billion tonnes** of waste people generate each year, only around **15%** is recycled.

A BETTER WAY...

"Once I saw the problem, I knew there had to be an **easy, accurate, low-cost** way for people to access the right information, exactly when they needed it," Yash says. So, he created **DeepWaste** – a **smartphone app** that tells users whether or not something is **recyclable**! All users have to do is point their **smartphone camera** at a piece of waste. Then, the app uses **artificial intelligence** to work out what the rubbish is, and which bin it can go in. Simple!

"We found that people are **50% more accurate** at throwing their waste away correctly if they use **DeepWaste**," Yash reports. Clearly, he's not been *wasting* his time!



There are already **5,000** images of waste stored on the **DeepWaste app**, which form a sort of library that the **AI technology** can refer to!



A garbage collection centre in California, USA

Head to **deepwaste.ai** to find out more and download the app. By contributing images of waste, contributors help teach the technology and **increase its accuracy**.



Seventeen-year-old Anjali made history when she **took the Australian Environment Minister to court** over the decision to open a new **coal mine** in **New South Wales**. In **March 2021**, Minister **Susan Ley** was about to approve the **Vickery Extension Project**, a coal mine which will dig up **168 million tonnes** of coal and produce an estimated **370 million tonnes** of **CO₂** which will significantly contribute to the **climate crisis**.

ANJALI'S COURT CASE

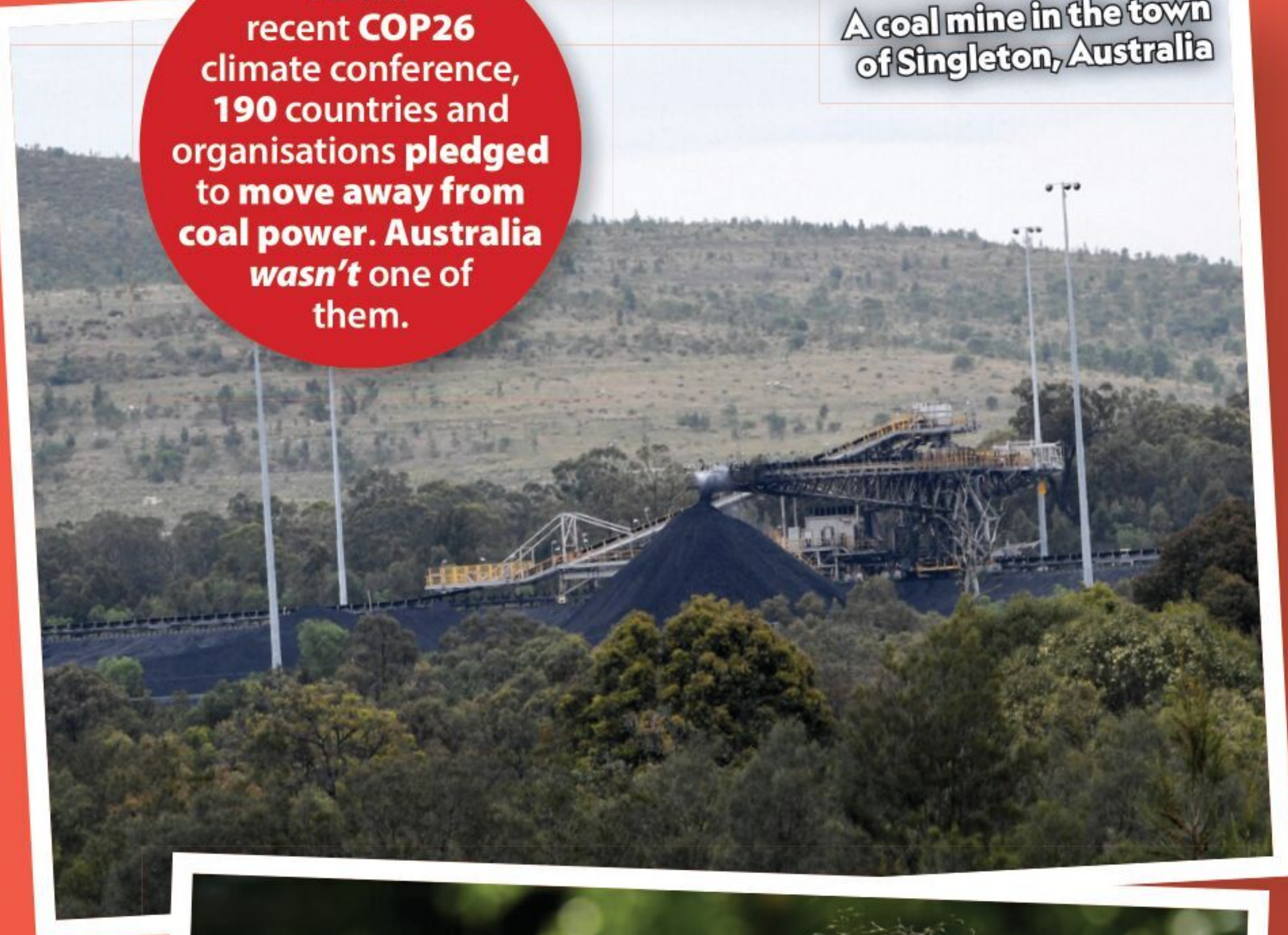
Along with **seven other students**, Anjali opened a **lawsuit** against Susan, arguing that the Minister has a **responsibility** to ensure her decisions **do not directly harm future generations** – and, therefore, that the Vickery Extension Project should not go ahead. Excitingly, Australia's **Court of Justice agreed!** On **27 May 2021**, they declared that the Environment Minister has a **duty of care** to **protect the children of Australia** from the **impacts of climate change**. This is the **first ruling of its kind** to happen in the world!

ONGOING BATTLE

However, despite Anjali's success with the duty of care ruling, Susan went on to **approve** the Vickery Extension Project on **16 September 2021**. The Environment Minister is also attempting to **remove** the duty of care. But, not to be dissuaded, Anjali's team have **gone back to court** to try and keep the decision in place. While she **fight for justice** in Australia, Anjali hopes that her court case will **inspire others** around the world. Go, Anjali!

At the recent **COP26** climate conference, **190** countries and organisations **pledged** to **move away from coal power**. **Australia wasn't** one of them.

A coal mine in the town of Singleton, Australia



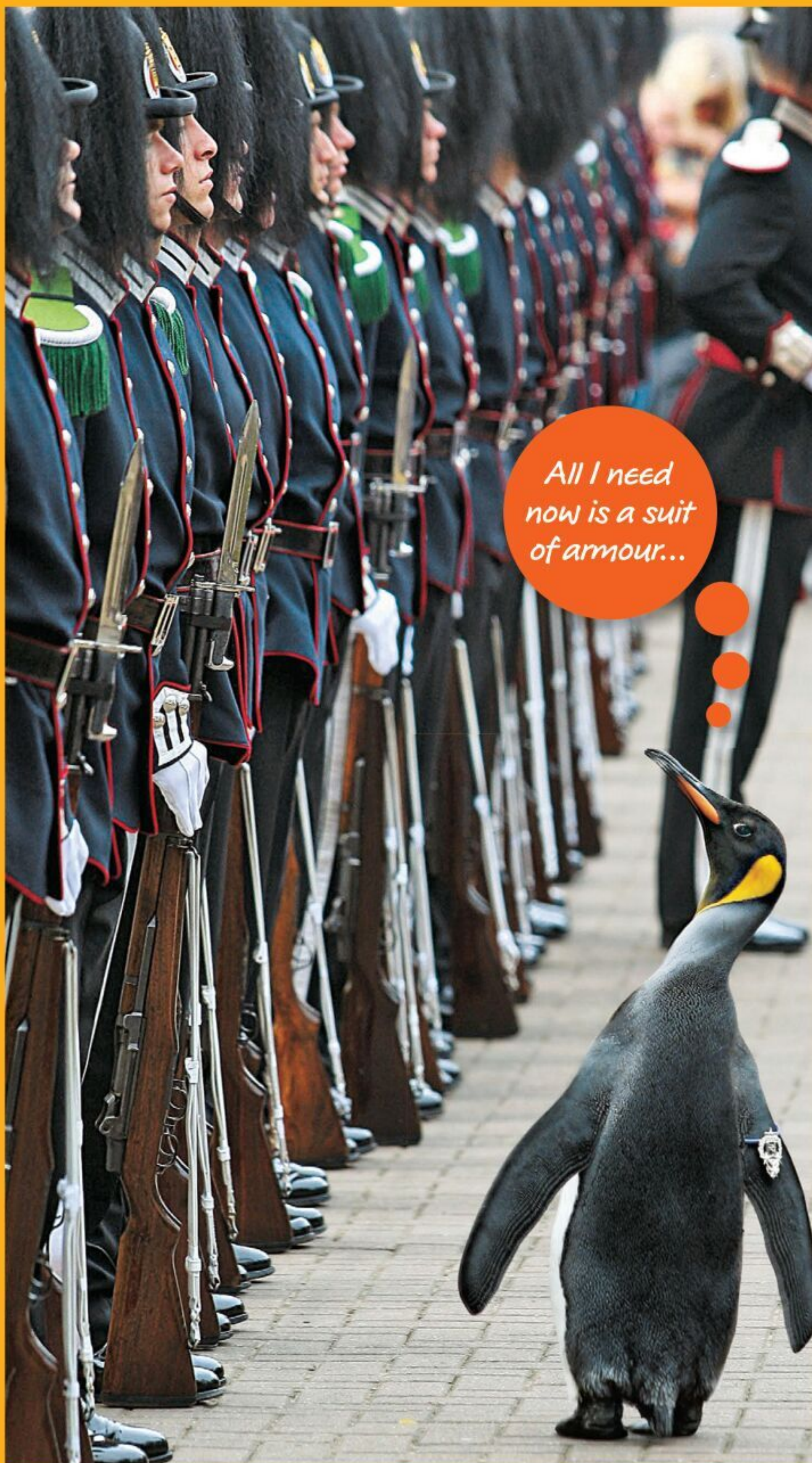
Australia is the **third largest exporter of fossil fuels** in the world, after **Russia** and **Saudi Arabia**.



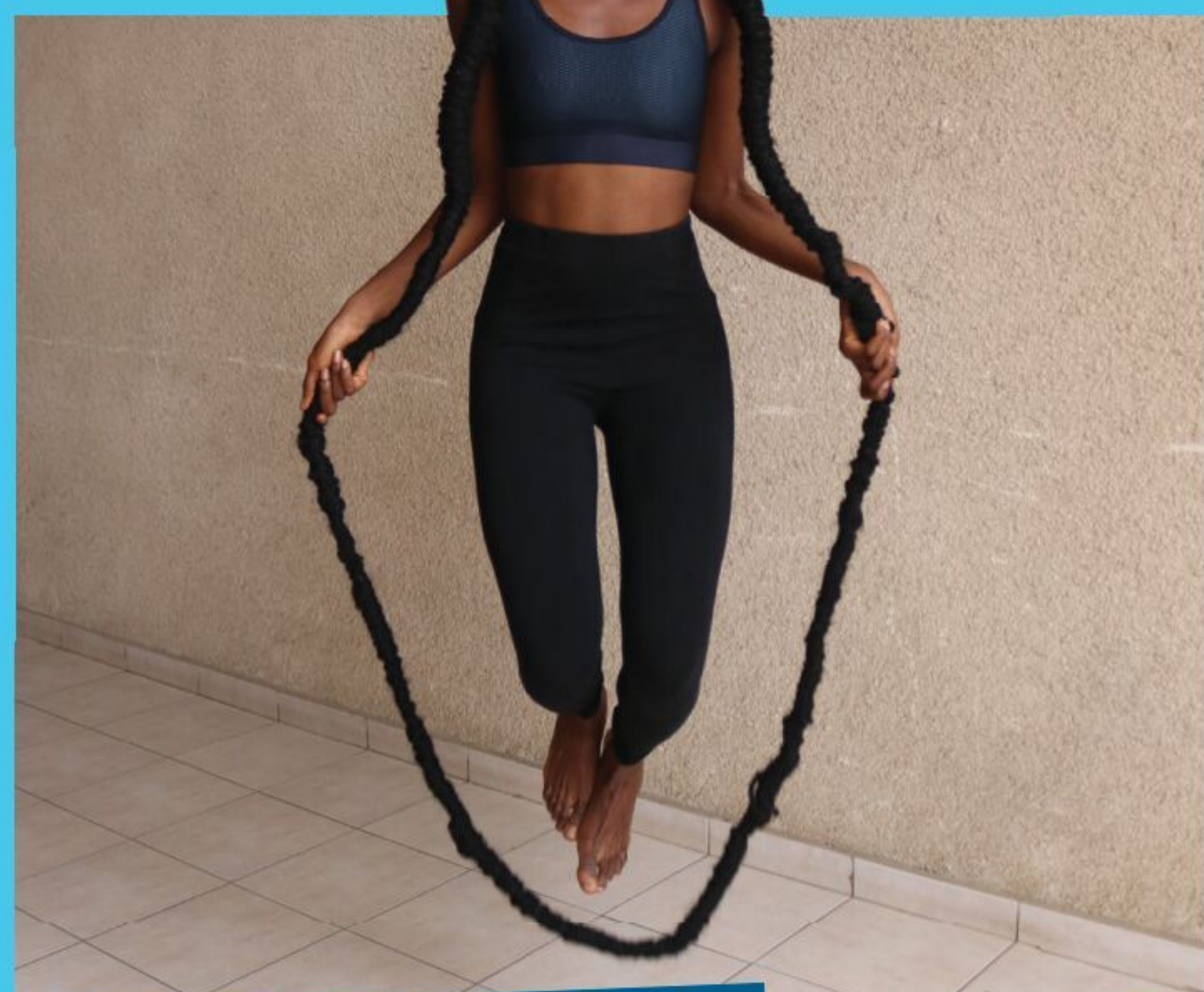
VIP: VERY IMPORTANT PENGUIN



This **officer** prefers to **waddle** instead of march. **Sir Nils Olav III**, a **king penguin** who lives at **Edinburgh Zoo** in **Scotland**, is the **highest-ranking penguin in the world**. In addition to being **Brigadier** of the **Norwegian King's Guard**, he's also been **knighted** on behalf of **King Harald V** of **Norway**. All hail, Sir Nils!



All I need now is a suit of armour...



SKIP, NOT SNIP!



Meet **Laetitia Ky**, from **Abidjan** in **Ivory Coast, Africa**. The artist, actress and model holds the record for the **most skips over a person's hair in 30 seconds** – a whopping **60**! Laetitia braided her own hair, then added extensions to form the 'rope.' *Hair-mazing!*



Don't try this at home, kids!

DUDE DRINKS LEMON JUICE



When life handed **André Ortolf** lemons, he broke a world record. André, from **Germany**, drank a **litre of lemon juice** in exactly **16 seconds**, the **fastest time ever**. His secret? Using a **straw** to slurp the **sour liquid** out of a large measuring cup. Wonder whether he managed to do it without scrunching up his face, though?!

HOFFMANN'S
TWO-TOED
SLOTHS



**PAINTED
GRASSHOPPER**



RESPLENDENT
QUETZAL



COMMON
WOMBAT



**Bet You
Didn't
Know!**

6 totally cool facts

1

To help them stay warm, Arctic hares have shorter ears than other hares so that they lose less body heat.

2

Scientists think that some smaller dinosaurs survived in cold climates by digging burrows.

3

In extreme temperatures, geysers can freeze into towering cones called ice volcanoes that continue to spew hot water.

4

Some historians think that more than 2,000 years ago, people in Europe and Asia ate 'ice cream' made of snow, honey and fruit or nectar.

5

Winter on Neptune lasts about 40 Earth years.

6

Dry ice isn't ice at all - it's the solid form of carbon dioxide, frozen at minus 78.5°C.

THE WASTE AGE

Humans generate a mind-boggling amount of rubbish. But how did this happen? And what can designers do to stop it? Read on to find out!



We are the **only creatures on the planet** whose waste **can't be returned to nature**. Of the **2 billion tonnes** of rubbish produced globally, only around **15% is currently recycled**. But what if we saw **all** our rubbish as a **resource**? NG Kids visited the **Design Museum in London** to see how **innovative designers** are using **waste** to create **eco-friendly materials and products**...

OCEAN POLLUTION

Our **oceans** are drowning in **plastic**. Scientists estimate that the world's oceans contain more than **5 trillion bits of plastic**, and a large proportion of them are from the **fishing industry**.



HUMAN HAIR



FISHING NETS

Dutch designer **Sanne Visser** uses a special **rope-making machine** to produce **ropes** from **human hair**! About **6.5 million kilograms** of hair is chucked away by **UK hairdressers** every year, and its natural properties of **strength, oil absorbency and insulation** make the stuff from our heads a **great alternative** to **polluting plastic fishing nets**. *Hair-mazing!*



FISHING GEAR



COOL CHAIRS



Architecture practice **Snøhetta** recovers **plastic waste** from **abandoned Norwegian fishing equipment** and then designs **new furniture** out of it – like this **chair**!

Around **640,000 tonnes** of **fishing rope** are **discarded in the sea** each year.

FAST FASHION

Think of **fashion**, and **supermodels, glamour** and fancy new **outfits** might spring to mind. But the fashion industry has a dark side. It's the **second most polluting industry** after **oil**, producing **92 million tonnes** of **textile waste** a year. Thankfully, some designers are trying to change that...

BOOK COVERS + OLD TRACKSUITS ➔ BAGS AND CLOTHES



British fashion designer **Bethany Williams** makes clothes and bags out of **book covers** and **second-hand tracksuits**! She also uses **deadstock** (old unused items) to make her garments. Plus, her collection supports **homeless charities**!

More than **11 million items** of **clothing** go to **landfill** each week in **UK**.

A bale of **discarded jeans** ready to be transformed into a new fabric!



OLD JEANS



NEW JEANS

Swedish manufacturer **Renewcell** has developed a material called **Circulose**® which is made from **cotton** recovered from **worn-out clothes**. **Textile recycling** generates **new jobs** and reduces the need to **grow cotton**.

WANT TO HELP?

The very best way to help tackle the pollution caused by fast fashion is to **stop buying new clothes**. **Love and care** for the clothes **you've got**, and when you need new ones, buy **second-hand** or **swap with friends**.

PLASTIC PACKAGING

By far the greatest source of **plastic pollution** is **packaging**. It makes up **47%** of the world's plastic waste. Check out these awesome **eco-alternatives...**



SUGAR BEET SKIN



BIODEGRADABLE PACKAGING

Packaging waste and climate change are connected. That's because the **plastics industry** is the **second largest producer** of greenhouse gases.

In Poland, sugar beet skin is one of the biggest forms of **agricultural waste**. **Sonia Jaśkiewicz's** project 'Waste Lab' makes a range of **materials** out of the skin, including **compostable food packaging**. *Beet that!*



SEAWEED



EDIBLE PACKAGING

So far, **Notpla** has replaced more than **300 000** single-use plastic items.

Many designers are creating exciting new **biodegradable materials** that **replace plastic** – like **Notpla** (short for 'not plastic'), which is made from **seaweed**! Some species of seaweed can grow **two metres** in just **24 hours** so it's super **sustainable**! The edible 'Ohoo' bubble (above), used for **liquids** and **condiments** like **tomato sauce**, is made from the new material.

WANT TO HELP?

Ask your family to avoid all **single-use packaging products** where they can. Make your own **packed lunches**, fill up **reusable drinks bottles** and **cook your own snacks**.

CARE-FREE CONSTRUCTION

New buildings are designed to be **more energy efficient**. However, the **construction industry** makes lots of rubbish, and the **demolition** of older structures is causing a huge increase in **global construction waste**. But what if this rubble could be **reclaimed and reused**, and what if new materials were **sustainable**?



DEMOLITION WASTE



NEW BRICKS

Kenotek's K-Briq is made from at least **90% recycled construction waste**! Produced using **local waste materials** and **without fossil fuels**, each K-Briq releases only a **tenth** of the carbon emissions of a traditional clay-fired brick. *Smash-ing!*



SEA SHELLS



TILES

Sea Stone is certified as **non-toxic, biodegradable, fireproof** and **water resistant**.

In **South Korea**, the fishing industry produces **millions of discarded crustacean shells** each year. But design studio **Newtab-22** is turning this **calcium carbonate-rich** waste into 'Sea Stone' tiles, objects and interior panels. *Ex-shell-ent.*

COFFEE CUPS + MUSHROOMS = 3D PRINTED STRUCTURES!



This **sturdy column** (above right) is made from **discarded takeaway coffee cups** that have been eaten by **mycelium**, the **root network of fungi**! This process produces a **biological paste** that can be **3D-printed** into **construction materials**. **Blast Studio's** *tasty* idea could help deal with the **30,000 tonnes** of coffee cups discarded in the **UK** each year.

A study in 2018 found that **99.75%** of disposable coffee cups in the UK were **NOT** recycled.

Read more *rubbish* stuff over the page!

Knotted fishing gear sample from human hair waste © KNOT / Sanne Visser; S-1500 chair, designed by Snohetta and produced by Nordic Comfort Products © Bjornar Overbo; Bethany Williams tracksuit © Felix Speller; Bags © Bethany Williams; Bale of jeans © Alexander Donka/Renewcell; Sugar beet packaging © Waste Lab; Sea Stone © INSTANT FILM & Studio Newtab-22; 3D printed column © Blast; Edible Ohoo packaging © Notpla; K-briq © Kenotek (Gabriela Medero and Samuel Chapman); All other images © Getty Images UK.

THROWAWAY CULTURE

People **haven't** always **chucked** things away. Human-made objects and clothes took **time**, **effort** and **specialised work** to create, and were **cherished by their owners**. Objects and clothing were **passed down** through **generations**, and were **repaired**, **fixed** and **stitched** if they **wore out** or **broke**.

MASS PRODUCTION

But then, in the **1950s**, new machinery and **cheap materials** reduced the cost of things and changed the way we value objects. Products were made for **convenience**, with **disposable cups**, **cutlery** and **nappies** easier to replace than to clean. This meant there was **less washing** and **cleaning** to do – but nobody gave a thought about where all the **plastic would end up**.

PLASTIC PRESSURE

The companies that make plastic **spent a lot of time and money** encouraging people to use **throwaway items** – because that way they could **sell more** of them. And although plastic bags are now **banned** in many places, plastic companies still pile on the pressure for people to use them.



Globally, more than a **million plastic bags** are used every **minute**.



BUILT TO BREAK

Knowing they can make more money by **selling new products** rather than **repairing old ones**, many companies design items to **purposefully break** after a few years. This **cheeky trick** has a name – '**planned obsolescence**' – and it all started with **lightbulbs**...

A NOT-SO-BRIGHT IDEA

Bulbs were originally built to last for up to **2,500 hours**. But then in **1924**, a group of international lightbulb manufacturers known as the **Phoebus Cartel** ruled they should last just **1,000 hours**. They **fined** any manufacturers that made bulbs that lasted longer! By artificially **halving** the bulbs' lifespan, they forced consumers to **buy more replacements**. Although we now have **eco-bulbs** that last many **years**, this strategy of 'planned obsolescence' is still used by well-known companies such as **Apple**. But things are changing...

REPAIR IS FAIR

Last year the UK introduced a new '**Right to Repair**' law, to ensure **more products can be fixed**. The law requires **spare parts** to be made available to **all customers**. It **doesn't cover every device** though, so more laws are needed to solve this problem!

Today it's **more expensive to get a toaster repaired** than to **buy a new one**. Do you think that's right?



iFixit is a website that **publishes instructions** so people can **fix their own gadgets**! It also sells **tools** to open products that have been designed to keep users out.

The **richer and more developed** the **society**, the **more rubbish** it creates. Just **16% of the global population** consumes **80% of the world's resources**.



E-WASTE

Tens of millions of tonnes of electronic items are chucked away each year. Known as **e-waste**, it's the fastest growing form of waste, and if current rates continue, we'll bin more than **100 million tonnes of electronic devices** per year by 2030.

PRECIOUS METALS

But these dumped devices aren't any old rubbish – they contain **rare metals** such as **gold** or **titanium**. When this e-waste is **recycled properly**, these **valuable materials** can be **extracted** for **re-use**. This generates **jobs** and stops **toxic chemicals** leaching into the environment. In fact, it's thought that by **2080** the largest metal reserves will not be underground but in circulation as **existing products**!



Workers recover precious metals at an e-waste recycling facility in Belgium, managed by Recupel



Most **e-waste** is created not at the end of an item's life, but **during its manufacture**, and from the **mining** for parts, such as **copper** for wires. It takes less energy to **charge and operate a smartphone** for a whole decade than to **build a new one**.



Mining is a wasteful business. For each kilo of copper mined, over 210kg of mine waste is produced

The longer we keep our phones, the smaller their environmental footprint. Fairphones are designed to be easy to **dismantle, repair and upgrade**!



WANT TO HELP?

Always **recycle your electronics correctly**. Head to recycleyourelectricals.org.uk/ to find out how. And do you really need to replace your phone? Think about **extending its life** by **changing the battery** instead.

Waste Age: What Can Design Do? is on at the **Design Museum, London**, until **20 February 2022**. Head to designmuseum.org to book tickets and learn more.



BEIJING 2022
MASCOT

1

Beijing is the first city to host both the **Summer** and **Winter Olympics**.

4

Figure skating

was originally a **Summer Olympic sport**.



2



Stefan Kraft, holder of the **ski jump world record**, soared the length of **nine blue whales** lined up **head to tail**.

5

Jackson Haines, who became known as the **father of figure skating**, was originally a **ballet dancer**.

3

'**Skiing**' is the only commonly used **six-letter word** in the **English language** that has **double i's** right in the middle.

6

Some experts think **early ice hockey pucks** were made from **frozen cow dung**.



30 COOL THINGS ABOUT WINTER

7

A traditional **Native American game** called **snow snake** involves **throwing** a **hand-carved pole** across a **track of snow**.

8



The first **ice skates** were made of **animal bones**.

9



The most **expensive snowboard** sold for **£20,000**.

10



The **world's tallest half-pipe** - a **U-shaped ramp** used for **snowboarding** - is about **1.2 metres taller** than a **giraffe**.

11



In the **sport of snow kayaking**, athletes use **paddles** to **guide their vessels** down mountains.

12

Visually impaired athletes compete in **alpine skiing** at the **Paralympic Winter Games** by **communicating** with a **sighted guide** - **while moving up to 105kmph**.

13



The **Winter Olympics organisers** often **make snow**.

14

In **Michigan, USA**, contestants **race outdoor loos** on **skis** - complete with a **toilet seat** and roll of **toilet paper**.



15

The first Winter Olympics – originally called **Winter Sports Week** – took place in **Chamonix, France**, in **1924**.



18

In **curling**, a **stone** is considered 'burned' if a teammate **touches it**.

16

Luge racers can speed down the track at **133kmph** – much faster than most **motorway speed limits**.



17

When playing **snow golf**, players swap classic white for bright-orange or **yellow balls**.



19

Players use **pre-made snowballs** to compete in **yukigassen**, the Japanese sport of **snowball fighting**.



20

Some **figure skating** moves are so **DANGEROUS**, they're **illegal** in **competitions**.



WINTER SPORTS AROUND THE WORLD

To celebrate the Winter Olympics in Beijing, China, from 4 to 20 February, we check out some strange sporty facts!

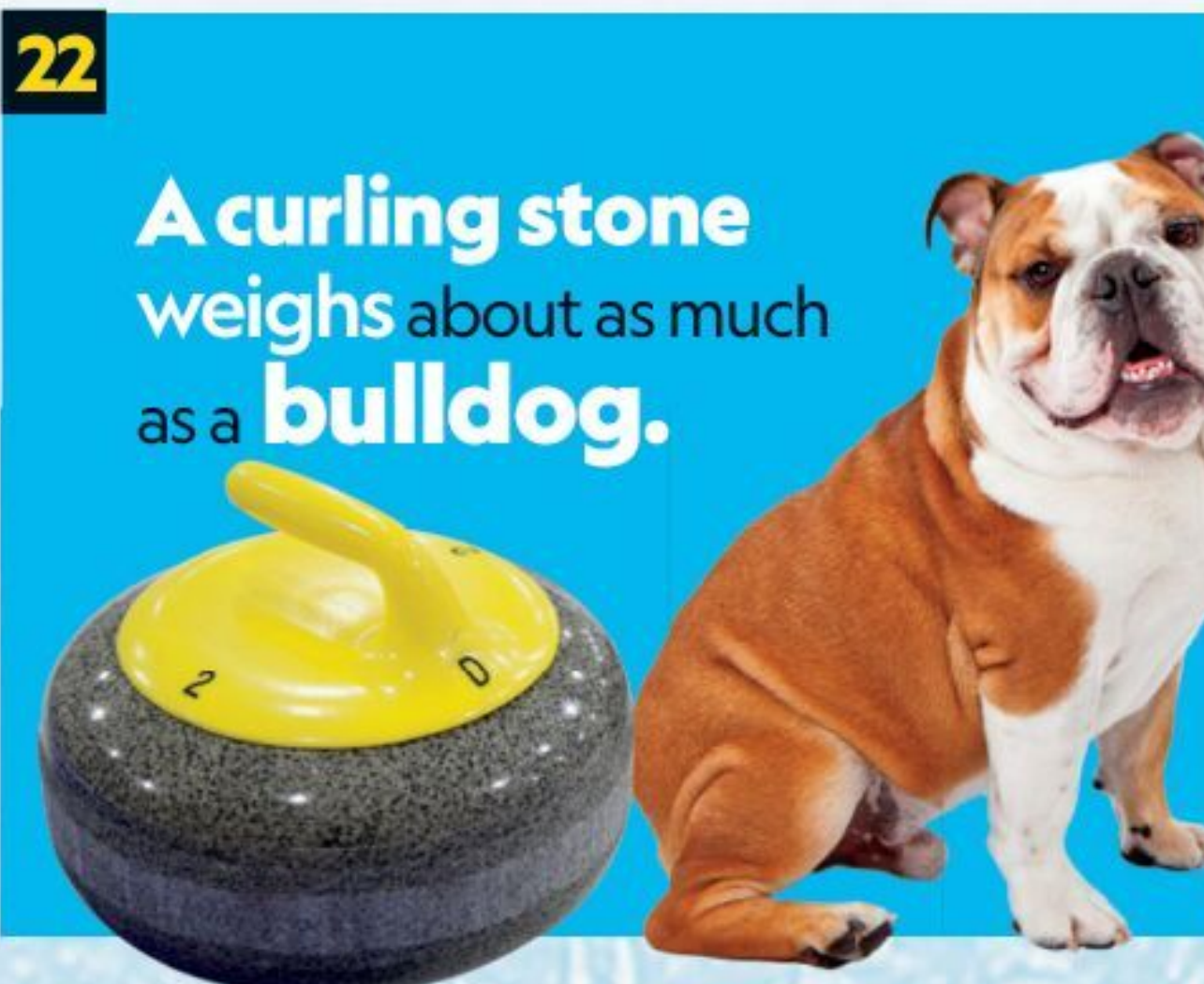
21

A combo of **skiing**, **snowboarding**, and **kitesurfing**, **snow kiting** is the first **wind-powered snow sport**.



22

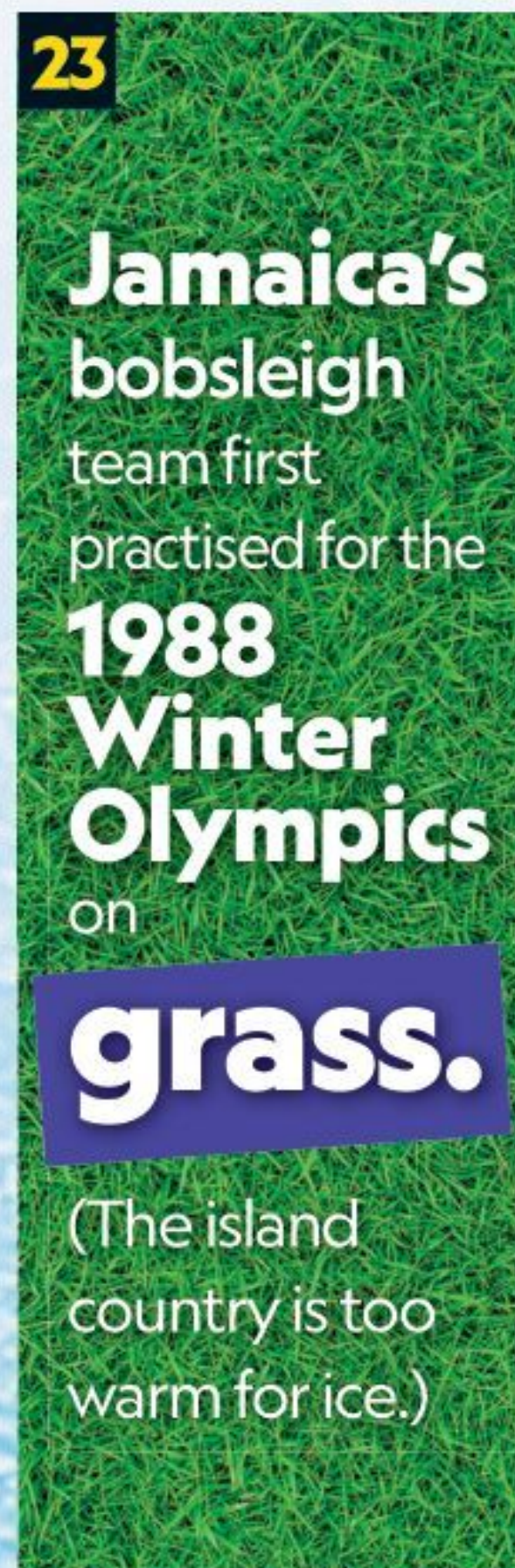
A **curling stone** weighs about as much as a **bulldog**.



23

Jamaica's bobsleigh team first practised for the **1988 Winter Olympics** on **grass**.

(The island country is too warm for ice.)



24

Ice hockey's Stanley Cup trophy has also been used to **serve ice cream**.



25

Ice blockers ride down a hill on **chunks of ice** – it's like **sledding without snow**.



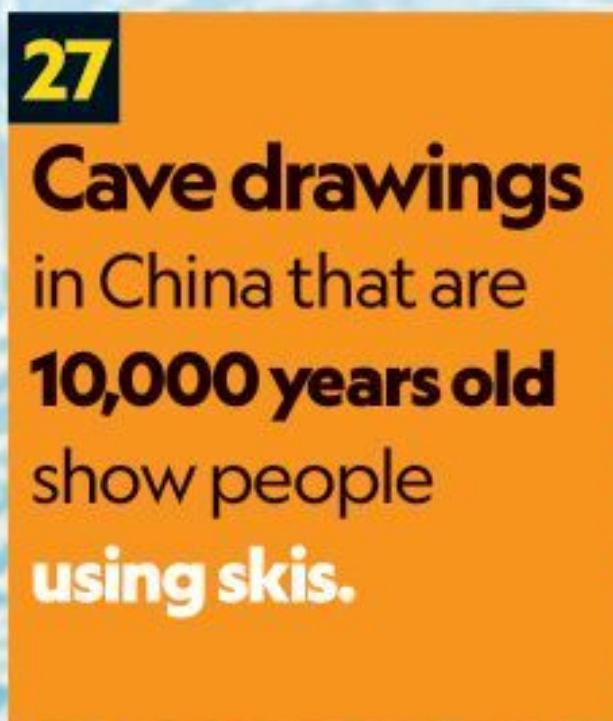
26

An early form of **snowboarding** was called **snurfing**.



27

Cave drawings in China that are **10,000 years old** show people **using skis**.



28

Bobsleigh crews '**bob**' their **body weight** back and forth to make the sled **go faster**.



JAMAICAN BOBSLEIGH TEAM

29

Iceboaters sail across frozen ponds and lakes.



30

Skeleton racers whoosh headfirst down an icy track.



IN IT TO WIN IT!

Enter ALL comps at
natgeokids.com
by 14 March

WIN! CLEMENTINE FLORENTINE

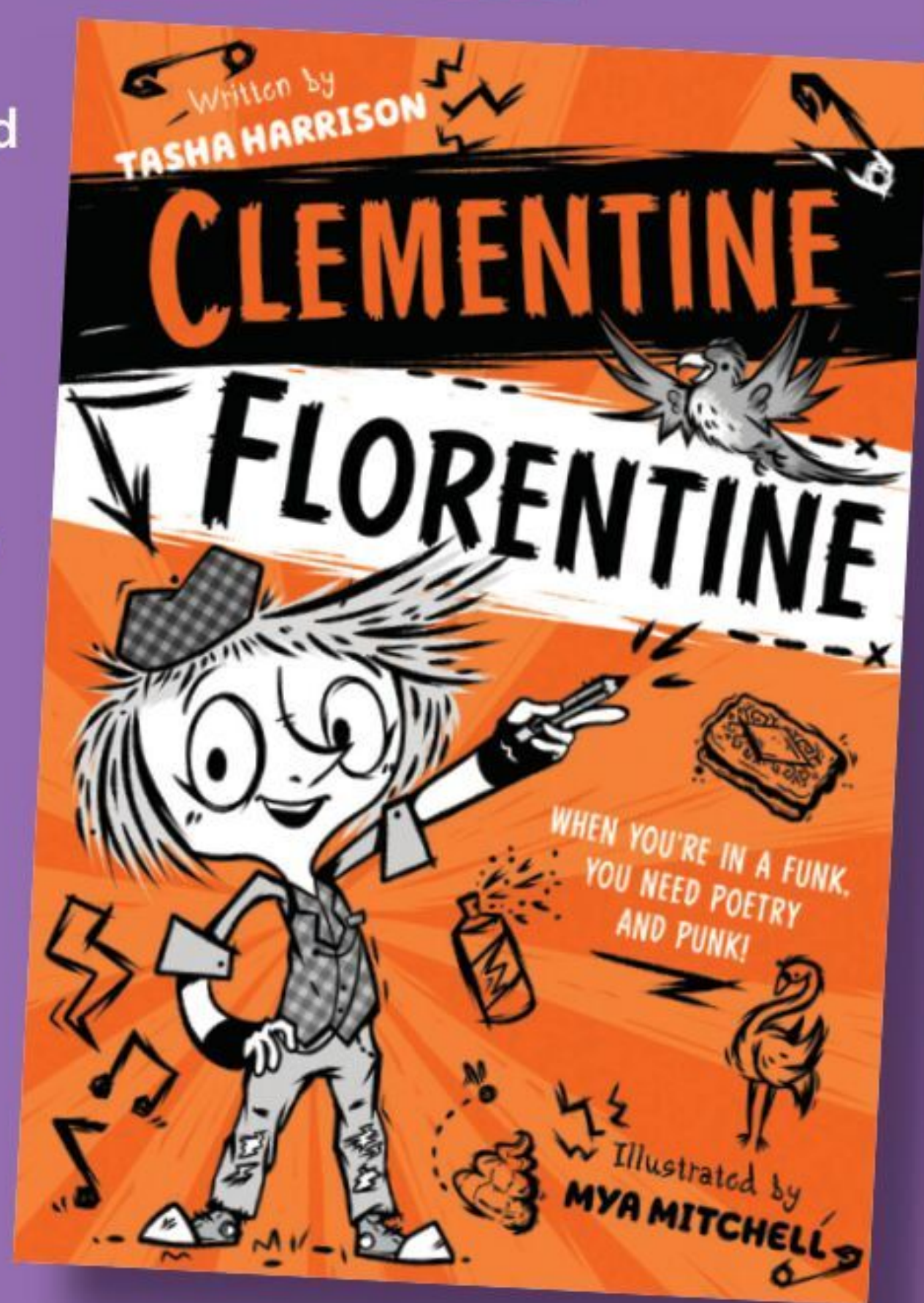
Meet **Clementine Florentine**, a talented young poet with a passion for custard creams!

When Clem's mum starts dating the dad of her school nemesis (and poetry rival) Callum, the pair simply HAVE to split their parents up before they fall 'in lurrvee'. If they don't, the unimaginable could happen, and they could end up being up step brother and sister. Yuck!

But then an unlikely friendship with ageing punk icon Lyn Ferno and her chatty pet parrot Viv helps Clem to start seeing things differently. Is it too late to undo the damage she's caused?

Sixty-five readers will bag a copy of this brill book.

Available from all good bookshops



Q Which of these was NOT a famous poet?

a) William Blake b) William Shatner c) William Wordsworth

WIN! SUPER CASTLE BUNDLE



Enter a world filled with dragons, princesses, knights and wizards with the **Super Castle Bundle: The Ultimate Medieval Collection** from Pack a Range!

This easy-to assemble, eco-friendly kit comes with a mighty castle that's made from recyclable, re-enforced cardboard. Colour in the artwork with the recycled felt-tip pens provided then use your imagination to disappear into a magical kingdom. Craft one of two knight helmets, pop it on and lay siege to the castle with the powerful catapults. Can the castle withstand your attack, or will its walls come tumbling down?

Two winners will win a **Super Castle Bundle**. Two runners-up will get a £20 voucher to spend at **packarange.co.uk**.

Nat Geo Kids readers can get 15% off at **packarange.co.uk** with the code NG15

Q Which of these is NOT a real castle?

a) Windsor Castle b) Leeds Castle
c) Wolverhampton Castle



WIN! STOMP RACERS™

Race your mates with these super kid-powered, STEM-inspired toys!

Stomp Racers are easy to assemble and don't require batteries or mains electricity to power them. Simply jump on the pressure pad and the Stomp Racer car whizzes through the air. Hit the ramp at full speed and watch the racers do sensational jumps, stunts and tricks. Whoosh!

Each set includes a **Stomp Launcher**, race car and ramp,

plus awesome stickers for customising your car.

Five readers will whizz off with a **Stomp Racers** set plus **Stomp Racers Duelling** to race against mates.

Available from Halfords, John Lewis and good toy stores

Q What is the record speed for a vehicle driven on land?

a) 12.7kmph
b) 122.7kmph
c) 1,227kmph



78 chances to win!

WIN!

MUD & BLOOM BOXES

Connect with **nature** with these delightful **boxes** from **Mud & Bloom**, delivered **every month** through your **letterbox**.

Each box includes everything you'll need for **four seasonal gardening** and **nature craft** activities, like growing your own **plants**. Amazing!

There's also **nature news**, **spotting activities** and fun games to help you learn about **animals**, **plants**, **insects** and the **seasons**. All Mud & Bloom seeds are **organic**, and the **packaging** and **craft materials** are **eco-friendly**. Plus, each box contains **peat-free compost**

pellets, so you can look after the planet while you plant!

Three nature lovers will receive a **six-month subscription** to **Mud & Bloom**. If you don't win, don't worry! You can still receive **15% off** your first box if you use the code **NGKIDS** when **placing an order** for a **month-to-month subscription**. Cool!

Find out more at mudandbloom.com

Q Can you unscramble these letters to reveal a plant you might find in British woodlands? **BELUBLEL**



WIN!

CAMP BESTIVAL TICKETS

Pop on your dancing wellies and head down to **Dorset** this summer for the ultimate **family-friendly music festival** – **Camp Bestival**!

This year's Dorset bash has a **Desert Island Disco** theme, and **Lulworth Castle's** grounds will be transformed into a **palm tree paradise**, filled with **glitz** and **glitterballs**! Enjoy performances from **top musicians**, a new stage featuring the **World's Largest Disco Ball** plus a ton of other incredible entertainment.

Camp Bestival have just launched a **sister festival** in **Shropshire**, too! Set in the magical woodlands of **Weston Park**, it's the perfect place to **P. A. R. T. Y!**

One reader will nab a **family General Camping Pass** to their choice of either the **Dorset** or **Shropshire** event, plus **free parking**. Amazing!

● **Camp Bestival Dorset** is on from 28–31 July. The **Shropshire** event takes place 18–21 August. Prizes are non-transferrable and non-refundable. Family pass is for up to 2 adults and 3 children. Prize does not include camping equipment, travel, food or drink. Shimmy over to campbestival.net to find out more.

Q Which of these is a famous disco group?

- a) The Tee Pees b) The Bee Gees
- c) The See Dees



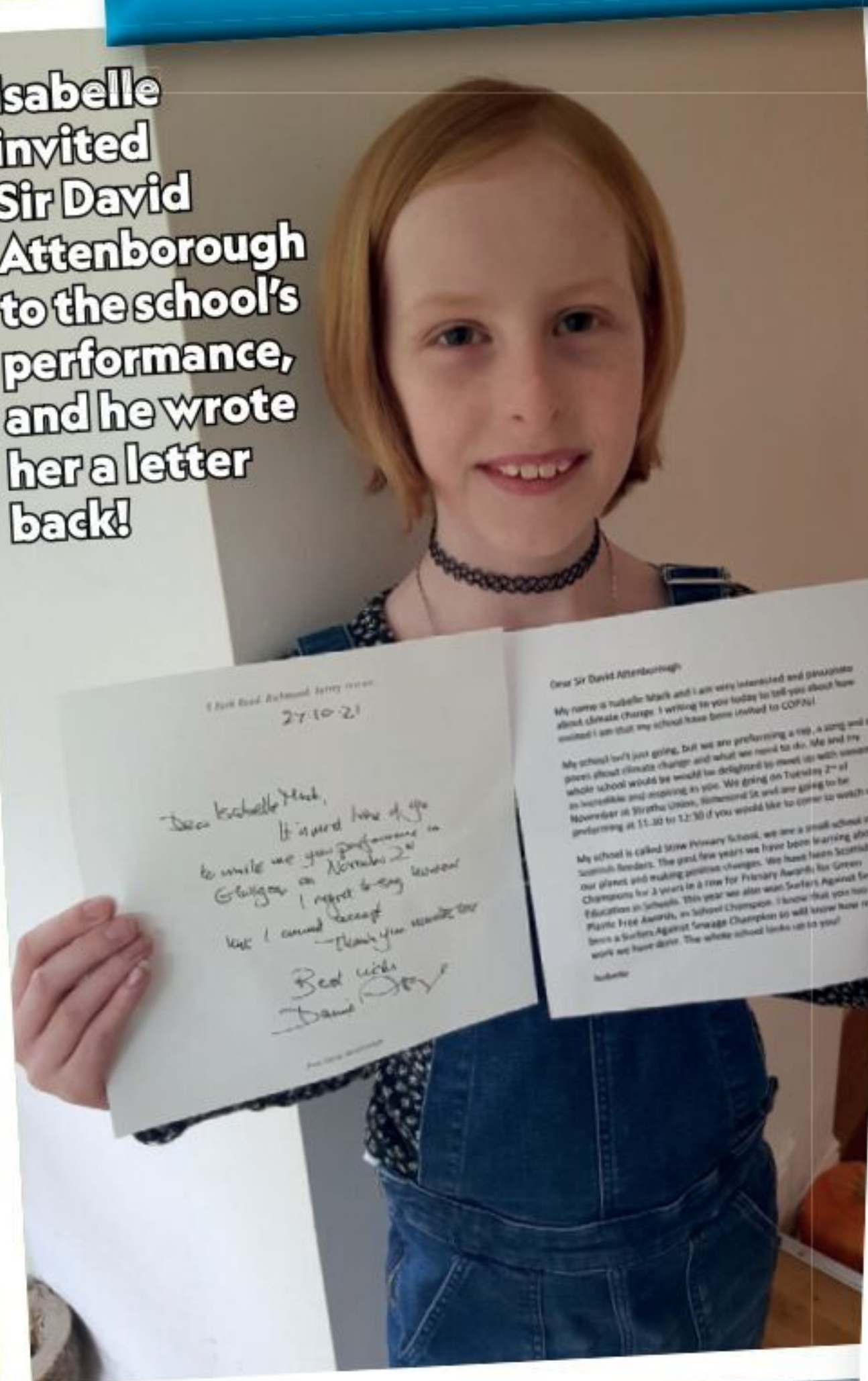
Enter ALL comps at natgeokids.com by 14 March

natgeokids.com 37

JUNIOR EXPLORERS' CLUB

SCHOOL TRIP TO COP26!

Isabelle invited Sir David Attenborough to the school's performance, and he wrote her a letter back!



At the start of **November** last year, **my school** went to **COP26** in **Glasgow** to **perform a rap, song and poem**, which we had created. We had to leave really early to get there on time, but it was worth it!

At the event, we took part in three **LEGO challenges** and heard from the **Ellen MacArthur Foundation**. Later on, I did a short **presentation about climate strikes** in front of my **class** and **lots of strangers**!

While we were in **Glasgow**, I also joined in with a **huge climate strike** and even spotted **Greta Thunberg** in the crowds! It was the best week ever!

Isabelle, 10

● What an incredible experience, Isabelle!



Isabelle gives her presentation



ART ZONE!



Hi Nat Geo Kids!
One morning as I walked to the **playground** with my **mum** and **little brother**, I was struck by the **beauty of the autumn leaves**. They made me think of **brightly coloured cake icing**! So, I collected **lots of different leaves** and stuck a selection on paper to create this **eye-catching display**. I plan to **cover it** to make it **last longer**, so I can look at it and be reminded of my **autumn walk**.

James, 6

● Great idea, James!



Hello!

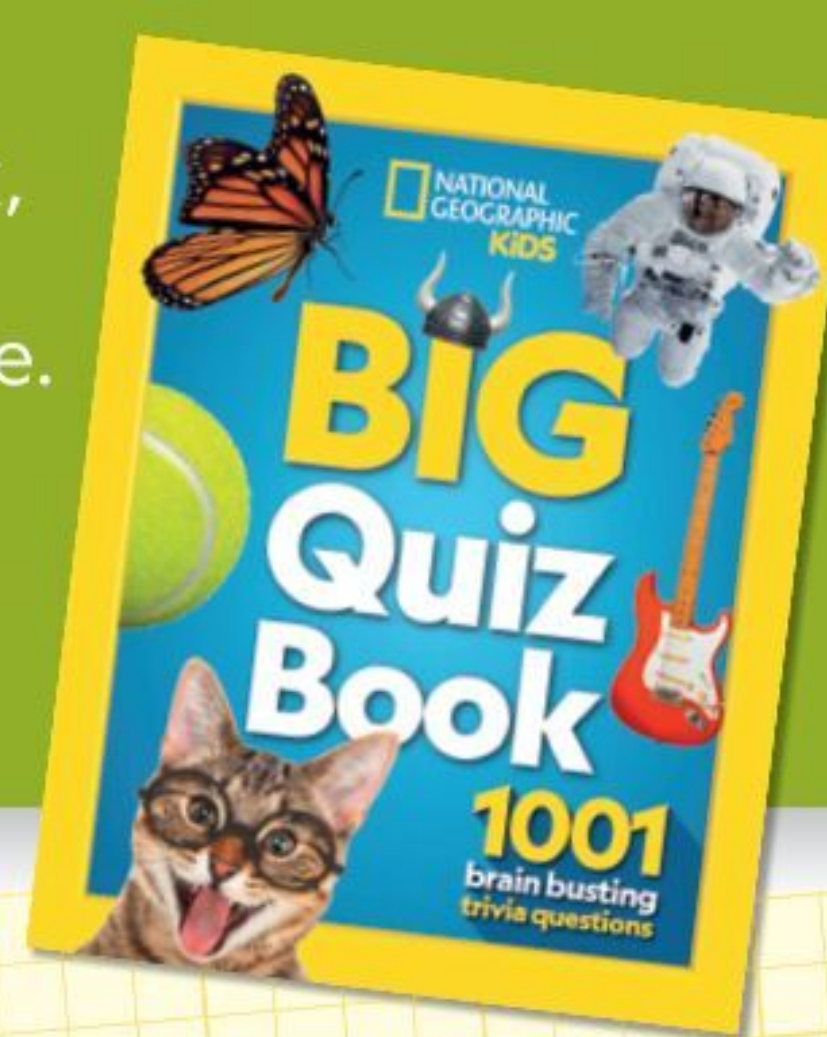
I love **saving my copies** of Nat Geo Kids magazine, but when the **pile of mags** by the side of my bed got too big, I decided to **upcycle** them into a **collage** of all my **favourite animals**! This is the finished **masterpiece**, which is now up on my bedroom wall. Hope you like it!

Charlotte, 10

● Top work, Charlotte – your collage looks fantastic!

We want to hear from YOU! Email kids@ngkids.co.uk with your artwork, jokes, craft pics and pet photos; tell us about your wildlife sightings, hobbies and interests, and share your opinions! We'll print a selection here. Every reader featured on these pages this month will receive a copy of the **Big Quiz Book** from NG KIDS Books!

Available at harpercollins.co.uk



GOOSE FRIEND

This is **Gloria**, my **goose**. I hatched her in our family's **incubator** during **lockdown** in 2021. She is now **very tame**, and we treat her like **one of the family**!

Bluebell, 10

● Gloria looks adorable, Bluebell! Did you know that in China, some police forces use geese as guard-dogs?!



POSTCARD FROM...

LE TOUQUET, FRANCE!



Hi NG KIDS!
During the **October half-term holiday**, my family visited **Le Touquet** in **France**! The weather was great – it was very cold, but there was **loads of sunshine** and barely any rain. One day, we found an **enormous jellyfish** (right) on the soft sandy beach nearby. Then, a few days later, we went to **Authie Bay** and saw some **seals** (above) at sunset. It was amazing!
Adam, 7



● Sounds like a brilliant holiday, Adam!

CHARITY BAKE SALE

Hi Nat Geo Kids.

We hosted a **bake sale** outside our school to **raise money** and **awareness** of **endangered animals** – particularly **snow leopards**, which we both love very much.

We made **flyers**, baked **treats** with our **mum** and even asked our teachers to let us out of class **ten minutes early** so we could **set up the table** before everyone else finished.

The bake sale was a **huge hit** and we sold out of almost everything! We raised **over £110** and donated it all to **WWF**, where it will help snow leopards and other amazing animals.

Elsa, 8, and Kaspar, 6

● Great work, Elsa and Kaspar. Your bakes look delicious!



NATIONAL GEOGRAPHIC

KIDS



COVER STAR!

Name: Betty

Species: Cocker spaniel

Age: 11

Likes: Walking in the mountains and playing with her teddies

Dislikes: Dogs on TV – they make her bark like crazy!

Best friends and owners: Clara, 10, and Max, 7

FUN

STUFF

GAMES,
LAUGHS,
AND LOTS
TO DO!

PLAY!

FROST IN SPACE

In a wintry world far, far away, these awesome **aliens** are having some **frozen fun**! Each of the **20 small scenes** circled below have been turned **upside down or sideways**. Can you find each one in the **big picture**?



FUNNY FILL-IN

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

PARTY ANIMALS

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!

ANSWER ON PAGE 49



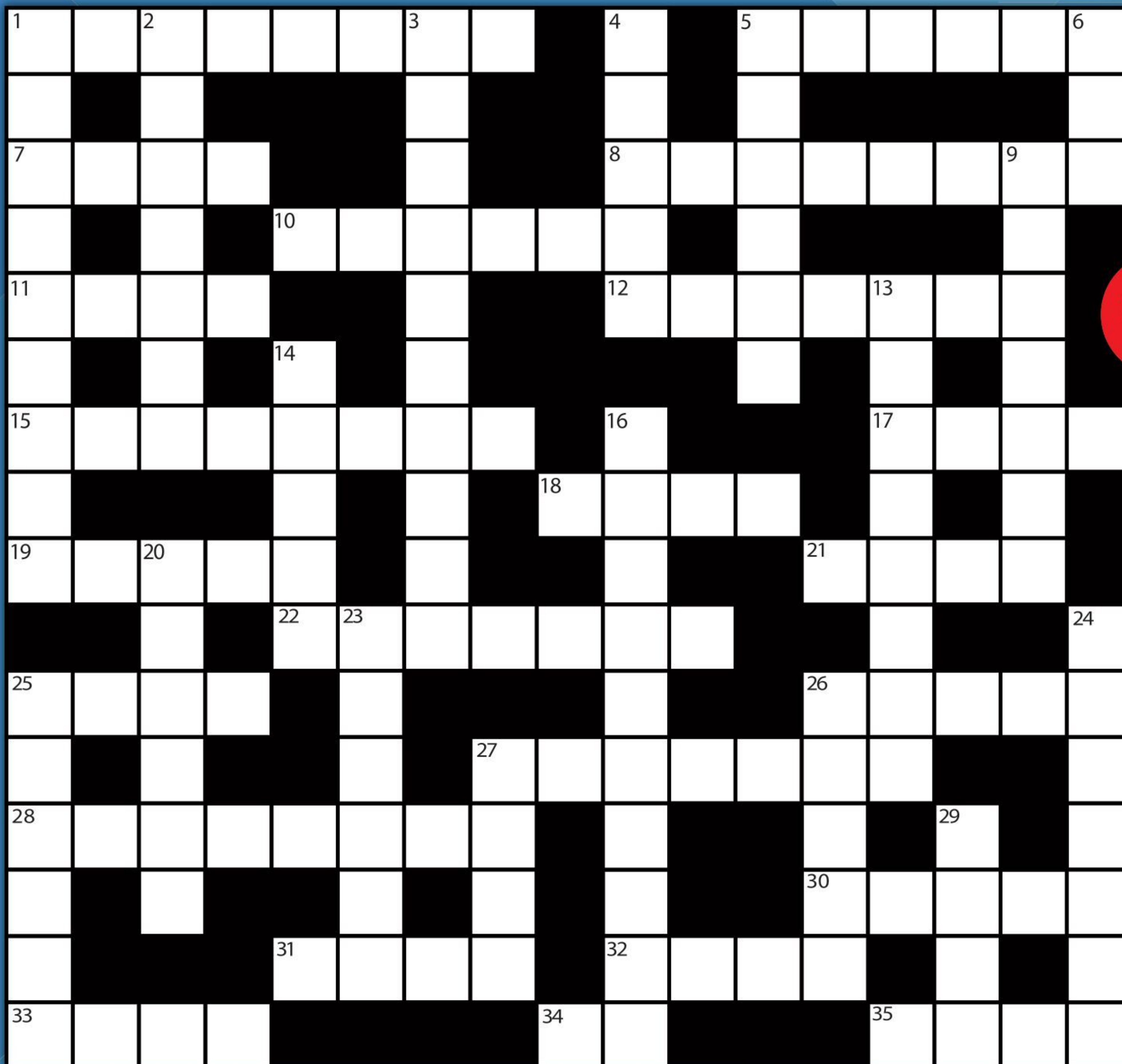
My two friends and I were hosting a(n) _____ Fan Club meeting at my house
 and we were planning to write some fan letters. _____ showed up first – with a pet
 _____! Then _____ more friends _____ with animals.
 So I re-read my invitation. Instead of “Bring your own pen,” I had written “Bring your own pet.” Oops! Suddenly a(n)
 _____ was _____ over our heads while a(n) _____ slid up my
 _____. Then a dog _____ from the _____, and somehow
 _____ started swimming in the punch bowl. A(n) _____ even
 began chasing a cat around the _____, knocking over the _____. It’s going to take
 a lot of _____ grease to clean up this mess!



CROSSWORD

TOP TIP!

If you get stuck on one of the clues, move on to some others. You can go back to it when you've got extra letters!



Answers
on page
49

ACROSS

- 1 Pink bird (8)
- 5 Clever (6)
- 7 Casual way of saying 6 Down (4)
- 8 Moveable fabric window coverings (8)
- 10 Defend yourself against one of these (6)
- 11 What you're called (4)
- 12 Spectacular displays in the sky as daylight starts to fade (7)
- 15 'Pure-bred' pet (8)
- 17 Rabbit-like animal (4)
- 18 The colour you get when you mix red and white (4)
- 19 Daughter of someone's sibling (5)

- 21 Big pus-filled spot (4)
- 22 An unsightly landmark or building (7)
- 25 Someone between the ages of 13 and 19 (4)
- 26 French, toilet-like sink (5)
- 27 Makeup used to extend and darken eyelashes (7)
- 28 Battle in which Napoleon was defeated. Also ABBA song and London Underground station (8)
- 30 Birds use these to fly (5)
- 31 One of two siblings born at the same time (4)
- 32 A detailed proposal for getting something done (4)

- 33 Bottom of your foot (4)
- 34 How you might refer to yourself (2)
- 35 To astonish, daze or shock someone (4)

DOWN

- 1 Cook eggs and bacon in this (6, 3)
- 2 Extremely concerned or given a fright (7)
- 3 Food made from the milk of a smallish horned mammal (4, 6)
- 4 Worn on your feet (5)
- 5 Dull (6)
- 6 Opposite of 'no' (3)
- 9 Opening that you breathe out of (7)

- 13 Country in Africa where coffee is believed to have originated (8)
- 14 Have the same opinion as someone (5)
- 16 Scientific instrument used for viewing very small objects (10)
- 20 Parties, festivals or concerts are examples of these (6)
- 23 Primary colour (6)
- 24 Male child by marriage (7)
- 25 Tall, narrow buildings (6)
- 26 The most common eye colour (5)
- 27 Celestial object rumoured to be made of cheese (4)
- 29 Tied string or rope. Also a measure of speed at sea (4)

TRAIN YOUR B

PICTURE FIT

Write the **name of each picture** in the grid and the white squares will reveal a **beautiful bird!**



2



1



2



3



4



5



6



7



3



5



4



7



6

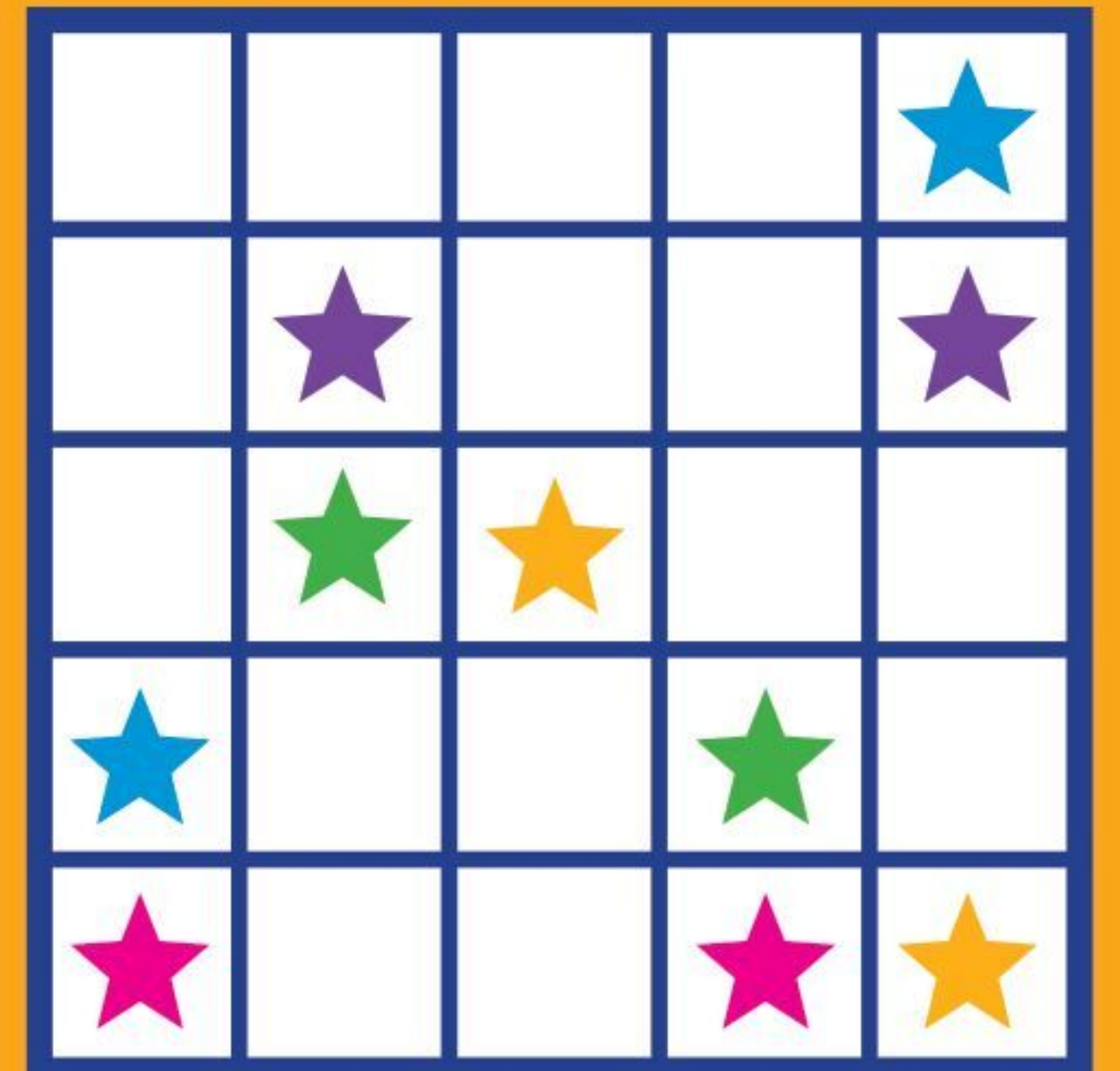
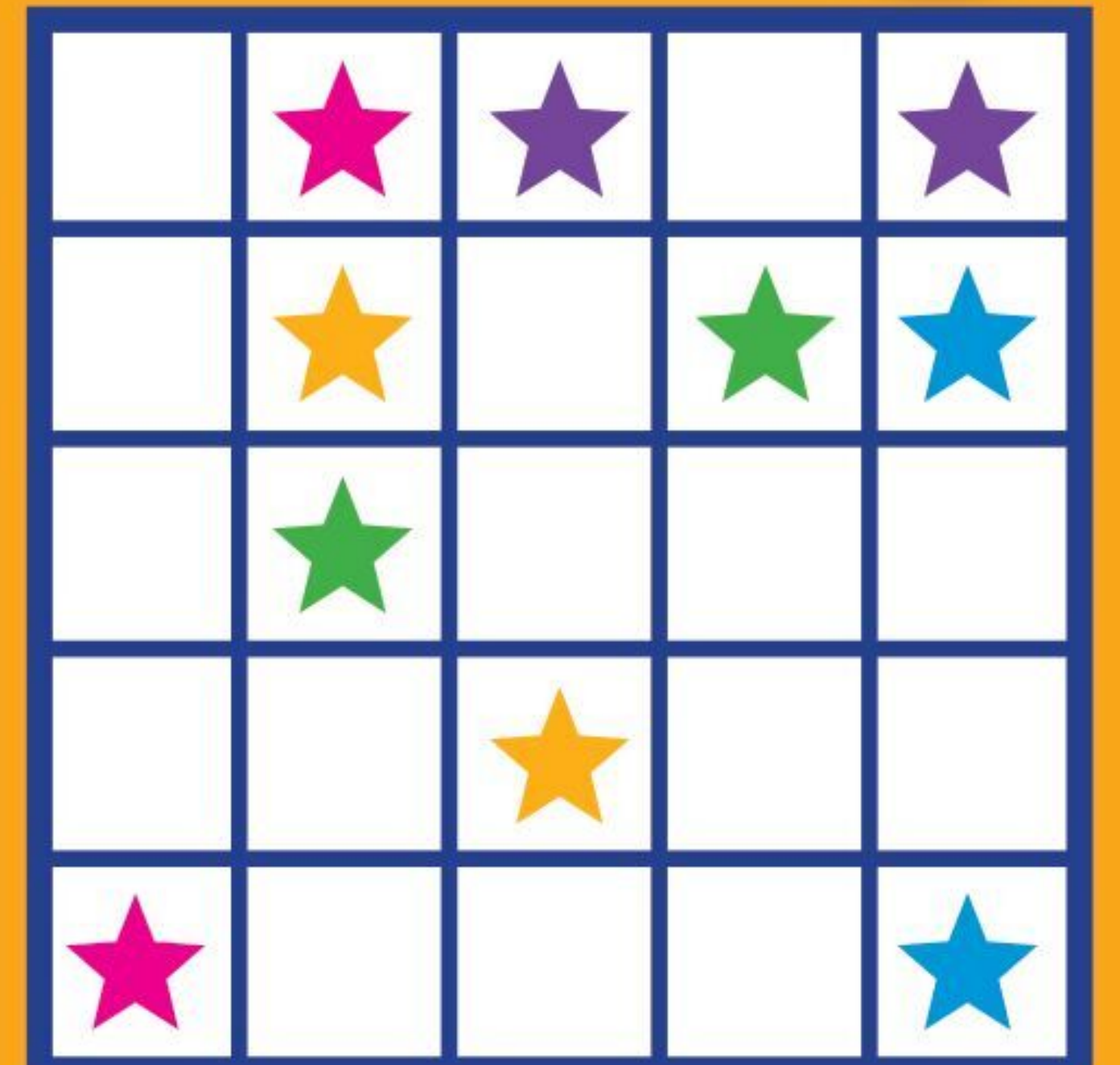


3

STAR LINKS

Draw lines to connect each pair of stars. Only **one line** is allowed in each grid square, and you **can't** use **diagonal lines**. Plus, the lines **mustn't cross or touch** each other. Good luck!

Here's an example to show you how it works!

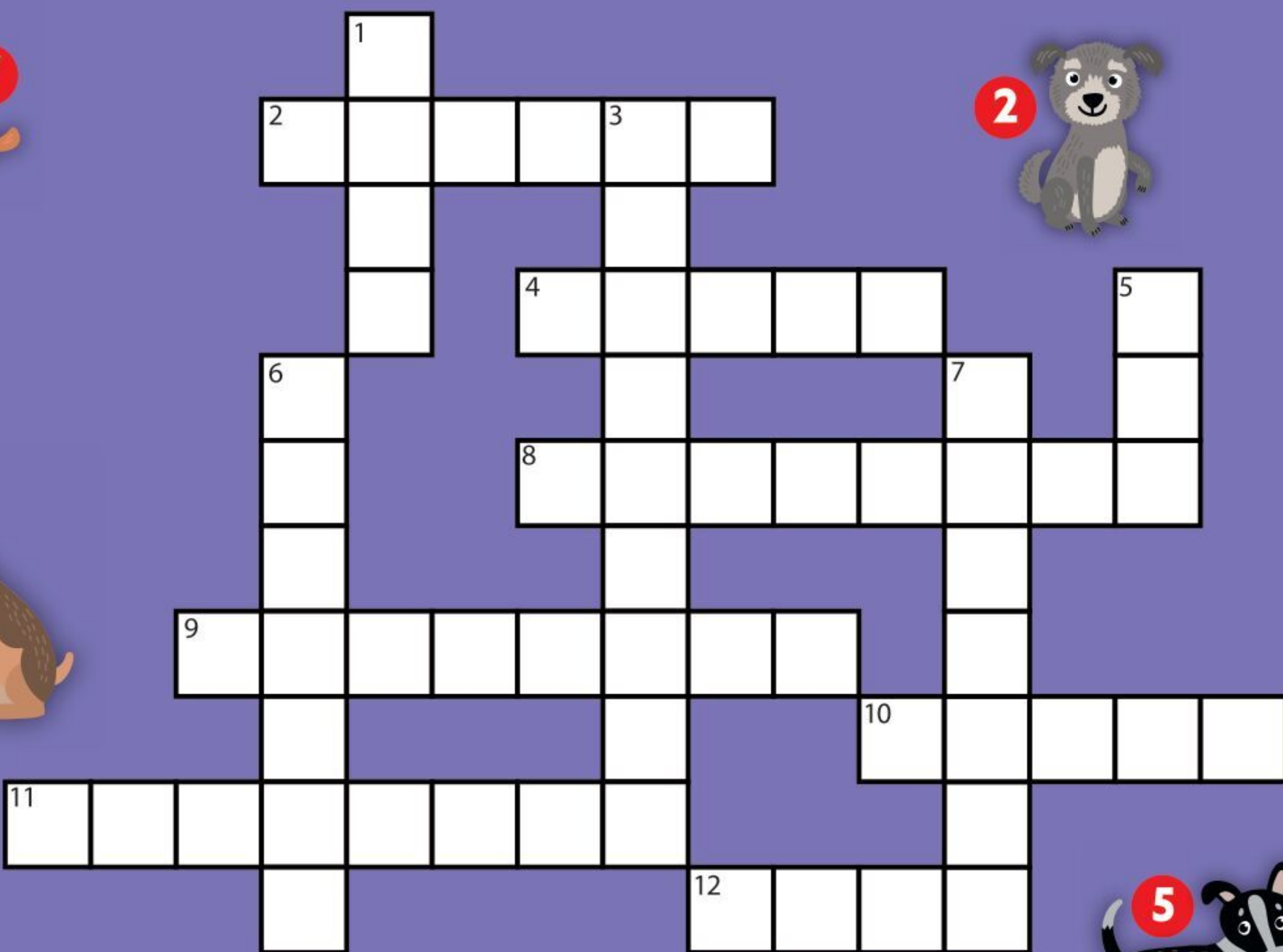


MONTH MIX-UP

Unscramble the names of these **months** and fit them in this crossword puzzle!

ACROSS 2 UAUSTG 4 RIAPL 8 URARYBFE 9 VEBERMNO 10 RCMAH 11 EMDEBERC 12 LJUY

DOWN 1 EUNJ 3 PEMBESETR 5 YMA 6 OCEORTB 7 ANRYJUA



7

2



12

5



ODD ONE OUT

Which word is the **odd one out** in each of these groups?

A Happy, Cheerful, Gloomy, Pleased, Upbeat

B Sandal, Glove, Shoe, Boot, Flip-flop

C River, Stream, Pond, Jungle, Lake

Answers
on page
49



Which two dogs only appear once on these pages?



Complete this **sudoku** by filling all the **empty squares** so every **row**, **column** and **3x3 box** contains the numbers **1-9**.

1	3	4	9	2				7
			6		1	4	3	5
				4	7		9	
	9	8	7	5			6	
3	5	1			8	2		
6	7							8
	6	9			4	7	2	
		3	8	7	6	9	5	
		5	2		3		1	

Can you spot which of these sums are **incorrect**?

- A** $18 - 9 = 9$ TRUE ☐ FALSE ☐
- B** $74 + 7 = 82$ TRUE ☐ FALSE ☐
- C** $24 \div 2 = 12$ TRUE ☐ FALSE ☐
- D** $9 + 13 = 22$ TRUE ☐ FALSE ☐
- E** $43 \times 3 = 86$ TRUE ☐ FALSE ☐
- F** $5 \times 20 = 100$ TRUE ☐ FALSE ☐
- G** $59 - 22 = 36$ TRUE ☐ FALSE ☐



Fill in the **missing letters** to reveal the names of some awesome **musical instruments**...

CLUE! The missing letters are vowels – A, E, I, O, and U.

- 1 GU_T_R
 - 2 CL_R_N_T
 - 3 V__L_N
 - 4 H_RM_N_C_
 - 5 K_YB__RD
 - 6 TR_MP_T
 - 7 S_X_PH_N_
 - 8 H_RP
 - 9 B_GP_P_S
 - 10 __CC_RD__N
 - 11 B_SS__N
 - 12 FL_T_



Follow this **wiggly line** from one dinosaur to the other, and the **letters** you pass will **reveal the name** of a **super-scary dino predator**!



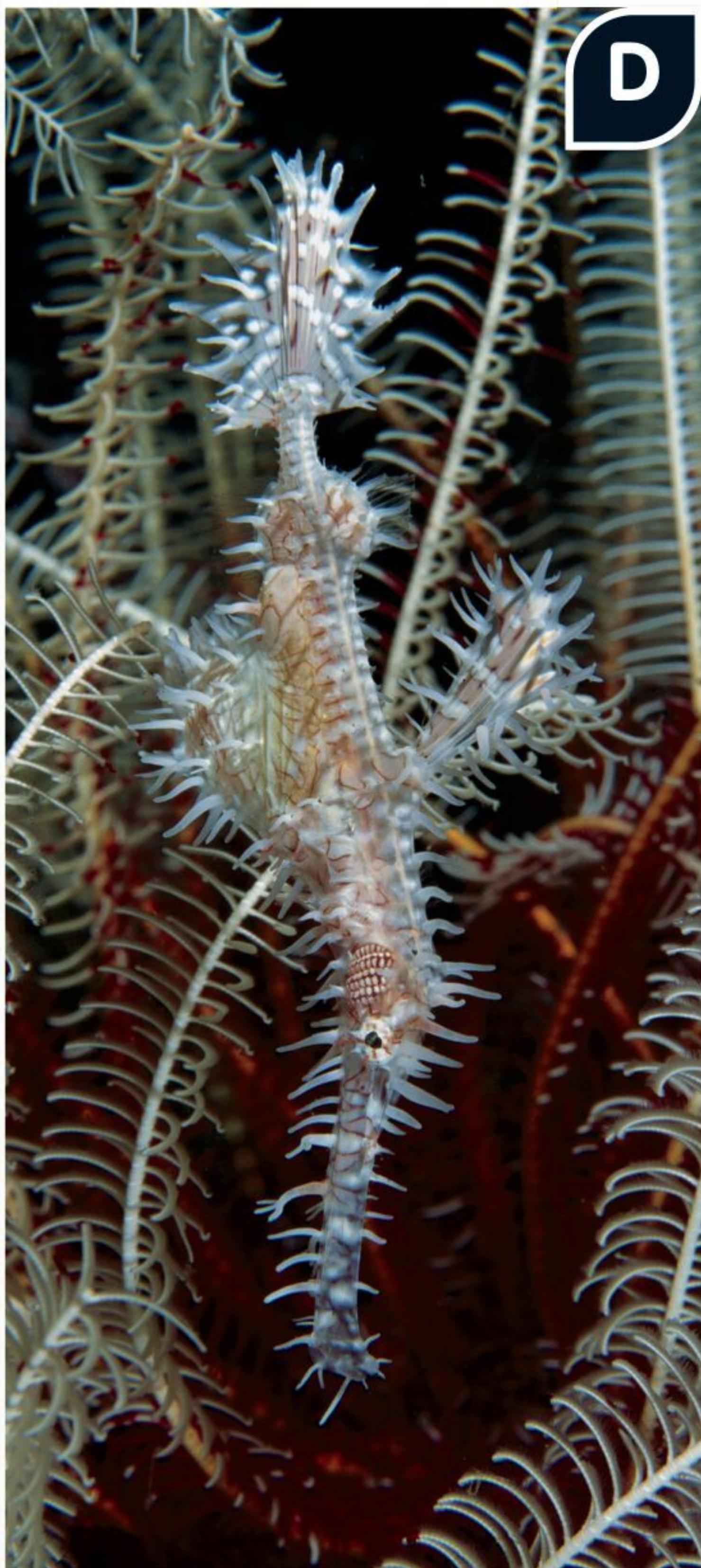
FIND THE HIDDEN ANIMALS

Animals often **blend in** with their **environments** for **protection** or to **help them hunt**. Find the creatures listed below in the pictures, writing the letter of the **correct photo** next to the **name** of each **animal**. *Answers on page 49*

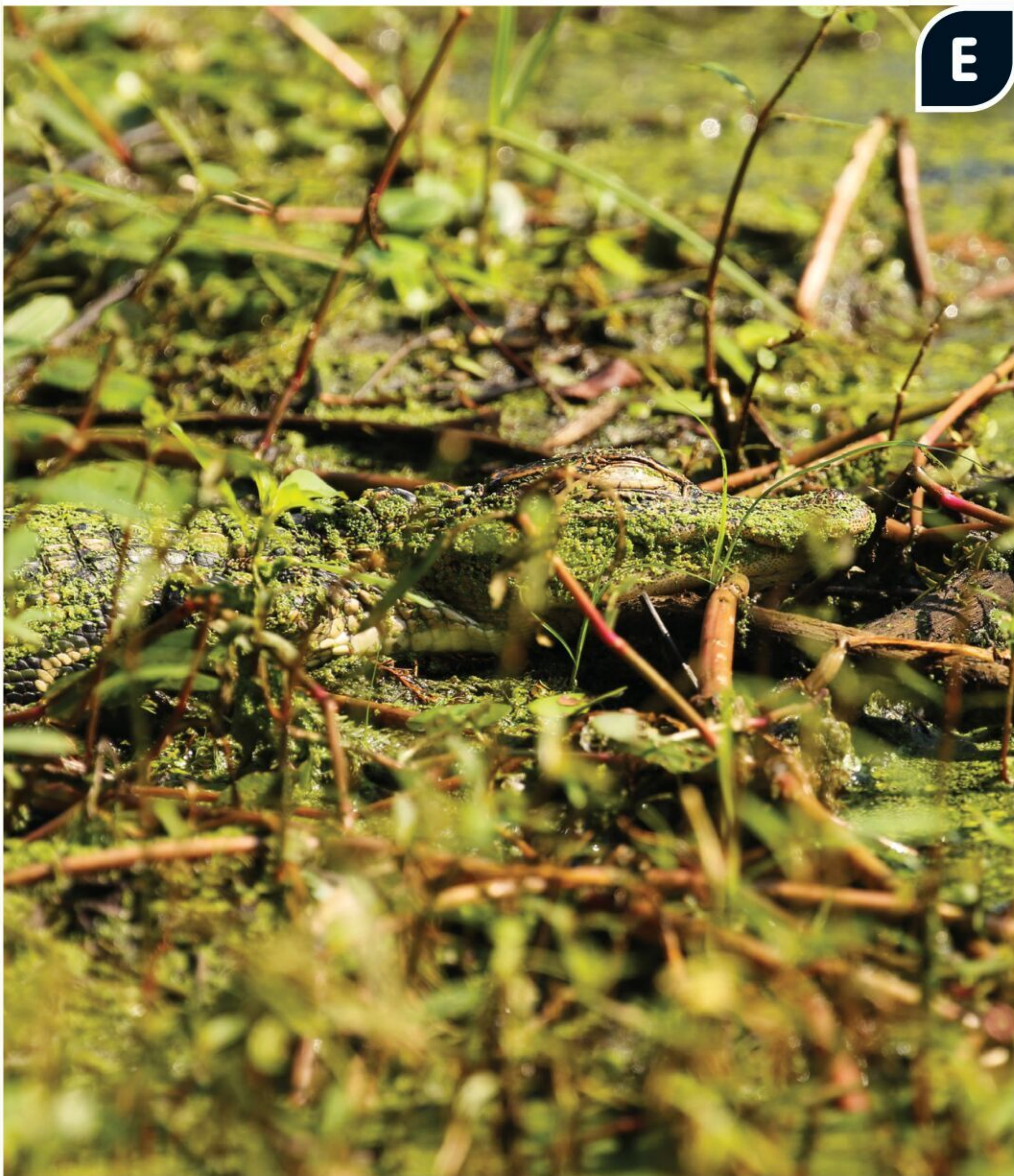
1. Huntsman spider _____
2. Ornate ghost pipefish _____
3. Pallid scops owl _____
4. Gaboon viper snake _____
5. Texas horned lizard _____
6. Giant Pacific octopus _____
7. Alligator _____



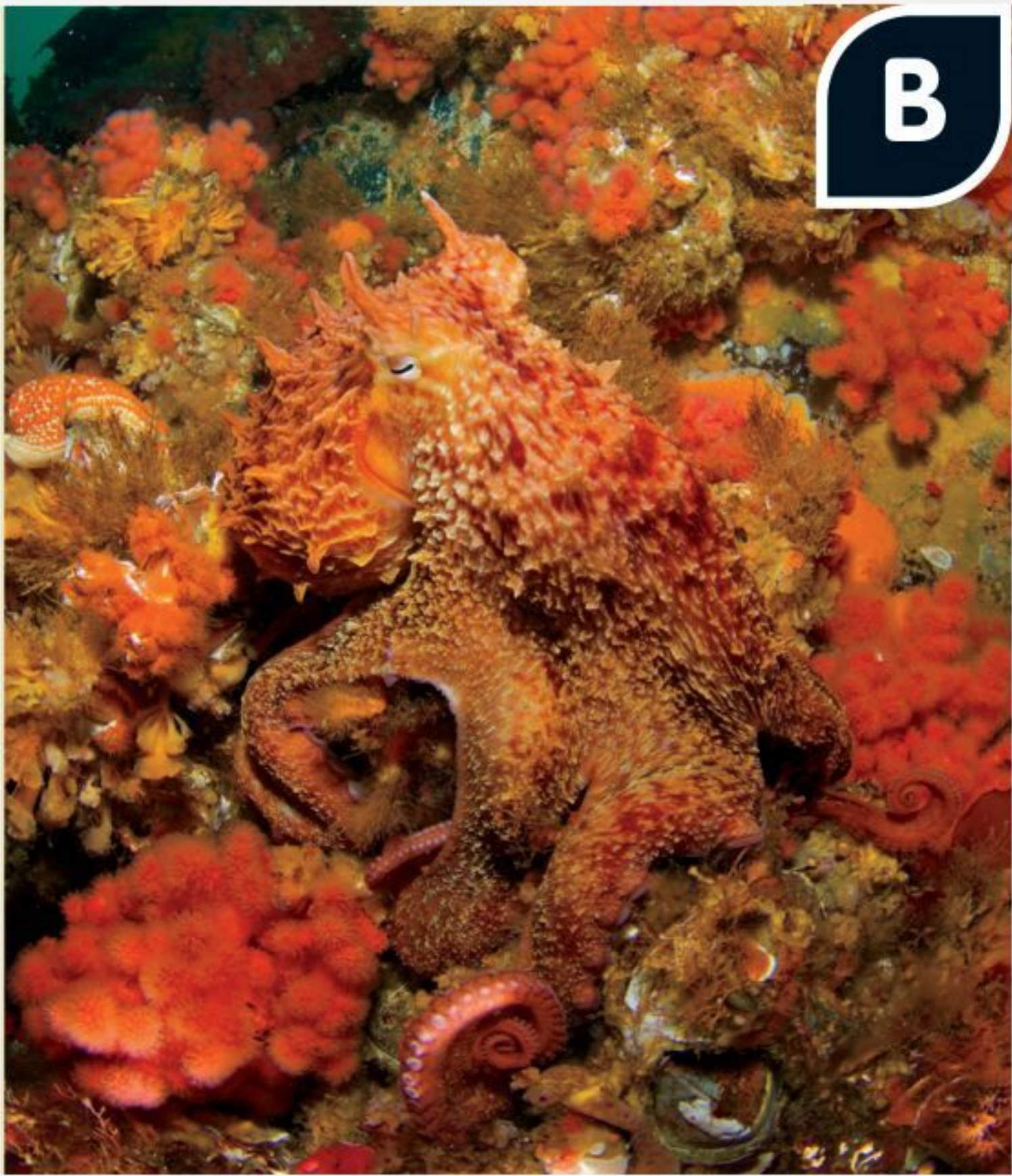
A



D



E



Noorhussain / Getty Images (a); Todd Mintz / NPL / Minden Pictures (B); © Getty Images UK (C); Fred Bavendam / Minden Pictures (D); © Getty Images UK (E); © Getty Images UK (F); Rolf Nussbaumer Photography / Alamy (G)

FUN STUFF MAKE IT

INCREDIBLE EXPERIMENTS

Three cool science tricks for you to try!

PENCIL POWER

Lift up a bottle of rice using just a pencil – and some science!

What to do:

Fill an empty small water bottle with uncooked rice using a funnel. Now you're going to lift up the whole thing using just a pencil! Jab the pencil right into the rice and pull it out. Repeat this a few times. Eventually you'll feel the rice gripping the pencil. When this happens, carefully lift the pencil – the bottle should lift up, too!



How it works:

When two objects touch there is friction between them. Friction can slow moving objects down and even stop them from moving completely. The more two objects touch, the more friction there is.

In this experiment the rice is jiggled about until so much of it is touching the pencil that the friction stops it from moving. The rice and pencil can be lifted up as one.



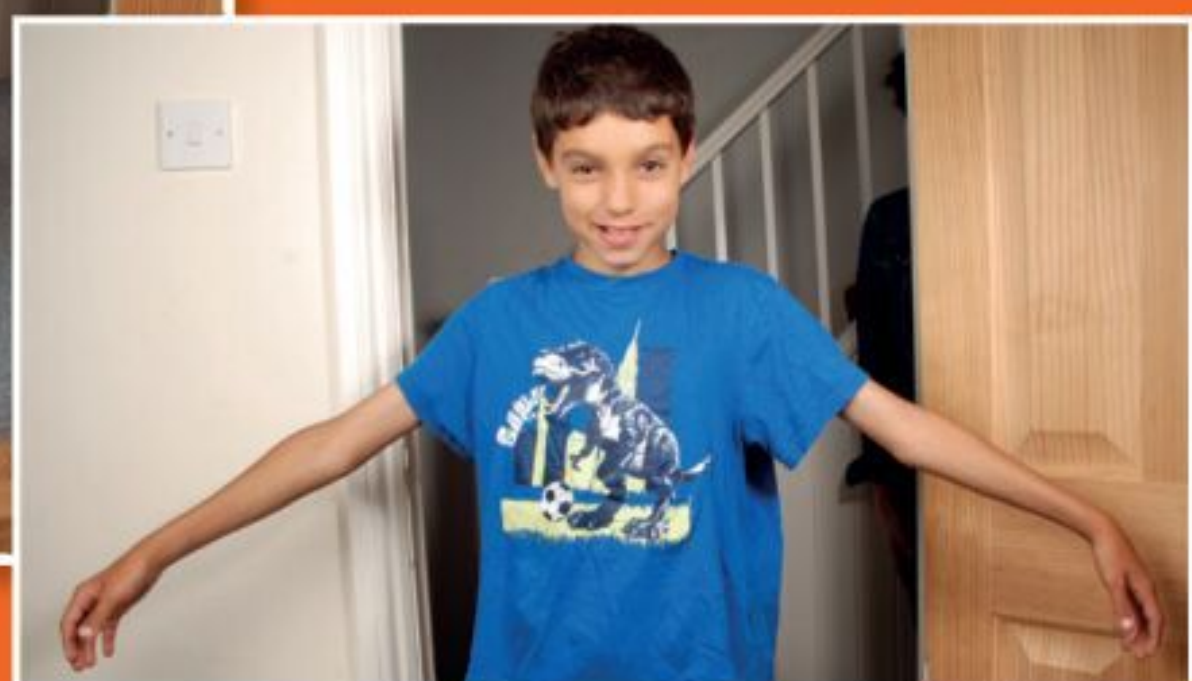
FLOATING ARMS

Be amazed as your arms rise up into the air as if by magic!



What to do:

Stand still in a doorway and push the outsides of your wrists against both sides of the doorframe. Push as hard as you can (without hurting yourself) for about one minute, then move away from the doorway. Your arms should mysteriously rise into the air without you even trying to move them. Freaky!



How it works

To make a muscle move, your brain sends a chemical message to that muscle, saying "move!" The whole time you're pushing on the doorframe, your brain is sending that message to your arm muscles, but they can't move because the doorframe is in the way. When you walk away from the frame, some of this chemical message is still hanging around your arm muscles and so it makes them lift, even though your brain is no longer telling them to do so. Cool!

RUNAWAY PEPPER

See water's invisible forces at work with this neat science trick...



What to do:

Pour water onto a plate and sprinkle lots of black pepper on top. Squirt a drop of washing-up liquid on to your finger, then touch this finger into the centre of

the water. The pepper will all dash away from your finger as if it's being pulled by an invisible force.

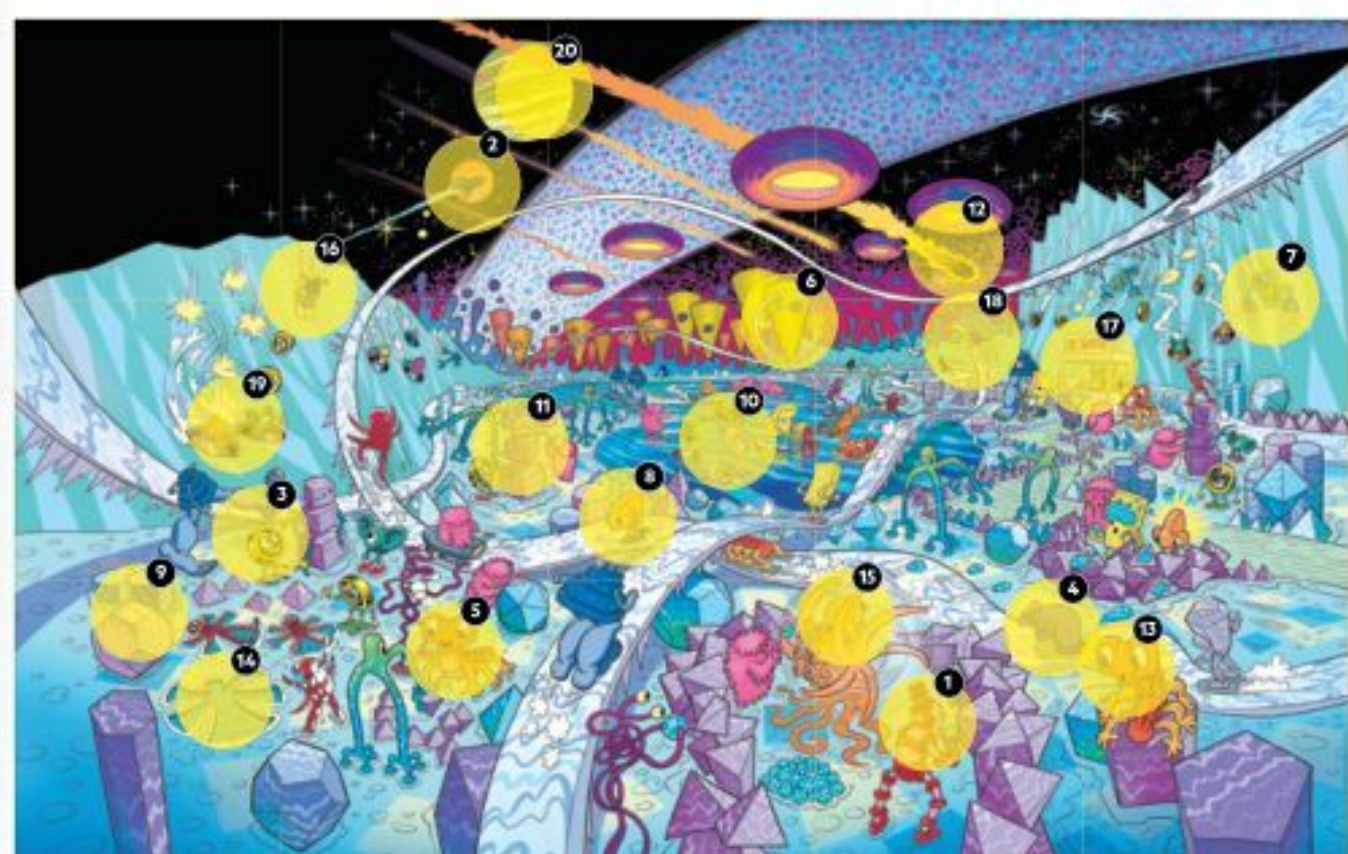
How it works

Well, it is actually being pulled away by a force. Water is made up of tiny particles called molecules and these all pull on one another like a group of people, stretched out holding hands. Washing-up liquid makes this force weaker, and so the water (and pepper) are pulled away from your finger by the other surrounding water molecules. Super science!

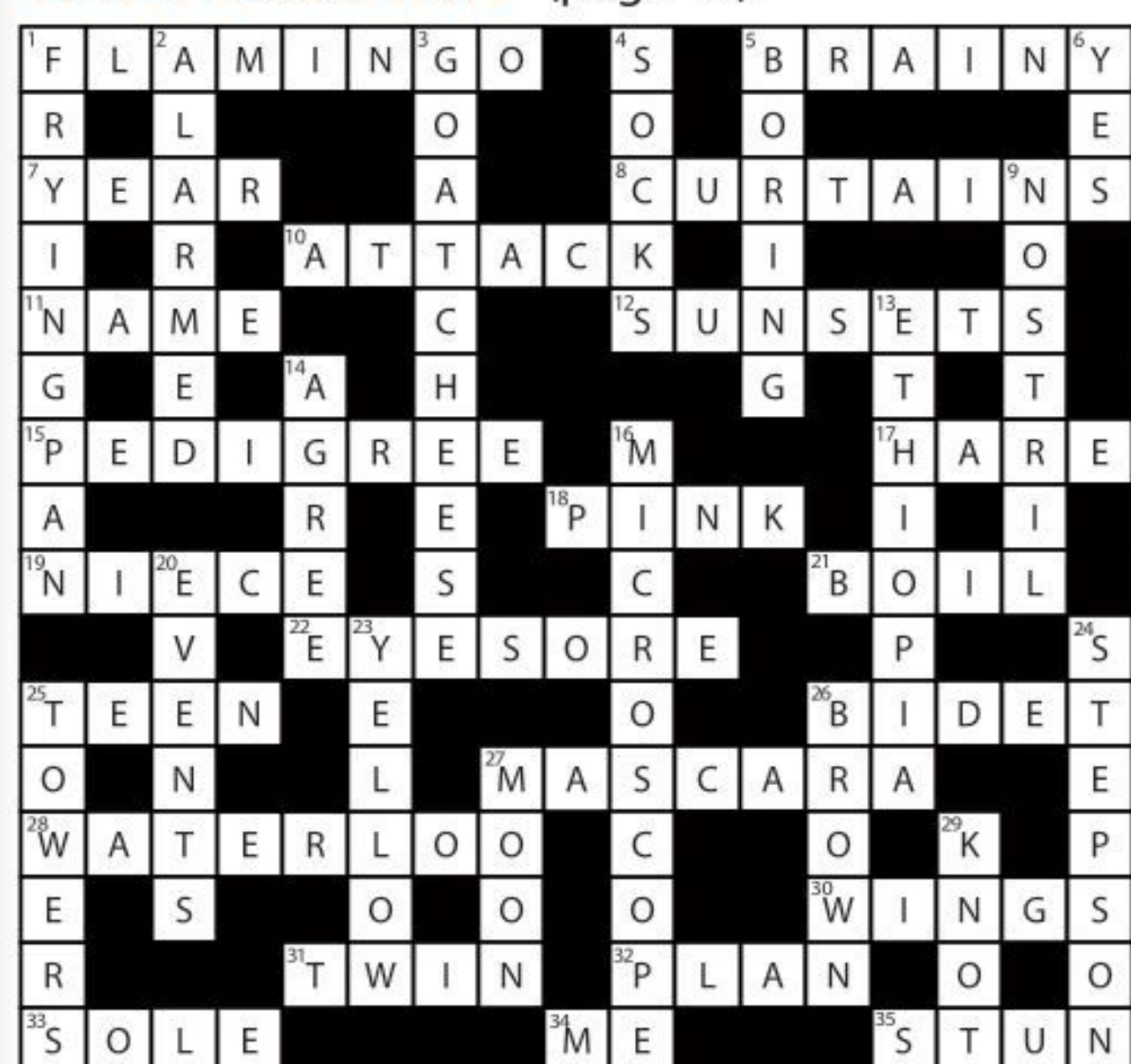


FUN STUFF ANSWERS

FROST IN SPACE (page 40-41)



CROSSWORD (page 43)



TRAIN YOUR BRAIN (page 44-45)

PUP PATROL

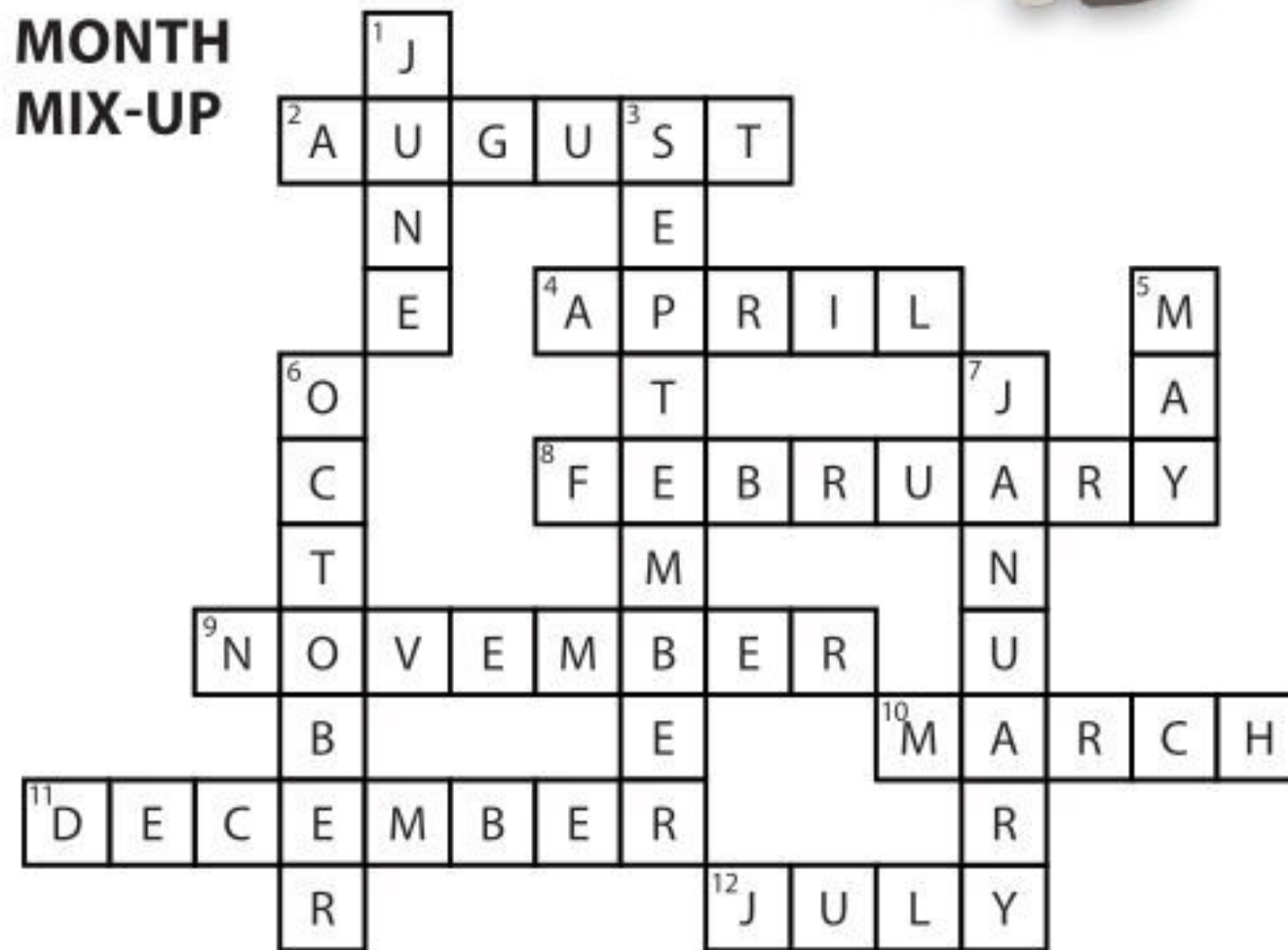
2 and 10 are only shown once.



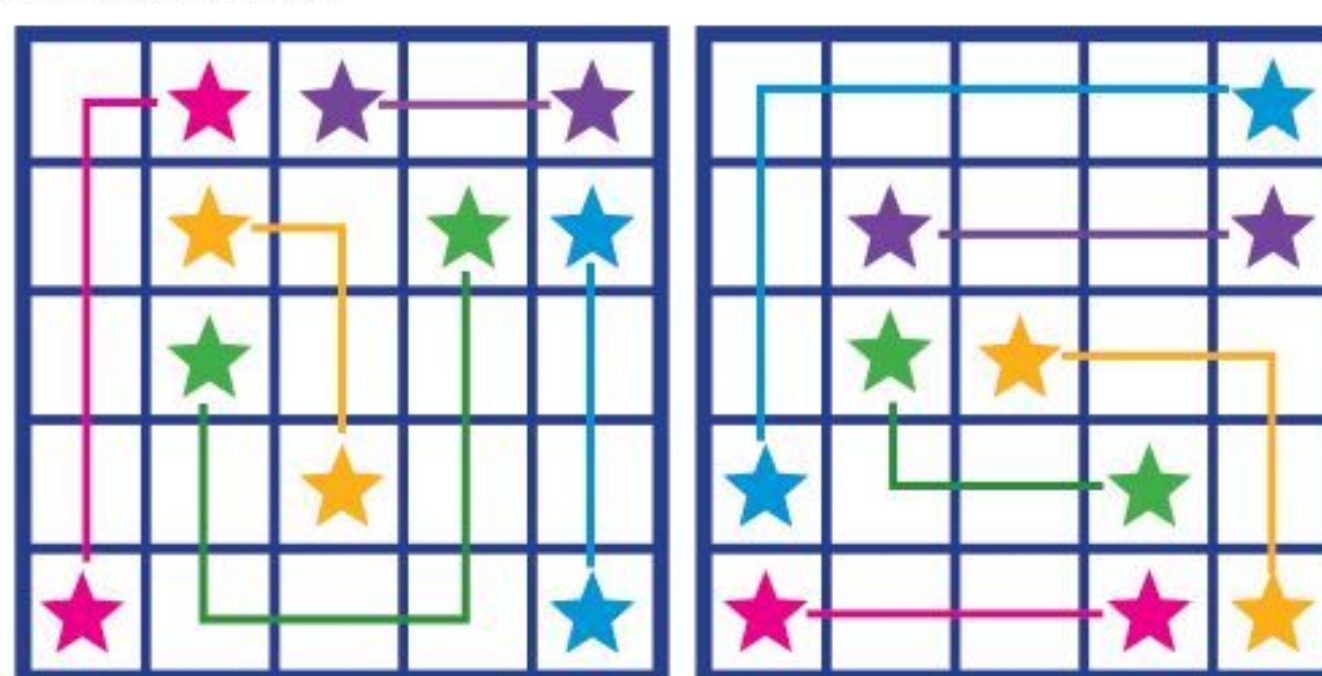
PICTURE FIT

Peacock.

MONTH MIX-UP



STAR LINKS



ODD ONES OUT

A-Gloomy; B-Glove; C-Jungle.

MEGA SUDOKU

1	3	4	9	2	5	6	8	7
9	2	7	6	8	1	4	3	5
5	8	6	3	4	7	1	9	2
4	9	8	7	5	2	3	6	1
3	5	1	4	6	8	2	7	9
6	7	2	1	3	9	5	4	8
8	6	9	5	1	4	7	2	3
2	1	3	8	7	6	9	5	4
7	4	5	2	9	3	8	1	6

SPELLING CHALLENGE

1-GUITAR; 2-CLARINET; 3-VIOLIN; 4-HARMONICA; 5-KEYBOARD; 6-TRUMPET; 7-SAXOPHONE; 8-HARP; 9-BAGPIPES; 10-ACCORDION; 11-BASSOON; 12-FLUTE

TRUE OR FALSE?

A-True; B-False, the correct answer is 81; C-True; D-True; E-False, the correct answer is 129; F-True. G-False, the correct answer is 37.

DINO DISCOVERY!

SPINOSAURUS.

HIDDEN ANIMALS! (page 46-47)

1-F; 2-D; 3-A; 4-C; 5-G; 6-B; 7-E.

THE LAST LAUGH

Q. What do you call an unlucky lynx?
A. Jynxed!

Q. What does a wildcat do when it's got something in its eye?
A. It blynx!

Q. Why was the lynx frowning?
A. It was in a bad mewd!

Q. What do you do if you want to watch cat videos online?
A. Click on some lynx!

Q. Why was Darwin excited when he saw a wild cat?
A. It was the missing lynx!

Q. What did the luge rider say when he came last?
A. "You win some, you luge some!"

Q. What happened when the snowboarder fell off his board?
A. He had a melt down!

Q. Did you hear about the lonely long-distance skier?
A. He felt iceolated!

Q. Why do people watch the Winter Olympics?
A. It's snow much fun!

Q. How do skaters greet each other?
A. "Have an ice day!"

Q. What do skaters have to do on a first date?
A. Break the ice!

Q. What do winter athletes eat for breakfast?
A. Frosted flakes!

Q. Why did the ice hockey game have to end?
A. The players ran out of puck!

In next month's NG KIDS...

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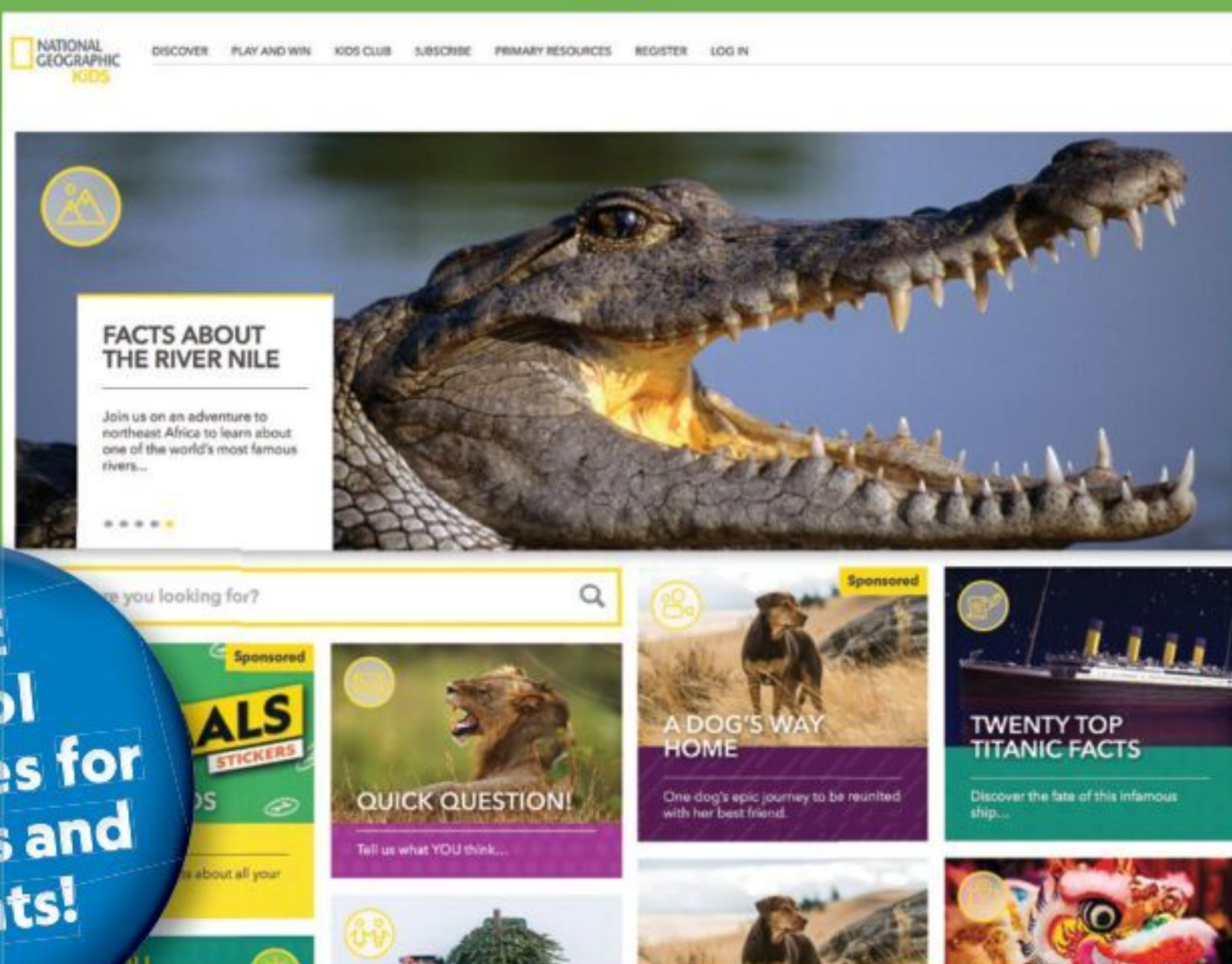
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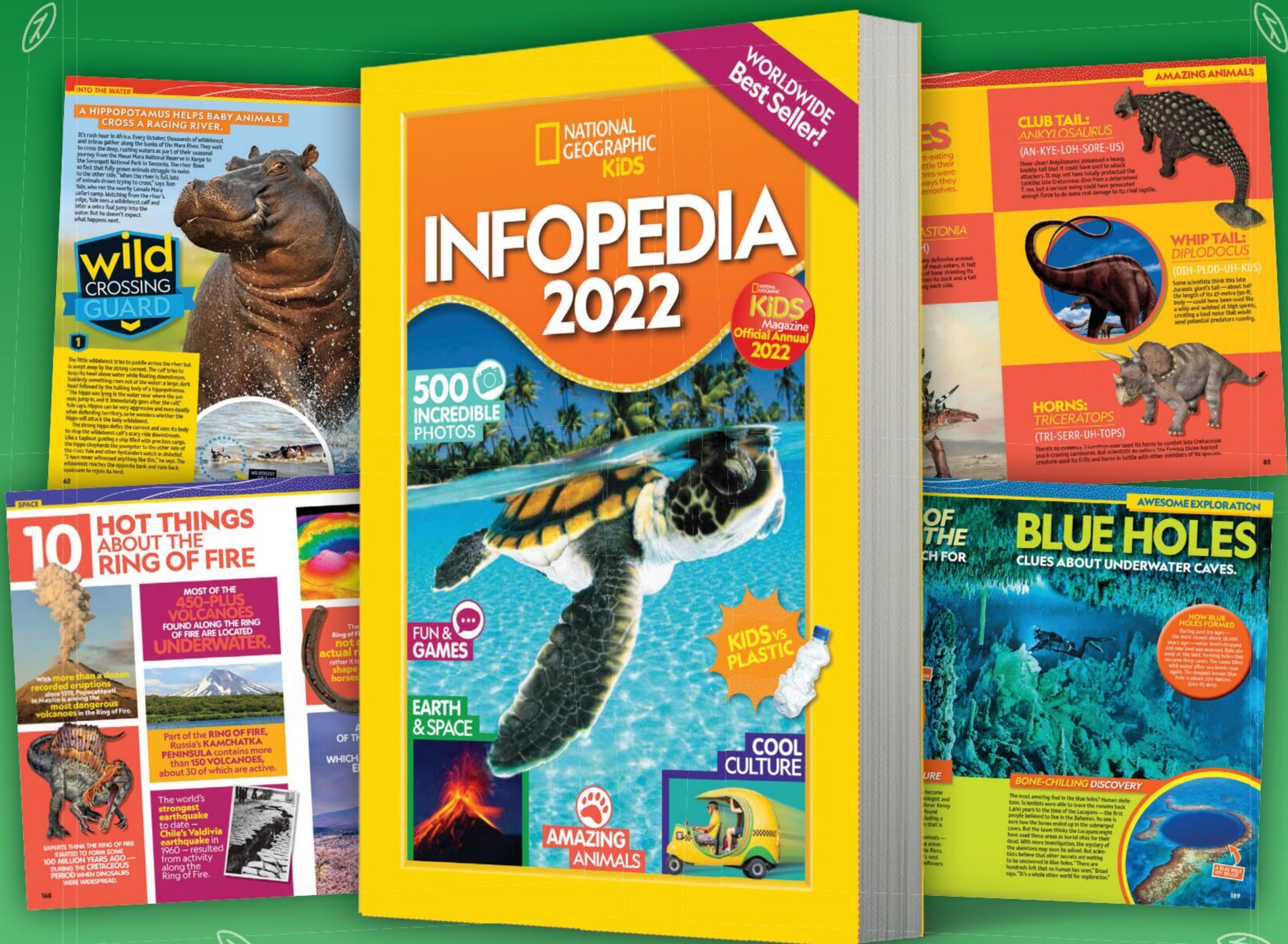
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