Made in RSA!

Celebrating 10 YEARS Supernova

Supernova

The mag for curious kids

Vol 10.6

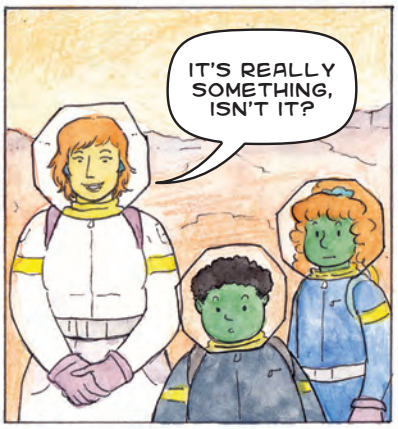
Deep Dive with Dolphins

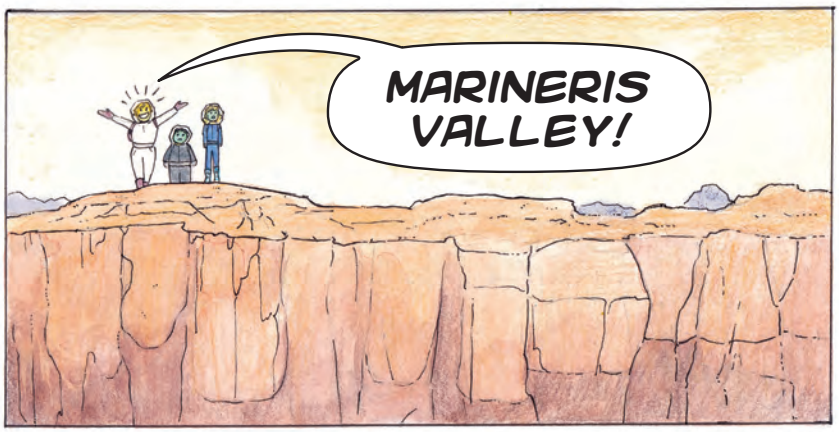
PUZZLES | SCIENCE | NATURE | ACTIVITIES | SPORTS | COMICS

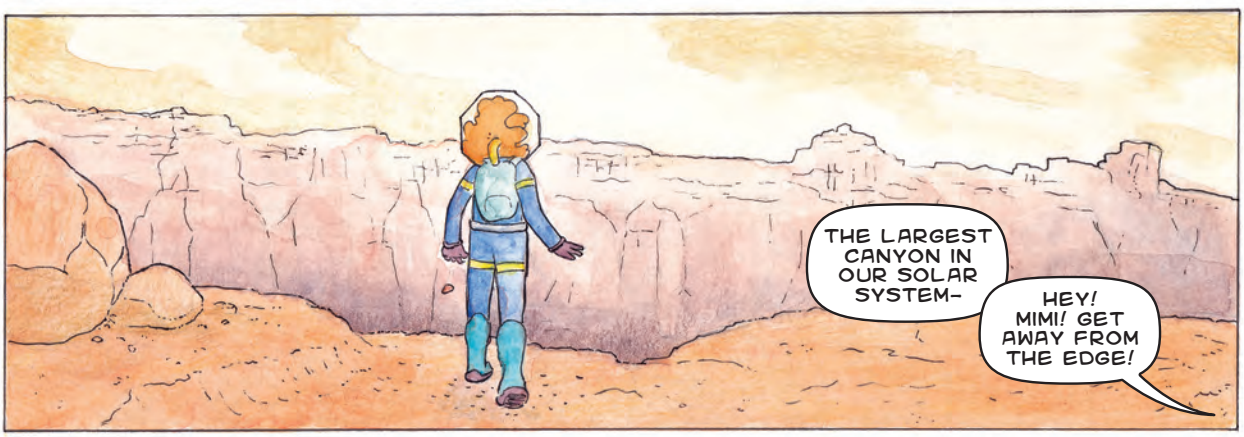
BK PUBLISHING

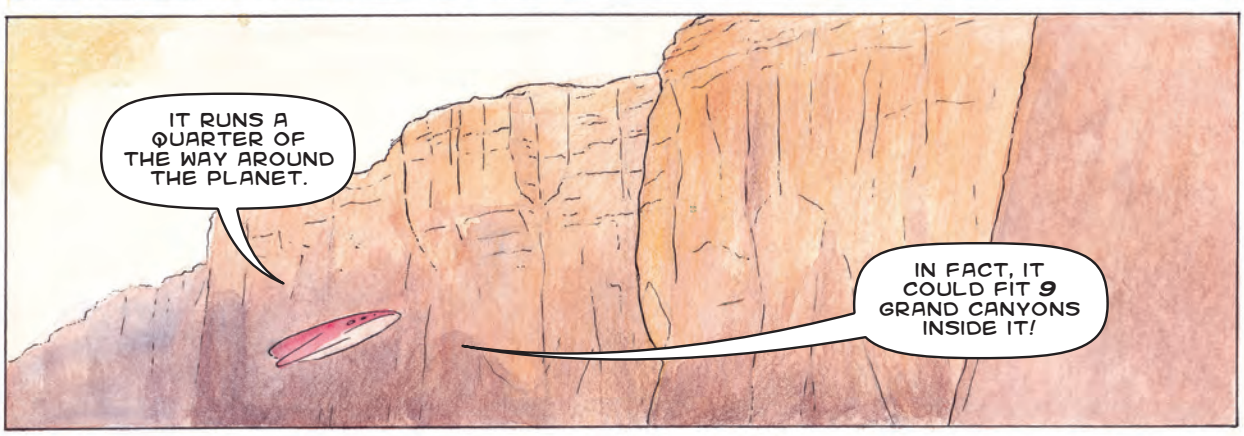
Story and artwork
Maya LeMaitre

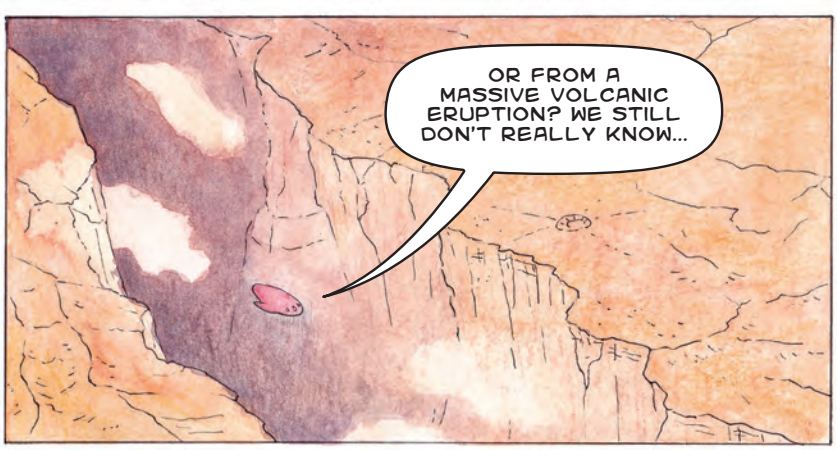
MIMI'S LIFE ON MARS











Hi SuperKids

Candice

With spring around the corner, what better way to celebrate the start of warmer weather than diving deep into the wonderful world of dolphins? Not only are dolphins one of the most intelligent, caring and friendly mammals (after humans!), but they sure do know how to have fun!

Because dolphins are mammals, they must surface every few minutes to take a breath. When they do this, they often like to show off! You may have seen them jumping, riding waves, blowing bubble rings to swim through and passing objects to each other. Dolphins understand that it is important to play and have fun. And, playing and having fun is always better with friends!

Sometimes, we need to step away from our daily routine to 'take a breath', just like dolphins. When you do, remember to be playful and silly, and enjoy your time with your friends and family.

Enjoy diving into this fun-filled issue. Stay curious, kids!

Get to know the Supernova Team!

Oratile
Supernova intern

Hi, I'm Oratile! I am part of the Supernova Sales and Marketing team. I create videos and images for all our social media platforms, work at events and help pack orders!

If you had a restaurant, what would you serve?

A candy buffet section! Who doesn't love sweet treats even if you're eating at a fancy restaurant?

If you had to eat only one food for the rest of your life, what would it be and why?

Definitely pap, a South African classic! I love how versatile it is – you can have it soft or even a bit stiff, with milk or even with stew. Basically, its man's greatest invention to date.

What's the most ridiculous fact you know?

The cookie monster has a real name – Sid!

I love going on adventures and exploring new places. The Gautrain helps me get around to all of the best events!

What's your favourite thing about being at Supernova?

I love being surrounded by such creative people, and I love learning from everyone on the team!

My little sister and I love taking random photoshoots together.

I'm definitely a plant mom – you can never have enough plants!

Looking for more? @supernovamag supernovamagazine

Supernova

ISSN: 2224-1442
EMAG ISSN: 2413-8207
Legal deposit: 09/2022

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Published every two months by:
BK Publishing (PTY) LTD
Reg: 2015/060893/07

P.O. Box 6314
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South Africa

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Printed by:
Zero Plus Printers

The Regulars

The Features

Answer for Brain Games on page 48.

Ask Jules?

Thomas (9) from Pretoria asked us:

Does hair grow faster in the summer?

Jules

We've got ourselves a hairy situation this time around! The simple answer to your question is yes – heat and sunlight does boost your hair's growth! Higher temperatures and more sunlight in summer means there is a greater supply of the nutrients your hair needs. This produces keratin, which is very important for hair growth. But, how quickly your hair grows is not just about which season it is. Rather, it is connected to the climatic conditions of each season. So, if you have a colder summer with less sunlight, your hair won't grow as quickly as what it normally would. The opposite goes for if you go on holiday to a warmer climate – your hair will grow faster because of the heat and longer periods of sunlight. Humans are very unique in this way. Most mammals lose hair during hot weather in order to stay cool, and grow thicker hair during colder weather to help keep warm.

Printing coral

Coral reefs and their ecosystems play a huge part in nature. From protecting our coastlines from storms and erosion, to providing an income to over half a billion people, they are super important!

So, hearing that 22 species of coral reef are endangered is alarming! Coral reefs start off as little organisms called polyps that clump together. Climate change causes water temperature in the oceans to rise. High water temperatures bleach the coral and it dies.

Luckily, when humanity puts their brains together, some pretty amazing things can come from it! Coral restoration involves 3D-printing the structure of a coral reef. It is secured underwater and small pieces of coral are attached to it in the hopes that it will grow.

The 3D printed coral reefs that have been installed have already attracted some curious fish and provide homes for small sea creatures like crustaceans, sponges, and anemones!

Jules

Send your cool creations or stories to supernova@bkpublishing.co.za and you could be part of our Reader Corner!

Mind blowing pictures from the James Webb telescope

Images by NASA, ESA, CSA, and STScI

The James Webb Space Telescope is an amazing scientific feat that was created by three different space agencies at once! NASA, along with the European Space Agency and The Canadian Space Agency constructed this telescope together.

It was launched on the 25th of December 2021, even though its construction started way back in 2004! Finally, on the 12th of July 2022, NASA released the first full colour pictures taken by this massive telescope.

These photos give a wonderful view of galaxies that have never been seen by humans before and they look a little something like this!

Creature FEATURE

Photo: Vitalii Kalutskyi

Photo: Christian Schlamann

Photo: Belaipesse

Have you ever heard of a sea cow? These marine creatures, better known as Dugongs, have earned this unique nickname! They spend hours and hours every day grazing on sea grass, just like regular cows do!

These gentle underwater giants can get up to 3m long and weigh between 300 and 800kg! Dugongs can live to around the age of 70. They are also mammals, meaning that like whales and dolphins, the mother gives birth to live babies and produces milk to feed them. Babies can nurse on their mothers for up to a year and a half.

They can be found in many areas around the world, including Dubai and other Arabian countries. Sadly, Dugongs are nearing extinction. This is because of human development near their homes, and other human activities like fishing and boating.

ISLAND DWARFISM

Pygmy Marmoset
Photo by Egor Kamelev

Island dwarfism is a natural process during which animals don't grow as big as they are supposed to. This happens when animals live in an extremely small environment, and they cannot move around as much. Insular dwarfism mostly happens to animals who live on islands, but it also happens to animals living in zoos and other small spaces!

When the word 'pygmy' is used to describe something, it means that it is not as big as it typically should be. We use this word quite often when speaking about creatures that have been affected by island dwarfism.

Pygmy Shaman
Photo by Kazimierz Nowak

Did you know people could be affected by island dwarfism as well? Taken somewhere between 1897 and 1937, this photo shows a Polish photographer speaking to a pygmy shaman in Africa. #notshortjustfunsize #butfirstletmetakeaselfie

Pygmy Seahorse
Photo by Martin Cathrae

Spotting this seahorse should be an extreme sport, because pygmy seahorses are very good at blending into their background. The fact that they are super tiny is a huge advantage! #nowyouseame #i'mjustababy #notaniknak

Common Dwarf Mongoose
Photo by Kenyannydenny

Lo and behold, the smallest carnivore in Africa! After a long day of hunting and worrying about predators, this poor guy must be exhausted. #iclockoutatfive #sodone #sillygoose

Borneo Elephant
Photo by Bernard Dupont

This breath-taking picture shows a Borneo elephant playing in water in Malaysia. This one looks like it wants to be friends! #tusktothehand #ivorytoomuch #wrinklesarethenewblack

Pygmy Hippopotamus
Photo by Gathigia Kinyua

Pygmy hippos, the fussiest of the pygmy animals, will only live where they have water, a swamp, and a forest. They are super shy and only eat at night. #hippopotayass #suchapygmygirl

Island Fox
Photo by Shanthanu Bhardwaj

This little guy is one of six small species that live on the Channel Islands of California. Each species is unique to the island they live on! #whythelongface #don'tgetyourtailinatwist #i'mallears

Get to know the Composers

Enoch Sontonga

Composer of South Africa's National Anthem

Enoch Mankayi Sontonga was born in Uitenhage, Eastern Province (now Eastern Cape) around 1873.

He trained as a teacher at the Lovedale Training College. After that, he was sent to a Methodist mission school in Nancefield, near Johannesburg in 1896. He taught here for nearly eight years, and was also the choirmaster!

Enoch was a well-known and respected poet, and sometimes preached in his church.

He composed the first two stanzas of 'Nkosi sikelel' iAfrika' in 1897. He originally intended it for his school choir.

In English, the title of the poem means 'God Bless Africa'.

Sontonga's choir as well as other choirs sang the Xhosa hymn around Johannesburg and Natal. This song made a strong impression on all audiences. In 1925, the ANC officially adopted it as a closing anthem for its meetings.

The song spread beyond the borders of South Africa and has been translated and adapted into a number of other languages.

In 1994, it became part of South Africa's national anthem! A well known Xhosa poet, S.E.K. Mqhayi, wrote a further seven verses.

South Africa's national anthem 'Nkosi Sikekel' iAfrika' was first recorded on 16 October 1923 by Solomon T. Plaatje, accompanied by Sylvia Colenso on the piano.

Enoch's Xhosa poem also makes up parts of the national anthem of Tanzania and Zambia, and has been sung in Zimbabwe and Namibia for many years.

Enoch died in 1905, at the age of 32.

Over the years, his song has brought comfort and joy to millions of people!

For many years, the location of Enoch's grave was unknown. When it was found, Nelson Mandela declared his grave a national monument and unveiled a great memorial.

Comic Artist

Hi, I am Maya LeMaitre!
I am a comic artist and illustrator. I created Mimi's Life on Mars for Supernova magazine, which is out now as a graphic novel! I also draw cartoons and other illustrations.

What is a comic artist?

Comics are stories told in a sequence of panels, often with words and sounds. Comic artists can be the sole creator of a comic, which means that they create the story, write and illustrate it, or they can work as part of a team that creates the comic. Comics can appear in print – in magazines, newspapers and books – or online, like webcomics or on social media.

Where do you find your inspiration?

Inspiration is unpredictable. It can come from anywhere – something I see when I'm out walking, a movie, a great book or a funny conversation. A lot of my comics are about conveying a certain emotion, so I think back to when I felt that way and try to show it in the story.

What does a typical day look like for you?

My day can involve various steps in the comic making process: sketching, planning and researching, writing, pencilling, inking, colouring, editing or lettering. I need to communicate with the people I am working with and ensure that the work is completed on time.

What are some challenges of your job?

It can be challenging to draw the same characters in many different poses and scenarios, and make sure that they are still recognisable.

What is the most interesting part of your job?

I love being able to create stories. It's cool to put whatever image is in my head onto a piece of paper! I learn a lot of interesting stuff when I'm researching for my comics too.

Maya's advice

Practise drawing – it's fun, and your skills will develop the longer you keep at it. And make your own comics – write a story about you and your friends, or create your own characters and make up a story about them!

Galapagos Islands

Words by Andrea Vermaak
Layout by Nikita Abreu

The geography bit

The Galapagos Islands are an archipelago (a group of islands) in the Pacific Ocean. These volcanic islands can be found about 906km off the west coast of Ecuador. In fact, the islands are a province of the South American country! There are 13 large islands, six smaller islands and many more islets and rocks that form the archipelago.

Photo by Felix Reyes

The giant Galapagos tortoises (that can live between 100 and 200 years!) can only be found in the Galapagos Islands and nowhere else.

Photo by Amy Perez

Endemic wildlife includes Galapagos sea lions, marine iguana, Galapagos lava lizards, Galapagos penguins (the only species in the northern hemisphere), flightless cormorants and Galapagos finches.

Discovery

Archaeological evidence suggests that no one ever visited or lived on the islands before Tomás de Berlanga, the Bishop of Panama, accidentally discovered them on his way to Peru in 1535. The islands were named after the many giant tortoises he found here.

Unique ecosystem

There are several endemic species found on the islands. This means that certain plants and animals can only be found in the Galapagos Islands and nowhere else. The islands' seemingly strange ecosystem is because of their location. Though they're found near the equator, the ocean currents around them are cool. So, the environment has a mix of temperate and tropical climates.

Photo by Galapagos Conservation Trust

Endemic plants include giant cacti that cover the dry lowlands, many unique tree species that form dense forests in higher regions, and ferns and grasses in the highest areas of the islands.

Conservation

In 1959, 97% of the islands' land area was declared a National Park. People are only allowed to live in specific areas on four of the islands. The Galapagos Marine Reserve, surrounding the islands, is one of the largest marine reserves in the world.

Though the reserves protect the islands, it's important to remember that the introduction of foreign species, tourism, illegal fishing and other human activities can be devastating. If you ever visit, please respect this very special place!

Words and layout by Sulé Potgieter Illustrations by Marcholette Minnaar

Chew on it a little

Supernova

Chewing on a yummy piece of gum and blowing HUGE bubbles is the best! I've never really wondered about where chewing gum came from... so I decided to ask!

Q: I can't believe I chew you so often and I don't even know where you come from! Where do you come from?

A: Well, people from all over the world have been chewing on my ancestors for centuries! About 3 500 years ago, the Mayans cut the bark of the sapodilla tree into strips and chewed on it. It was not very tasty, but people loved it! Apparently, chewing on my ancient grandparents helped keep hunger and thirst away, and also kept people's breath nice and fresh! That's one trait that has been passed down through our family.

Get this!

The Aztecs thought it was socially unacceptable for adults to chew gum in public, especially men! Only unmarried women and young children were allowed to chew gum in public.

Q: How interesting! But, if you started off as bark, is that what you are still made of now?

A: While my ancestors were quite unprocessed, my generation is not that simple! We go through a long process to get ready for the market. We are made using a gum base, which includes a mixture of polymers, plasticisers and resins. Then, we're mixed together with food-grade softeners, preservatives, sweeteners, colours and flavourings.

Q: If your ancestors were so popular, why did they change your formula?

A: People loved chewing on sapodilla bark so much, that it became popular very quickly! Sapodilla trees could not grow fast enough to keep up with the demand, since they needed four to eight years of rest between tappings. People started looking for other options and turned to synthetic bases for gum. Paraffin was used for a while, since it is colourless, odourless and tasteless. An Ohio dentist even used rubber to create a chewing gum for jaw exercises!

Get this!

Chewing gum and bubble gum are not the same! Bubble gum has more elasticity.

Get this!

In 1860, pharmacist John Colgan created the first ever flavoured chewing gum.

Q: Wow! What happens when we are done chewing you?

A: That's a sad story. While many people love us for the fun, fresh breath experience we provide, we are actually one of the worst causes of litter. Most of us are not biodegradable, and our sticky structure means that we stay around for a very long time!

Get this!

Chewing gum is the second most common litter found on the streets, after cigarette butts.

Gum that doesn't go into the bin or get stuck to the street in our cities, often finds its way into water sources. Sometimes, we end up in the fish that is used for food, and we carry all of the toxins that got stuck to us during our journey. But, there is hope! Some of my younger cousins are now plastic-free, vegan and biodegradable! Look out for them next time you decide to buy a pack of chewing gum.

Supernova

When I have a bubble blowing contest with my friends again, I'll tell them how awesome chewing gum really is! It really has come a long way since people chewed tree bark to clean their teeth.

One Rule for the Entire World

Layout by Meaghan Koen

Background illustration by Marcholette Minnaar

Imagine if you ruled the world... everyone would have to follow your rules!

You could make everyone eat ice-cream for dinner, or stop rhino poaching completely. You could even make a rule that everyone has to ride a skateboard to school, or walk their pets everyday. What rule would you make that everyone in the world had to follow?

OMPHILE (8)

Don't touch dangrous animals. They're scary!

SN

TAMMY (13)

To be kind to everyone.

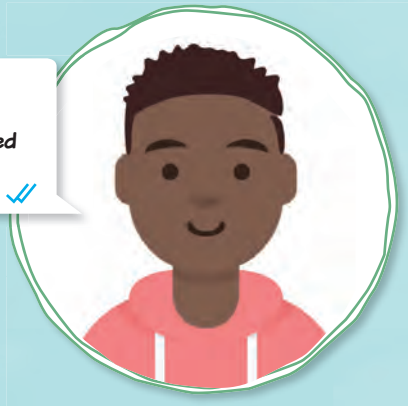
SN

ZWIYHUYA (14)

I'd like it if everyone cleaned their rooms. I share a room with my sister and it's always a mess!

SN

SHAUN (10)
A rule where everyone in the world pays me R100 every month. I'd be rich!
SN



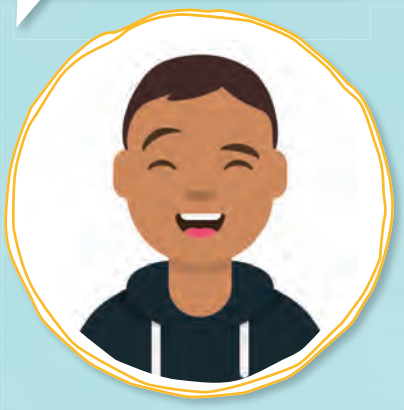
MMATHABO (14)
For everyone to stop littering. If everyone followed that rule, we would be able to save the planet.
SN

KAYLLA (9)
You could have any animal in the world as a pet. I'd love to have a lion!
SN

EMMA (12)
It'd be awesome if school was only four hours long!
SN

RORY (10)
Dancing makes me happy, so I want there to be a rule where everyone has to go to a dance party every week!
SN

BENJAMIN (11)
Everyone has to ride bikes. Imagine how healthy we'd all be!
SN



The Chatroom

Do you want to contribute to the next Chatroom? Follow *Supernova* magazine on Facebook, or subscribe to the **SN Kids Club** newsletter and look out for our questionnaires.

You can also Whatsapp us on 012 342 5347.

Humans have always been competitive. Some need to win no matter the contest. Here are some weird and wacky races that take place around the world!

Words by Oratile Kgofelo
Illustrations by Benoit Knox

Weird & Wacky RACES

Hot Air Balloon Race

Ever let a bunch of balloons fly off into the sky? Looks amazing. Now imagine hundreds of big hot air balloons racing across the sky! The world's largest free hot air ballooning event takes place in the town of Reno in the USA, and has been a must-see event since 1982.

The Great Grove Bed Race

If you think you can avoid falling asleep in your bed, then you can take it out to race instead! Beds mounted on wheels are raced through the streets by 4 racers and 1 sitter (lucky sitter!). Teams get to design and decorate their own beds to raise money for Little Smiles of Florida, a non-profit organisation.

Krispy Kreme Challenge

The race challenges both your running abilities and how long your stomach can handle 12 Krispy Kreme doughnuts in 1 hour on an 8km race! It started out as a challenge among 10 friends, and is now a nationally publicised charity race in North Carolina. Sounds like a good cause to eat doughnuts for!

Cockroach Race

This weird and wacky race started out as a joke in a hotel in Australia where two friends were bragging about the cockroaches in their apartment. Now, it's one of Australia's biggest races! Every year in January, people can bet on the winning cockroach of their choice. So, next time you see a cockroach running around, it might just be the next champion!

Snail Race

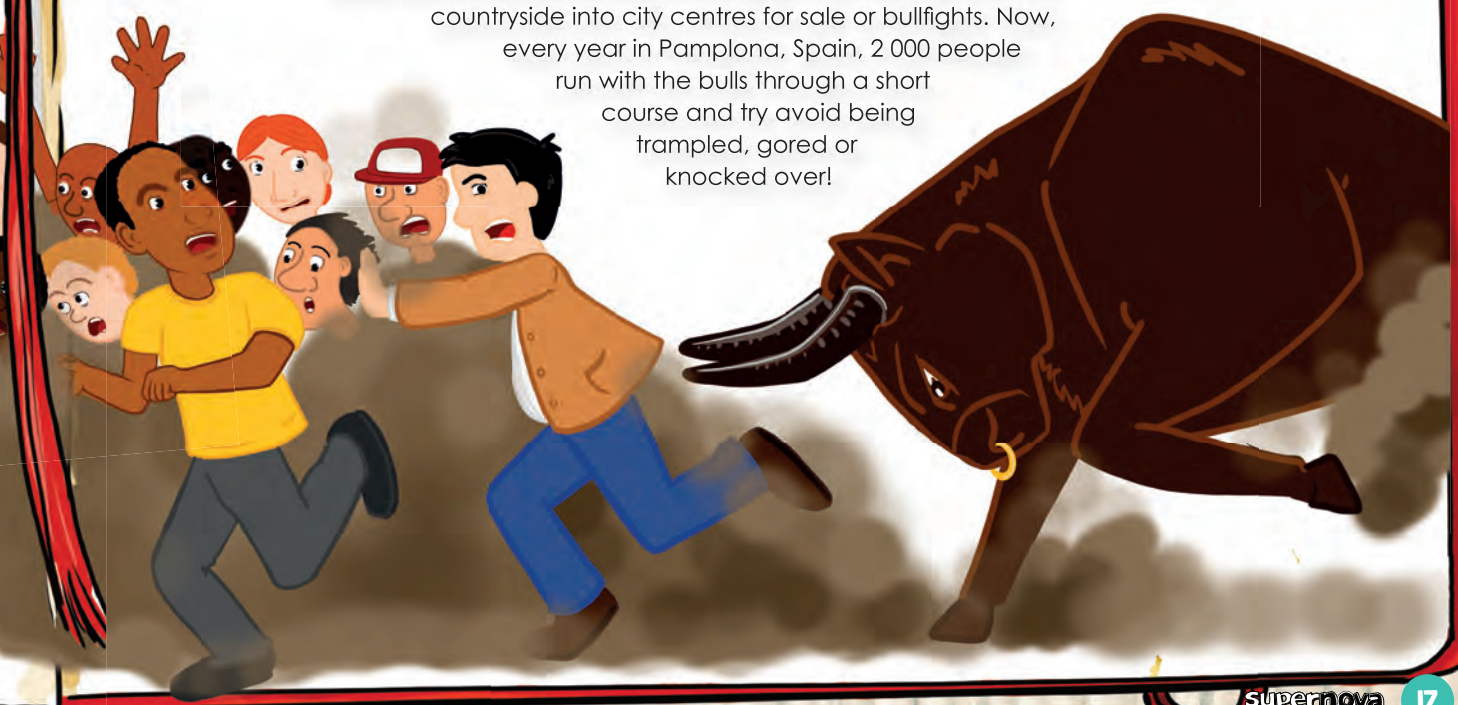
More than 200 snails face off in the World Snail Racing Championships every year in Norfolk in the UK. The World Champions have been hosted here for more than 25 years! The all-time record holder is a snail named Archie, who sprinted to the finish line in 2 minutes in 1995.

Wife Carrying Championship

If there is one way to put a relationship to the test, this might just be the answer! Couples from all over the world come together to take part in this outrageous race that started in Finland. Husbands must carry their wives through a special obstacle track in order to win a highly desired prize – their wife's weight in beer!

Running of the Bulls

This might just be one of the most dangerous races! The tradition started in the 13th century, when cattle herders wanted to transport their animals from the countryside into city centres for sale or bullfights. Now, every year in Pamplona, Spain, 2 000 people run with the bulls through a short course and try avoid being trampled, gored or knocked over!



Micro chips in animals

Words by Sulé Potgieter
Layout by Meaghan Koen
Illustration by Inge Holzträger

Wouldn't it be so cool if we had a better way to find lost pets other than handing out 'missing' flyers? Well, as it turns out, microchips do just that! From cuddly household pets to animals that roam the wild, almost any animal can be chipped. Let's have a look at this life-saving invention!

?! Get this!

Pets with microchips are up to 20 times more likely to be reunited with their owners.

What is a Microchip?

A microchip is a permanent method of electronic identification. A device as small as a grain of rice is implanted under an animal's skin. If someone finds your pet along the side of the road, they can take it to the vet and have it scanned. The vet can check if your pet has a microchip using a small device called a reader. This can tell the vet what the animal's unique identification number is and who to contact to come and get them.

?! Get this!

One in three pets get lost at some point in their lives. That's why it's extremely important to have your furry friend microchipped!

?! Get this!

The identification number on the microchip is connected to the National Animal Database. It uses something called radiofrequency to send out a signal to the reader.

How is it done?

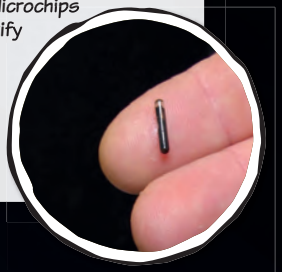
A small needle places the microchip underneath your pet's skin. Usually, it is placed underneath the loose skin between their shoulder blades. It does not hurt them, and is a safe and easy procedure. The microchip is activated by radiowaves made by a scanner that is passed over the area.

Why do we microchip animals?

Microchips help to reunite owners with their pets if they get lost, stolen or if they are injured in an accident. A GPS may tell you where your pet is, but it can't provide your contact information to those nearby that would like to help return them home. While collars, harnesses, and tags can break off or be removed, a microchip will permanently identify your pet. A GPS also requires batteries, but a microchip doesn't need to be charged since there isn't a battery.

Get this!

Microchips are not a tracking device and cannot be used to track and locate animals. Microchips only help to identify animals, which means that pets must be taken to the vet in order for the microchip to be scanned.



Microchips on a mission

Apart from saving countless scared lost dogs and cats, microchips have improved the safety of tons of other animals.

Rhinos

Kenya has a policy that every single rhino in the country has to be microchipped with two special GPS microchips. To try and save them from poaching, each rhino gets a microchip on their body and another one in their horn. Now, when a rhino has been poached, the GPS tracker will lead authorities straight to the poachers.

Cheetahs

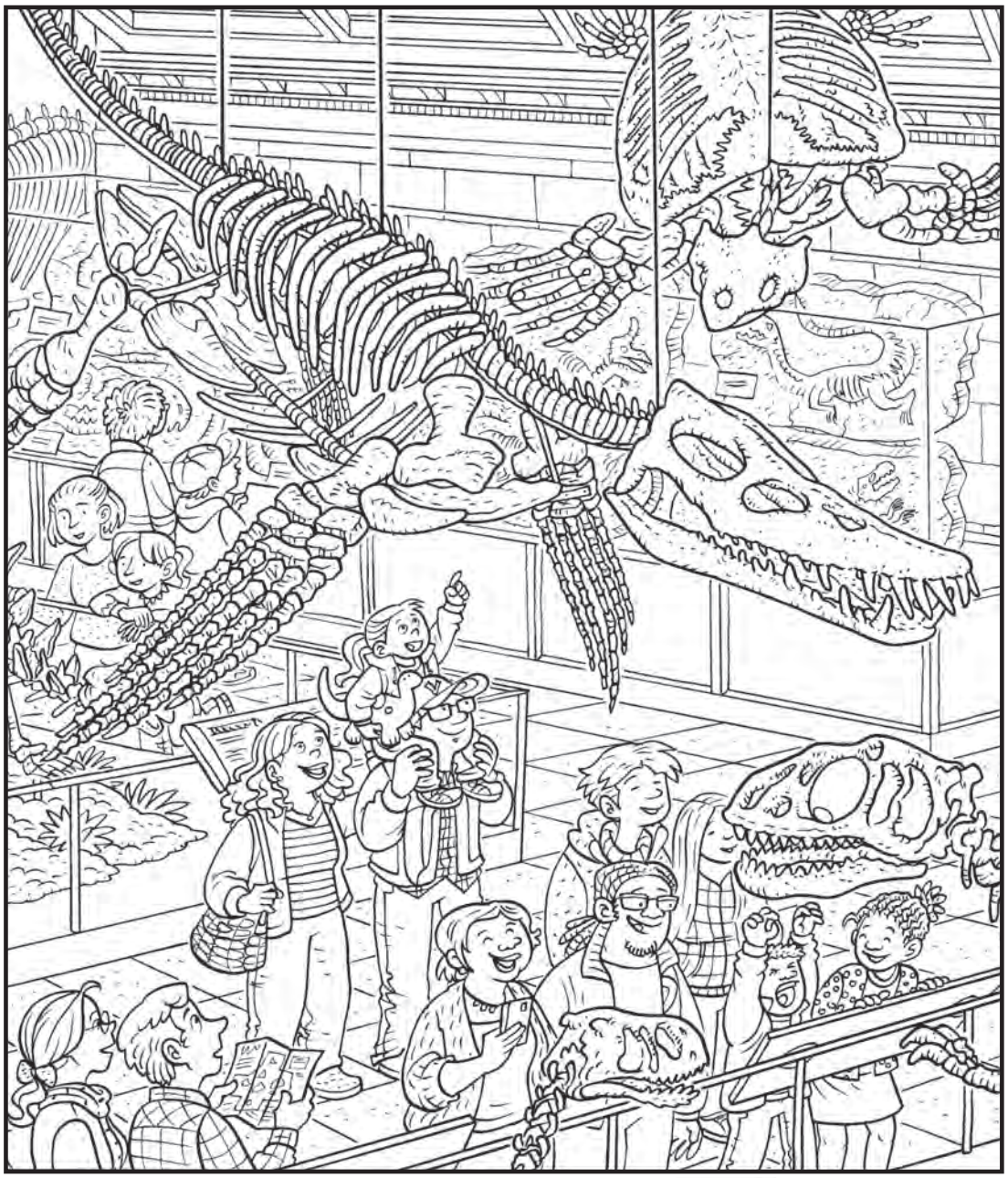
De Wildt Cheetah and Wildlife Centre has implanted their cheetahs with special microchips that monitor their body heat. Now, people can keep an eye on sick cheetahs so they can be treated. They can also monitor pregnant cheetahs to help if there are any problems during the birth!

Parrots

Microchips are a much safer alternative for identifying parrots than those little metal rings that were used. The rings could get caught on something and hurt the bird, harmful build up could form underneath it, or the numbers could be rubbed off and the bird's identification could be lost. All in all, the microchip is a safer and much more effective way to identify someone's beloved feathered friend.

Highlights™
Fun with a Purpose™

Hidden Pictures™




olive


safety pin


chili pepper


leaf


screw


pitcher

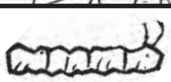

toucan


heart


stapler


comb

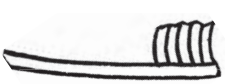

hat


caterpillar


pennant


shoe


sock


toothbrush


squeegee


celery

The Blanket Tree Books

OUT NOW!

The *Blanket Tree Books* are bedtime stories of inclusivity and growth. These fantasy adventures teach little life lessons and help people grow together through adversity, celebrating differences and bringing people together.

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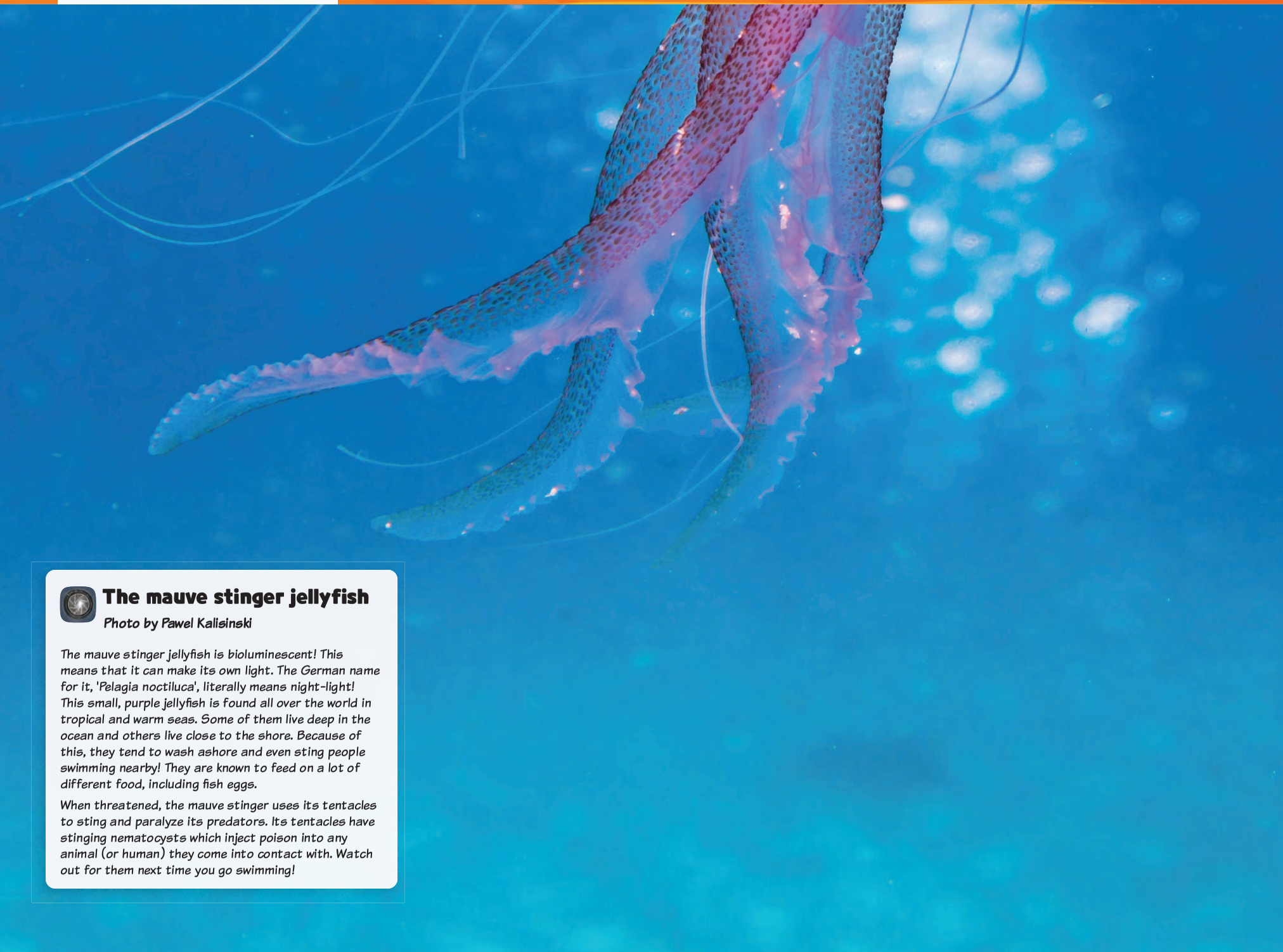

The mauve stinger jellyfish

Photo by Pawel Kalisinski

The mauve stinger jellyfish is bioluminescent! This means that it can make its own light. The German name for it, 'Pelagia noctiluca', literally means night-light! This small, purple jellyfish is found all over the world in tropical and warm seas. Some of them live deep in the ocean and others live close to the shore. Because of this, they tend to wash ashore and even sting people swimming nearby! They are known to feed on a lot of different food, including fish eggs.

When threatened, the mauve stinger uses its tentacles to sting and paralyze its predators. Its tentacles have stinging nematocysts which inject poison into any animal (or human) they come into contact with. Watch out for them next time you go swimming!

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Deep Dive with Dolphins

Words by Nadja Botha
Illustrations by Benoit Knox

?! Get this!

The largest dolphin is the Orca, and they can grow up to 8m long.

The smallest dolphin is the Maui dolphin, and they are only 1.5m long!

Habitat

Dolphins love the ocean, where they can ride the waves and dive deep into the depths. But, the ocean is not the only place where we can find dolphins! There are dolphins that live in fresh water as well, like the rivers of the Amazon and India. Dolphins can live in either warm or tropical waters or in cooler waters, even Antarctica, depending on the species. They like both shallow waters near shore as well as deep water out in the ocean. Some dolphin species migrate across vast distances and others stay close to home their entire lives.


Photo: Sylvain Cordier

Amazon River dolphins live in freshwater streams and rivers.

A super pod can have over 1 000 dolphins!

Social interactions

Dolphins live in groups called pods, which can have 12 or more dolphins in. They are very social animals and communicate with each other through squeaks, whistles and clicks. They also use their fins and tails to slap or breach the water as a way to communicate with each other. Scientists are divided on the topic of whether or not dolphins have their own language.

Sonar abilities

Echolocation is basically seeing with sound! The dolphin makes a clicking sound that travels through the water, then they wait for the echo of the clicking sound to bounce off of objects in the water. Through their echolocation they can identify how big something is, what its shape is and how far away it is. This allows them to easily identify fish or squid to hunt down.

?! Get this!

Dolphins don't only come in grey. They can also have white and black patterns, and some are even pink!

?! Get this!

A bottlenose dolphin can make up to a thousand clicks per second.


Photo: Chris Fallows


Photo: Daniel Kirn

Adaptations and Anatomy

Dolphins are not fish, but mammals, and just like other mammals they are warm blooded! They give live birth and nurse their calves after they are born. Dolphins gestate for 12 months and give birth to one calf at a time, and it will stay with its mother for up to six years. They are predators and mostly feast on fish and squid.

Head/Brain

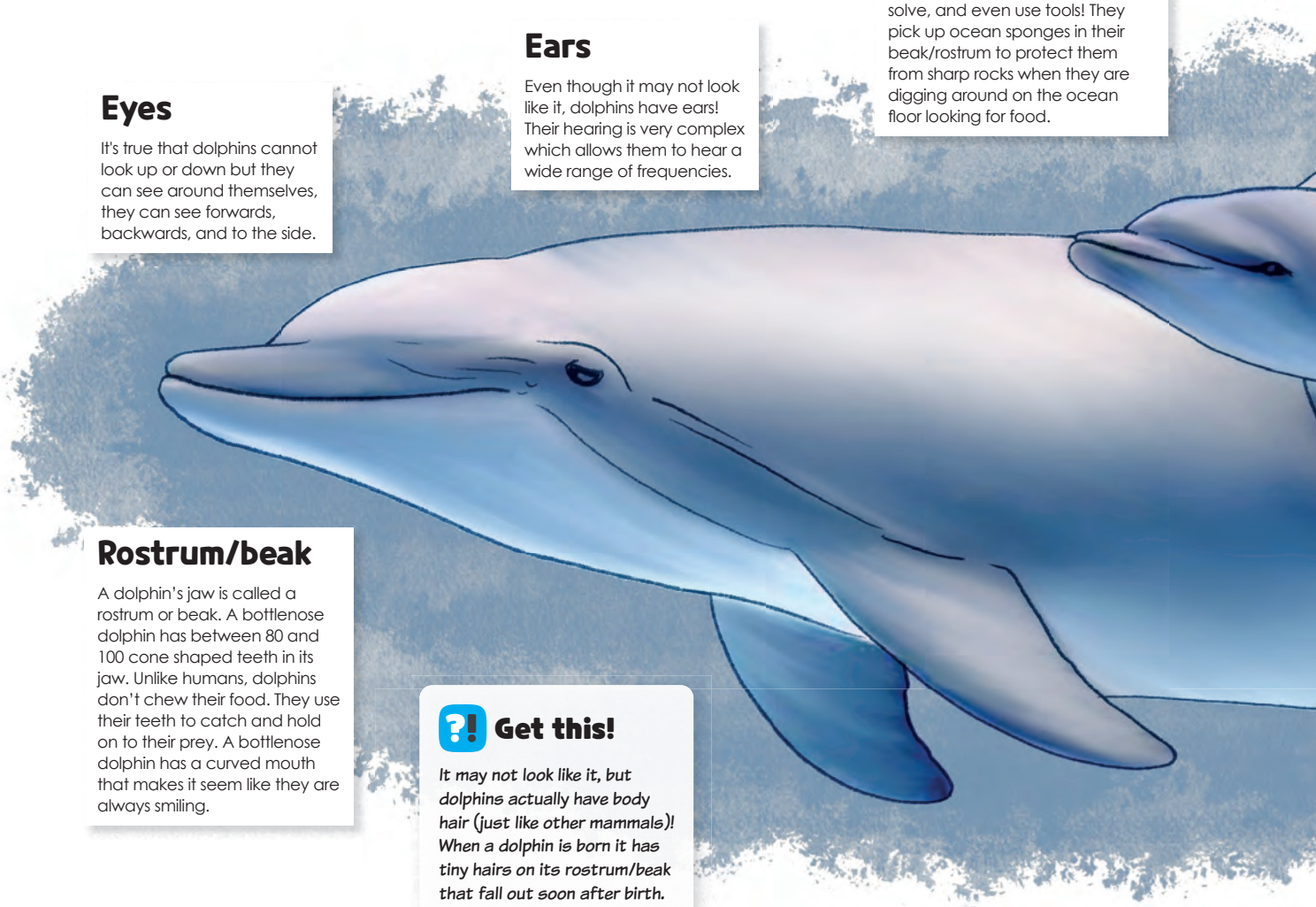
Dolphins are one of the most intelligent animals on Earth. They can communicate and problem solve, and even use tools! They pick up ocean sponges in their beak/rostrum to protect them from sharp rocks when they are digging around on the ocean floor looking for food.

Ears

Even though it may not look like it, dolphins have ears! Their hearing is very complex which allows them to hear a wide range of frequencies.

Eyes

It's true that dolphins cannot look up or down but they can see around themselves, they can see forwards, backwards, and to the side.



Rostrum/beak

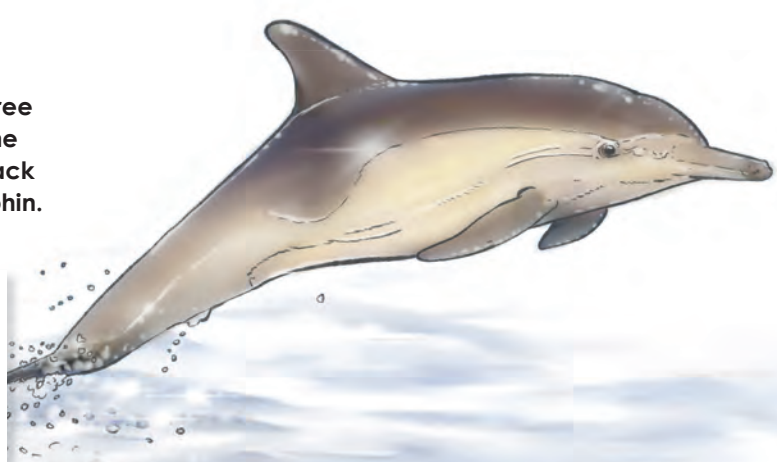
A dolphin's jaw is called a rostrum or beak. A bottlenose dolphin has between 80 and 100 cone shaped teeth in its jaw. Unlike humans, dolphins don't chew their food. They use their teeth to catch and hold on to their prey. A bottlenose dolphin has a curved mouth that makes it seem like they are always smiling.

?! Get this!

It may not look like it, but dolphins actually have body hair (just like other mammals)! When a dolphin is born it has tiny hairs on its rostrum/beak that fall out soon after birth.

Other dolphins in SA

There are 36 species of dolphins on the planet and each one has their own unique appearance, behaviour, and habitat. The three types of dolphins found in South Africa are the bottlenose dolphin, the Indo-Pacific humpback dolphin and the long-beaked common dolphin.



Long beaked common dolphin

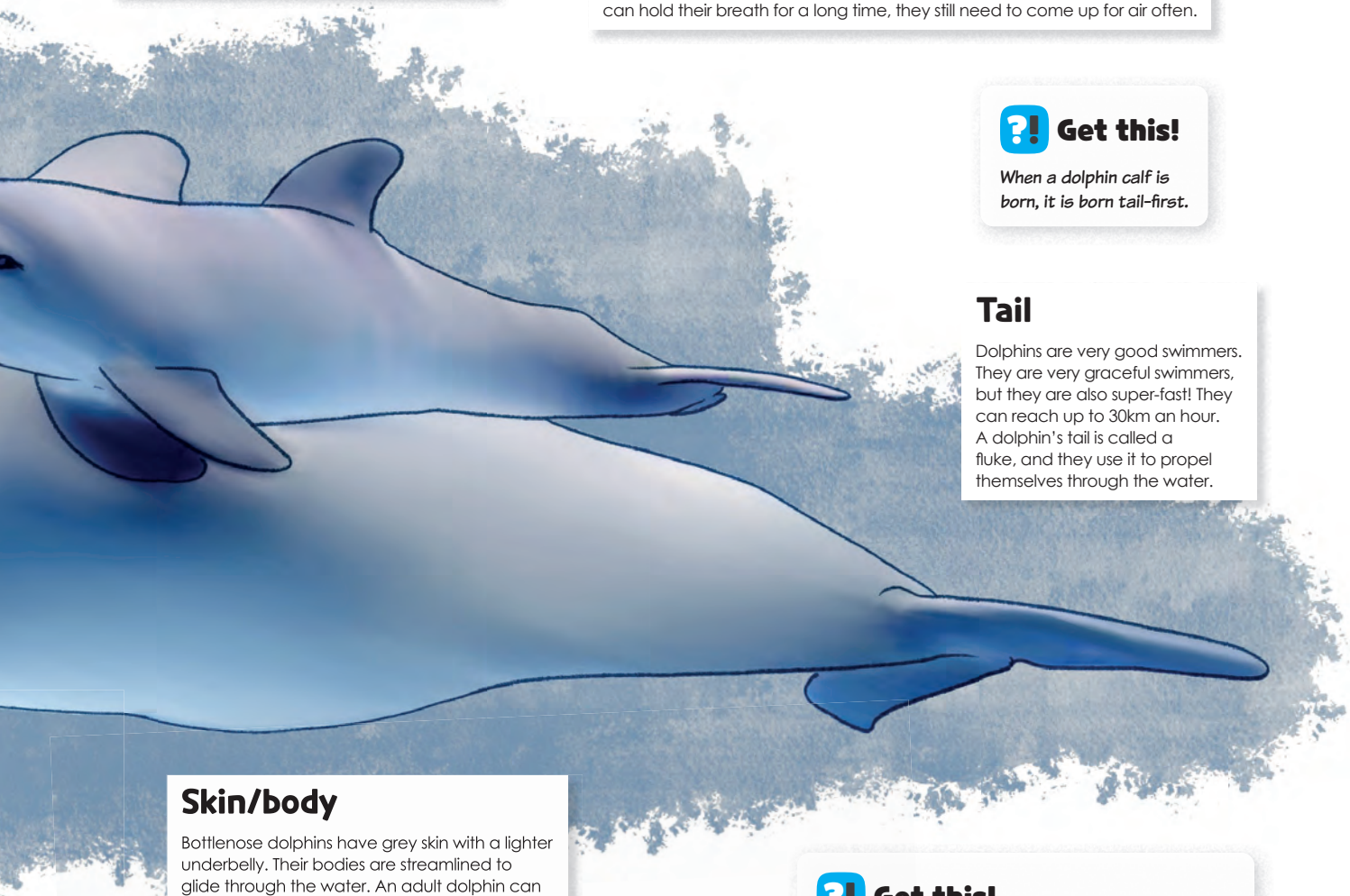
The long beaked common dolphin is another dolphin species that is abundant in South African waters. They prefer to live in warmer, shallower water which is exactly what South Africa has to offer. If you have seen a dolphin along our shores, then it is most probably a long beaked common dolphin!

Dorsal fin

A dolphin's dorsal fin is made up of dense fibrous tissue. Scientists and researchers use the dolphin's dorsal fin to help them identify individuals. They can do this by looking at the unique nicks and scratches on the dorsal fin.

Lungs and blowhole

Just like other mammals, dolphins have lungs and breathe air. They use their blowholes to breathe in oxygen when they get to the surface, and once they dive back down, they close their blowholes. Dolphins store oxygen in their lungs, blood, and muscles. They can store enough oxygen for them to be able to hold their breath for approximately 7 minutes. Even though they can hold their breath for a long time, they still need to come up for air often.



Get this!

When a dolphin calf is born, it is born tail-first.

Tail

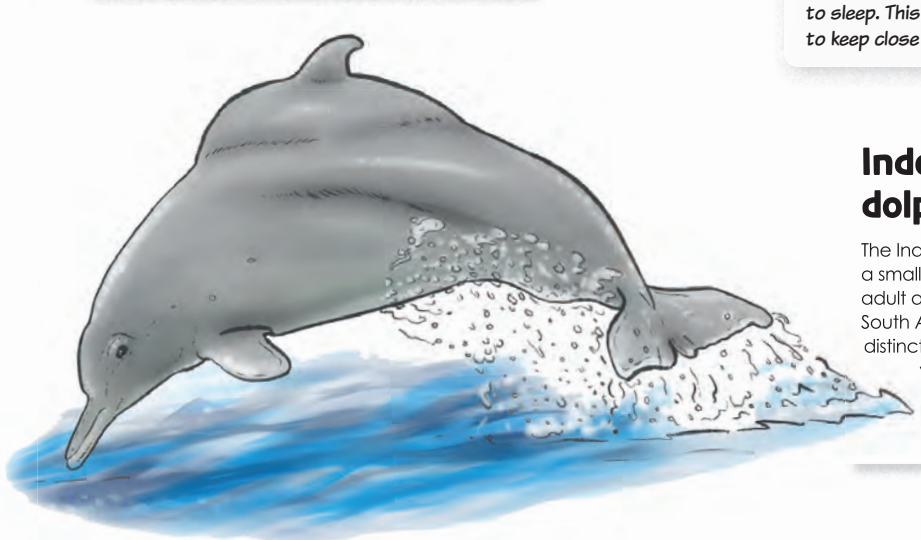
Dolphins are very good swimmers. They are very graceful swimmers, but they are also super-fast! They can reach up to 30km an hour. A dolphin's tail is called a fluke, and they use it to propel themselves through the water.

Skin/body

Bottlenose dolphins have grey skin with a lighter underbelly. Their bodies are streamlined to glide through the water. An adult dolphin can measure between two to four metres in length and can weigh between 150 and 650kg.

Get this!

Bottlenose dolphins turn one half of their brain off to sleep. This allows them to rest while still being able to keep close to their pod and see danger coming.



Indo-Pacific humpback dolphin

The Indo-Pacific humpbacked dolphin has a small population, with an estimated 1 200 adult and juvenile humpback dolphins around South Africa's coasts. They are one of the most distinctive types of dolphins in South Africa, with a long, wide hump below its round, pointed dorsal fin. They are a shy species and generally stay away from boats and other human activity.

Threats

All dolphins have natural predators which include sharks and orcas, but their biggest threat are humans. In the past, dolphins were hunted for their meat and blubber – luckily this practise isn't as popular anymore. Today, the dolphins' biggest threats are commercial fishing nets and pollution.

When a dolphin gets caught in a fisherman's net, they can't get to the surface to breathe, so they drown. This is why it is so important for fishing vessels and fishermen to fish responsibly and make sure that they keep their nets and lines safe.


Photo: Robert Pittman

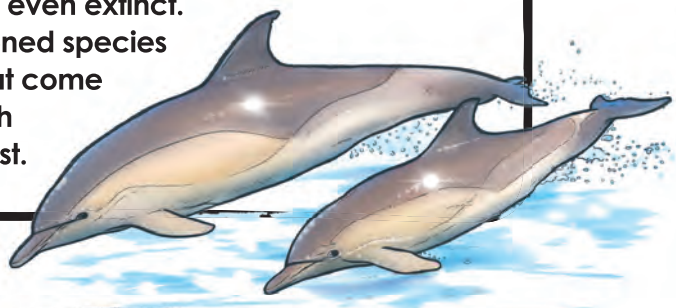
Pollution also threatens dolphins across the world. The pollution does not only make the dolphins sick, but it causes their main food sources to die, leaving them without food.

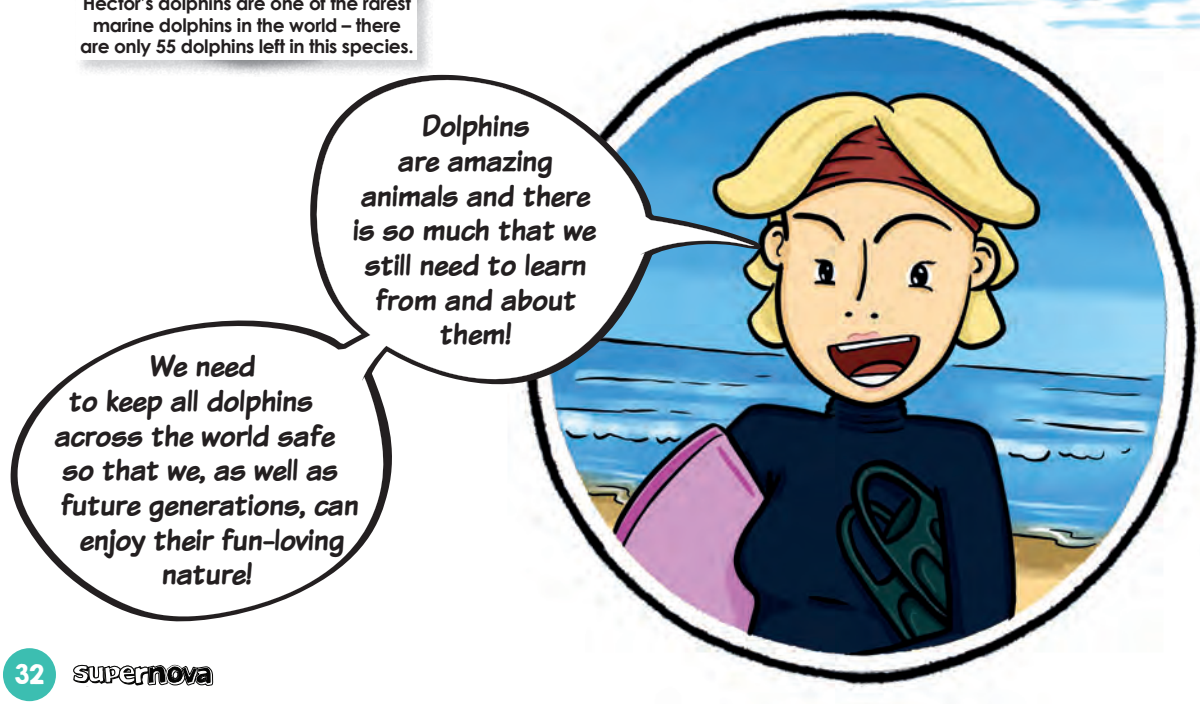
Global warming is another big threat to the world's dolphin populations. Because the oceans' waters are slowly heating up, the dolphins' food sources move to deeper and cooler waters, meaning that they don't have enough food in their natural habitats.

There are several dolphin species that are endangered and even extinct. The most threatened species are the ones that come into contact with humans the most.


Photo: Gregory Smith

Hector's dolphins are one of the rarest marine dolphins in the world – there are only 55 dolphins left in this species.





Make a Dolphin Plushie

Make a cute plushie with recycled materials to cuddle with at night. You'll dolphin-itely love it!

Warning

Ask a grown-up to cut out the shapes in the fabric and help with the needle if you do not know how to work with it.

Printable

Download and print the pattern for this plushie at supernovamagazine.co.za/sn-online

What you need:

- Scissors
- Old or recycled material
- A needle and thread
- Stuffing
- A marker
- Paper
- Fabric paint

1 Draw the dolphin pattern on paper and cut it out.

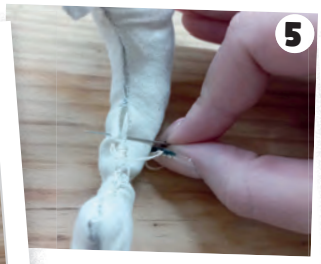
2 Trace the pattern on your recycled material twice and cut it out.

3 Place them on top of each other and sew the edges together.

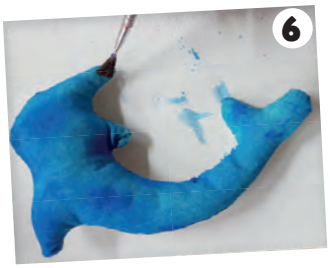
Pro Tip

Leave a few centimetres open on the dolphin's belly so you can turn your plushie inside out and stuff it easily.

4 Flip the dolphin inside out through the hole in the belly and stuff it.



5 Sew the belly closed.



6 Paint the dolphin with some fabric paint and draw on an eye.

7 Enjoy cuddling up to your new dolphin plushie!

Hairstyles through history

Words by Candice Robertson
Illustrations by Liané Greeff

For thousands of years, hair and hairstyles have been much more important than just making you look beautiful and protecting you from the weather. Across different periods in time and across cultures, hairstyles symbolise your age, religion, what tribe you are from, your social status, and even whether you're married or not! Even today, hairstyles form a big part of your identity. Let's take a look at some of history's most interesting hairstyles.

Braided Wig - Egypt

Upper class Egyptians had many wigs, which were elaborately decorated with braids, curls, tassels, pins, ribbons and jewellery. Wigs were mostly worn for decoration and to special occasions, but they also acted as sun hats and provided some shade! The best wigs were made from human hair, while cheaper wigs combined human hair and vegetable fibers. The wigs were stiffened and hardened using beeswax. Because they were so expensive, Egyptians took great care of their wigs. They couldn't be washed, so they were perfumed with scented petals, essential oils and wood chips.

Fake beards were also very popular, even with some Egyptian queens! They became a symbol of a pharaoh's power, and were worn to show that pharaohs were living gods on Earth.

Shikha - India

A shikha is a long piece of hair left on top or on the back of a male Hindu's shaven head. It is typically tied in a knot, and is a centuries old Hindu practice. It is believed that a person who prays or recites Vedic mantras must not have hair on his head or face. The shikha is left as a way to help the soul transcend into heaven, and shows devotion, cleanliness, spirituality and personal sacrifice.

Miao Headdress - China

About 5 000 Long Horn Miao people live in 12 villages scattered across the mountains of southern China. They are best known for the elaborate headdresses worn by their women - a tradition that has lasted 1 000 years, and continues to develop as time passes.

?! Get this!

Miao women save hairs that fall from their heads to add them to their headdresses.

?! Get this!

A Miao headdress weighs around 3kg and can be 3m long!

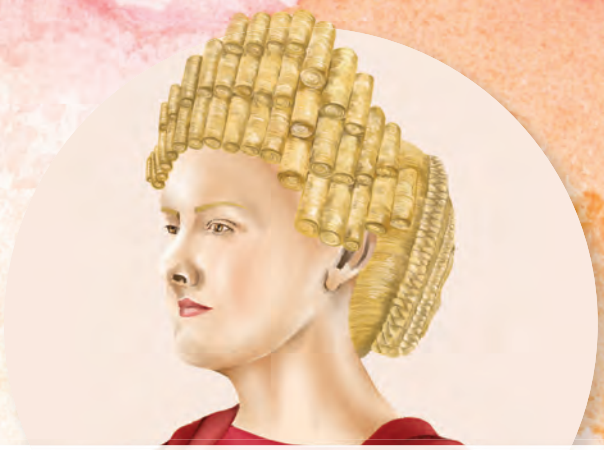
These giant wigs are made by wrapping wool, linen and the hair of the woman's ancestors around a pair of animal horns or a wooden clip, and tying it in place with a white ribbon. The materials and hair are passed down from generation to generation. Nowadays, these headdresses are only worn for special occasions - like the Flower Dancing Festival. During this festival, girls in the village dress up, dance and sing to boys in the village in order to find their life partners.

Queue - China

This simple hairstyle featuring a bare forehead and single long braid defined the Qing dynasty. The first Manchu emperor of China ordered all Han Chinese men to take on this hairstyle as a sign of submission to the new laws. Every ten days, the hair above the temples was shaved off and the rest of the hair was tied in a long braid. There was a lot of resistance to this new rule, since people believed that hair was inherited from the ancestors, and it shouldn't be damaged. There was so much resistance that the emperor declared that not taking the queue hairstyle was a crime punishable by death – basically 'lose your hair or lose your head'!

Tonsure

This haircut started around 1073, when Pope Gregorio VII decided to standardise the church. Priests, monks and nuns were forbidden to marry or have relationships, and this haircut was introduced. Since the Bible forbids cutting the hair at the edge of the head or beard, Gregorio decided that the tonsure haircut was a good solution. It was worn by almost every Catholic monk in Europe in medieval times.



Obris Comarum - Rome

Hair was a major part of an Imperial Roman woman's attractiveness. So, women spent lots of time getting their hair styled. The most fashionable hairstyle featured a fringe of tight curls piled high, and braids folded into a big bun in the back. The big front hair was often sewn into place and supported with wires!

Periwig - England

The periwig was a wig made especially for men, using long hair with curls on the side and drawn back at the neck. King Louis XIII was the first man to start the periwig wearing trend, when he used it to cover his balding. This became a trend among upper-class men, and gradually became popular among the middle class in later years.

Pouf - England

This was one of the most sensational hairstyles of the 18th century! In 1775, the Queen of France, Marie Antoinette, wore it to her husband's coronation, triggering a wave of French noblewomen to wear their hair the same way. Wire, cloth, gauze, wigs, animal hair and the wearer's own hair were used to create a massive coiffure that was decorated with jewels, flowers, ribbons, feathers, and pearls. Some of the hairstyles were so expensive and took so long to create that women wore them for a week or more and had to sleep upright!

Fulani Braids - Africa

Fulani, or feed-in braids, come from the Fulani (Fula) people in West Africa. This traditional hairstyle has been passed down through generations of women in the nomadic community. It is known for its length and unique patterns, with five long braids that hang or loop on the sides of the head. The braids are sometimes decorated with silver or bronze discs, beads and cowrie shells.

Maasai Braids - Kenya

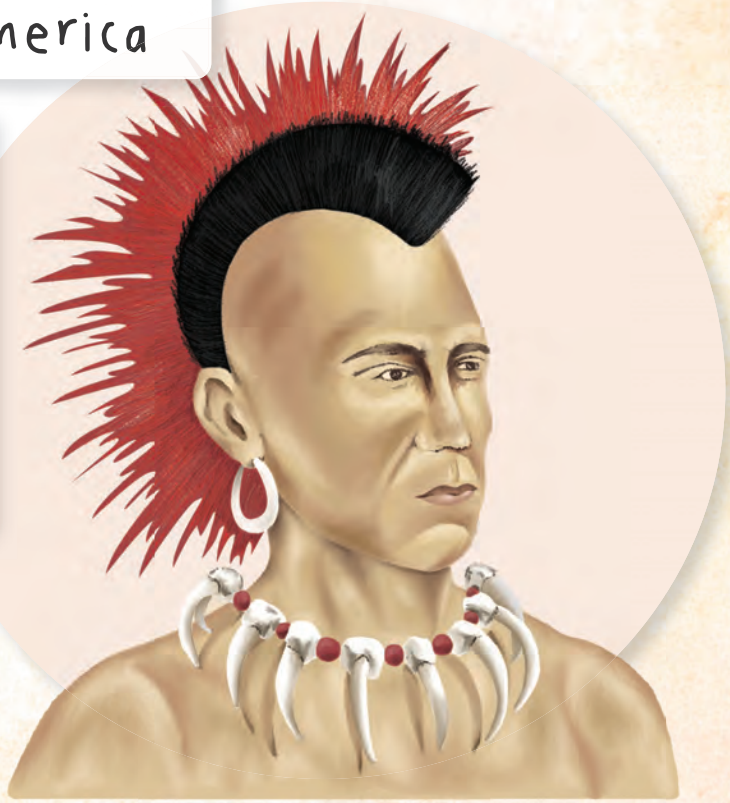
Maasai males are proud of their long braids, since they are the only group allowed to wear their hair long (Maasai women shave their heads). They spend hours grooming and styling each other's hair, using ashes, clay, animal fat and ochre to style and colour it before it is braided into thin strands and woven with cotton or wool. Their warrior manes symbolise the African lion's strength and beauty, which the Maasai men are very proud of and confident in.

Butterfly Whorls - Native America

This traditional hairstyle is worn by unmarried girls in the Hopi tribe. A young woman's mother would wind her hair around a curved piece of wood to give it a round shape, and then remove the wood frame. Once a woman married, she would wear her hair in two long pigtails. The Hopis also painted their faces for special occasions, with different patterns for war, religious ceremonies and dances.

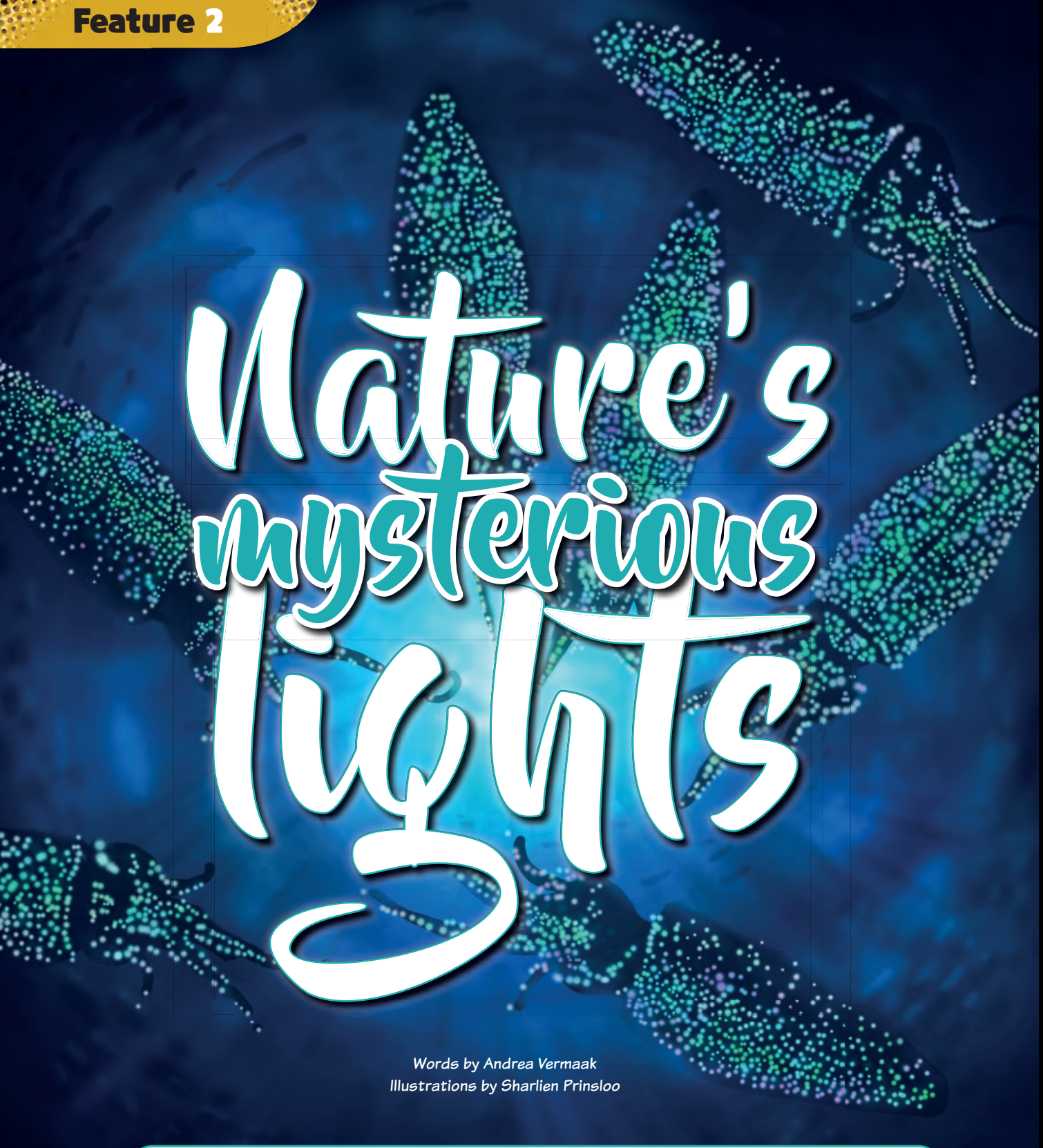
Mohawk - Native America

The well-known mohawk hairstyle is named after and associated with the people of the Mohawk nation. While the mohawk is worn a bit differently today, in the past men would remove all of their hair except for a section on the crown of the head at the very back. And, the hair on the side of the head was not shaved – it was pulled out, small tufts at a time. It is said that this hairstyle was worn by warriors preparing to go into battle and was also known as scalplock.



?! Get this!

Warriors cut their hair in this traditional scalplock style in preparation for battle as it made them look different from the enemy.



Nature's mysterious lights

Words by Andrea Vermaak
Illustrations by Sharlien Prinsloo

Bioluminescence in Nature

Have you ever been camping and seen something glowing fly past you at night? There are so many cool things in nature that we still need to discover. One really cool thing we've already discovered is bioluminescence – a seemingly mysterious, but actually rather useful light that certain organisms produce naturally. If it's dark and you're in the right area, it's hard to miss!

Get this!

An organism is a single-celled life form, plant or animal. You're an organism!


Photo: Chris Favero

What's bioluminescence?

If you're allowed to do experiments in natural sciences at school, you may have noticed that when you mix two different liquids together, for example, something happens. This is a chemical reaction.

Bioluminescence is a natural chemical reaction that happens inside certain organisms. It helps them to produce light for different reasons.

How does bioluminescence work?

In most cases, luciferin (a pigment) and oxygen react in the cells of a bioluminescent organism. Some organisms also have enzymes (something they create to speed up chemical processes) called luciferase. Energy is produced in the form of photons (pieces of light) during the chemical reaction. It's these photons that make the organism release light.

Some creatures rely on their food to glow. The midshipman fish, for example, eats seed shrimp that make it glow.


Photo: Edith Widder

A deep-sea shrimp spews bioluminescent chemicals at its predator, a viperfish


Photo: Chris Favero

Bioluminescent algae on a beach in Australia

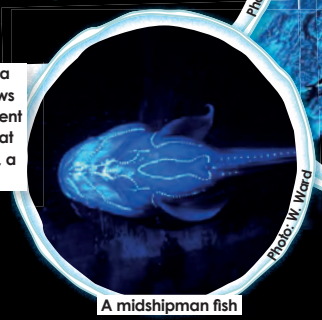


Photo: W. Ward

A midshipman fish

Why are some animals bioluminescent?

Lure prey

Some organisms use their light to attract or stun prey, or to help them hunt in the dark. Some predators may look for glowing organisms to munch.

Trick predators

Instead of using their light to hunt, some organisms use their light to protect themselves from predators. They may either flash a bright light that shocks a predator, or shoot out bioluminescent liquid to confuse their predators. Some organisms even leave a glowing body part behind as a decoy to escape.

Attract mates

A few insects use their light to let others of the same species know that they're ready for mating season.

Multiply

Some fungi species glow to attract insects that will help spread fungal spores. This happens the same way that bees help to pollinate flowers.

Camouflage

Some sea creatures' bellies glow. This may be a good thing for potential prey because their shiny tummies look like light from the water's surface and hide them from predators below.

On the other hand, cookie-cutter sharks' bellies glow to attract squid and even whales. The sharks then grab bites out of creatures that come close.

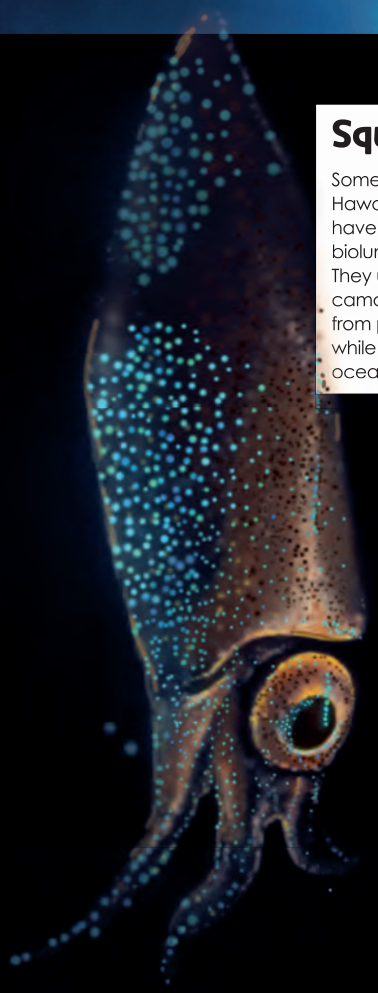
Do bioluminescent organisms glow different colours?

Yes! Most glow blue-green, but some glow red (like the dragonfish) or yellow (like fireflies). There are even a few creatures that glow more than one colour!

8 Brilliant bioluminescent organisms

Though bioluminescence is found worldwide, about 76% of bioluminescent organisms live in our oceans. About 1 500 fish species alone are bioluminescent. Then, there are also some starfish, crustaceans, and even sharks that are bioluminescent.

Many bioluminescent organisms don't live in the ocean. Some beetles, larvae, millipedes, fungi (like mushrooms), bacteria and algae also glow in the dark. Let's check out a few cool organisms that naturally glow in the dark!



Squid

Some squid, like the Hawaiian bobtail squid, have an organ with bioluminescent bacteria. They use their light to camouflage themselves from predators at night, while swimming near the ocean's surface.

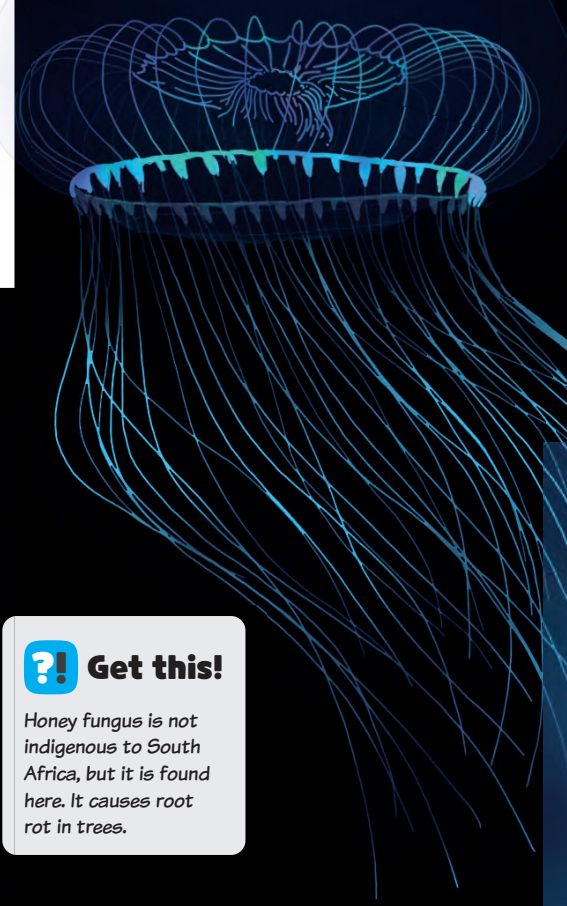
Fireflies

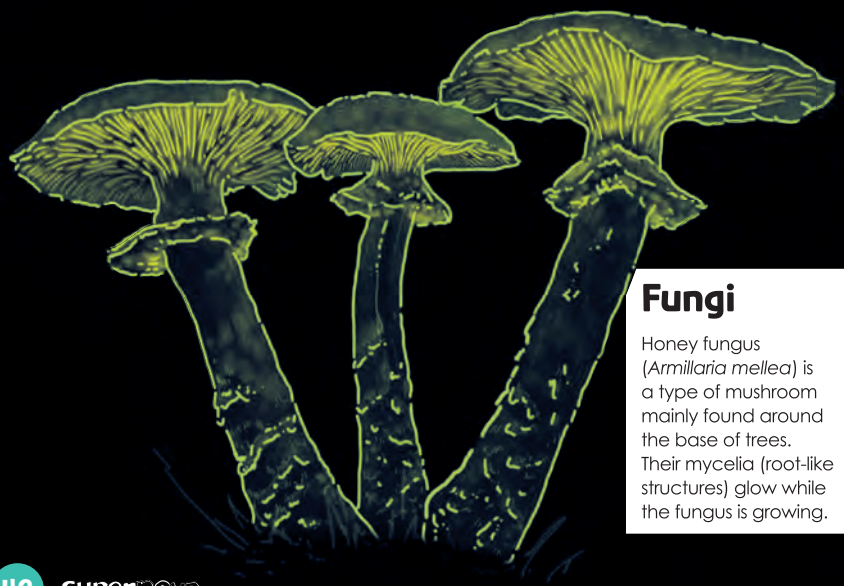
Fireflies are actually beetles. They have organs under their abdomens (bodies) that flash light to attract each other. They may also use their light to warn predators that they don't taste that great.

Jellyfish

Ctenophores, commonly known as comb jellies, are a kind of jellyfish found worldwide. They use their comb-like cilia to swim and produce light both to confuse and attract predators. Weird.

The cool thing about comb jellies though is that while they usually produce green or blue light, they can also produce a rainbow effect when their moving cilia scatters light.





Fungi

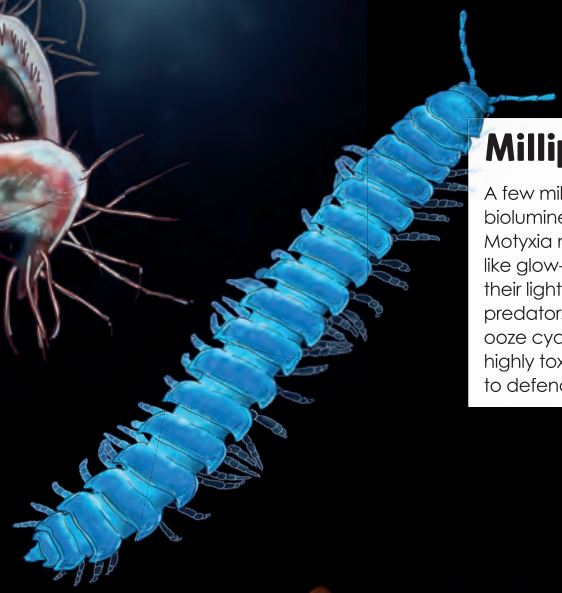
Honey fungus (*Armillaria mellea*) is a type of mushroom mainly found around the base of trees. Their mycelia (root-like structures) glow while the fungus is growing.

?! Get this!

Honey fungus is not indigenous to South Africa, but it is found here. It causes root rot in trees.

Anglerfish

An anglerfish uses a long bacteria-lit body part dangling from its head. It uses this to attract prey and mates in the dark deep sea, where it lives.



Millipedes

A few millipedes are bioluminescent. The Motyxia millipede, like glow-worms, use their light to warn predators. They use ooze cyanide, a highly toxic chemical, to defend themselves.

Plankton

Some small plankton species, like dinoflagellates, light up in a similar way to fireflies. These single-celled organisms gather in millions and glow an electric blue on the water's surface when they're disturbed.

Glow-worms

Glow-worms are sometimes confused with fireflies, though they're related. Glow-worms are actually larvae. They light up to let predators know that they're toxic.

?! Get this!

The larvae of small flies found in Australia and New Zealand dangle sticky glowing threads in caves to lure and catch their prey.

Bioluminescence helps scientists

There's no doubt that bioluminescence is an amazing natural occurrence that many organisms use in different but clever ways. Did you know that scientists are using their understanding of bioluminescence to help us?

For example, click beetles' green and red flashing spots have helped scientists to make healthy cells glow one colour and harmful cells, like cancerous cells, another colour. Other scientists have discovered that luciferin from fireflies, combined with photosensitising, can kill cancerous cells.

Research has also been used to help light up structures in the brain to examine it more clearly. Amazing!

Next time you see a firefly when camping, remember that our world is full of genius natural lights!

The History of Motorsport

Words by Leon Loubser
Illustrations by Kai Neilson

The History of Motorsport

Ever heard of the horseless carriage? Sounds strange, doesn't it? It is actually what they called the first car! With the invention of the automobile came the idea of seeing who could drive them the fastest!

136 YEARS AGO

The automobile was born in 1886. It was designed by a man named Carl Benz. He founded the Benz company, which later became the Daimler-Benz company, and finally turned into the Mercedes-Benz company we know today.

128 YEARS AGO

Eight years after the first car was created, the first ever race was held. It stretched over 127km, from Paris to Rouen, both located in France. Racing reminds us of speed, but these cars could only travel at about 19km/h!

?! Get this!

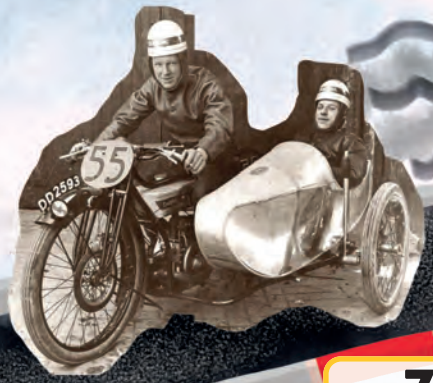
These days, the cars that run in this race can reach speeds of more than 400km/h!

99 YEARS AGO

Many years later, the first Le Mans race was held. This 24-hour endurance race sees which team and driver can hold out the longest and do the most laps. Today, the Le Mans race is still one of the most exciting and prestigious races in the world. Team Porsche holds the record for most races won – 19.

73 YEARS AGO

Grand Prix Motorcycle racing began on the Isle of Man, an island located in the Irish sea. The race takes place on different streets on the island, and travels through many villages. It is one of the most dangerous races ever to be held.



72 YEARS AGO

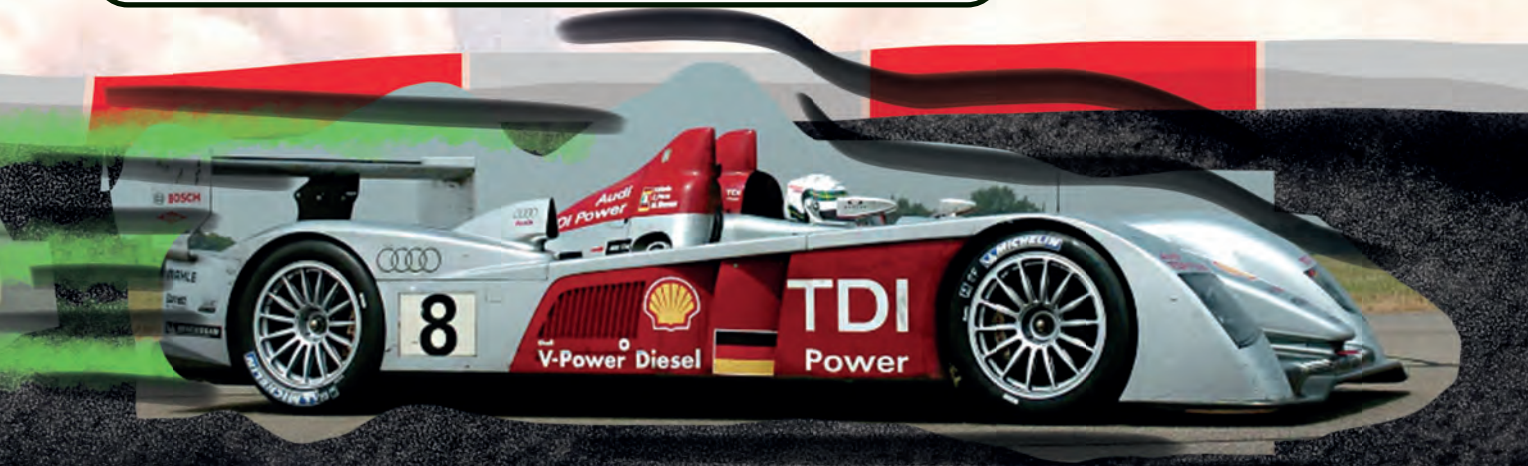
In 1950, the first Formula One race was held on the Silverstone track in Britain. This was the beginning of the most famous and most loved race in the whole world. The cars that raced were completely open, with no roof or windscreen to protect the drivers.

Famous drivers from the ages

- **Lewis Hamilton is the most successful Formula One driver. He holds the record for most wins, and has won an incredible 103 races, finishing on the podium 182 times.**
- **Giuseppe Farina won the very first Formula One race ever held.**
- **Valentino Rossi holds the record for most MotoGP championship wins.**
- **Carlos Sainz Sr. has two World Rally Championship titles and three Dakar titles to his name.**

?! Get this!

Some of the greatest names in racing come from Formula One.



Save the planet with a Nature Clean-up

Words by Leon Loubser and Sulé Potgieter

Illustrations by Kai Neilson

A nature clean-up might sound a lot like doing chores... But, if you know how to make it fun, cleaning up your environment might just turn into one of your favourite things to do!

Keep your clean-up sustainable

1. Put the rubbish in buckets instead of plastic bags. Plastic bags end up harming the earth just as much as what you picked up!

2. Sort through your bin. Separate the recyclable items from the rubbish and put them in the nearest recycling bin.

?! Get this!

You can do a nature clean-up almost anywhere! The park, the beach, and any other natural space.

3. Stay hydrated! Helping mother nature all day can be hard work! Remember to drink lots of water and eat healthy snacks!

4. Always work with an adult by your side and watch out for strangers. We all want to help our planet, but keeping yourself safe is important too!

?! Get this!

Most of the litter we collect is some form of packaging used for food. This could be paper coffee cups, packaging for take-aways, and cold drink cans!

Why should we clean up nature?

If we can keep our environment clean, we reduce pollution. Nature can start protecting endangered species, and we can also help preserve the Earth's natural resources!

We clean up our planet because it is our home, and we don't want it to die. It has protected us for so long and it is only fair that we start returning the favour!

Make it a game!

Make your clean-up a competition! Decide on a meet-up point and arrange with everyone to be there after an hour. When everyone is back, see who was able to collect the most items and crown them the 'Ultimate EnviroKid'. Bonus points if you have collected the largest variety of materials!

Play a game of 'freeze'. Start cleaning up your area with your friends, and while you do that, someone else plays a song and pauses it at random intervals. When it pauses everyone must freeze. If the person who paused the song sees someone move, that person should empty their bin of everything they have collected and start over. At the end of the song, see who has the most rubbish in their bin to find the winner.

Get this!

Statistically, people on the move, whether it is on foot or by car, are the biggest litterbugs! They are usually on their way somewhere which means that they do not really want to stop and look for a rubbish bin.

Don't be discouraged

It's always nice to do something good for the planet, and when we have a look at our beautiful planet's condition, we know that it's quite necessary. Sometimes we get upset when we help clean the environment just to see other people litter all over again.

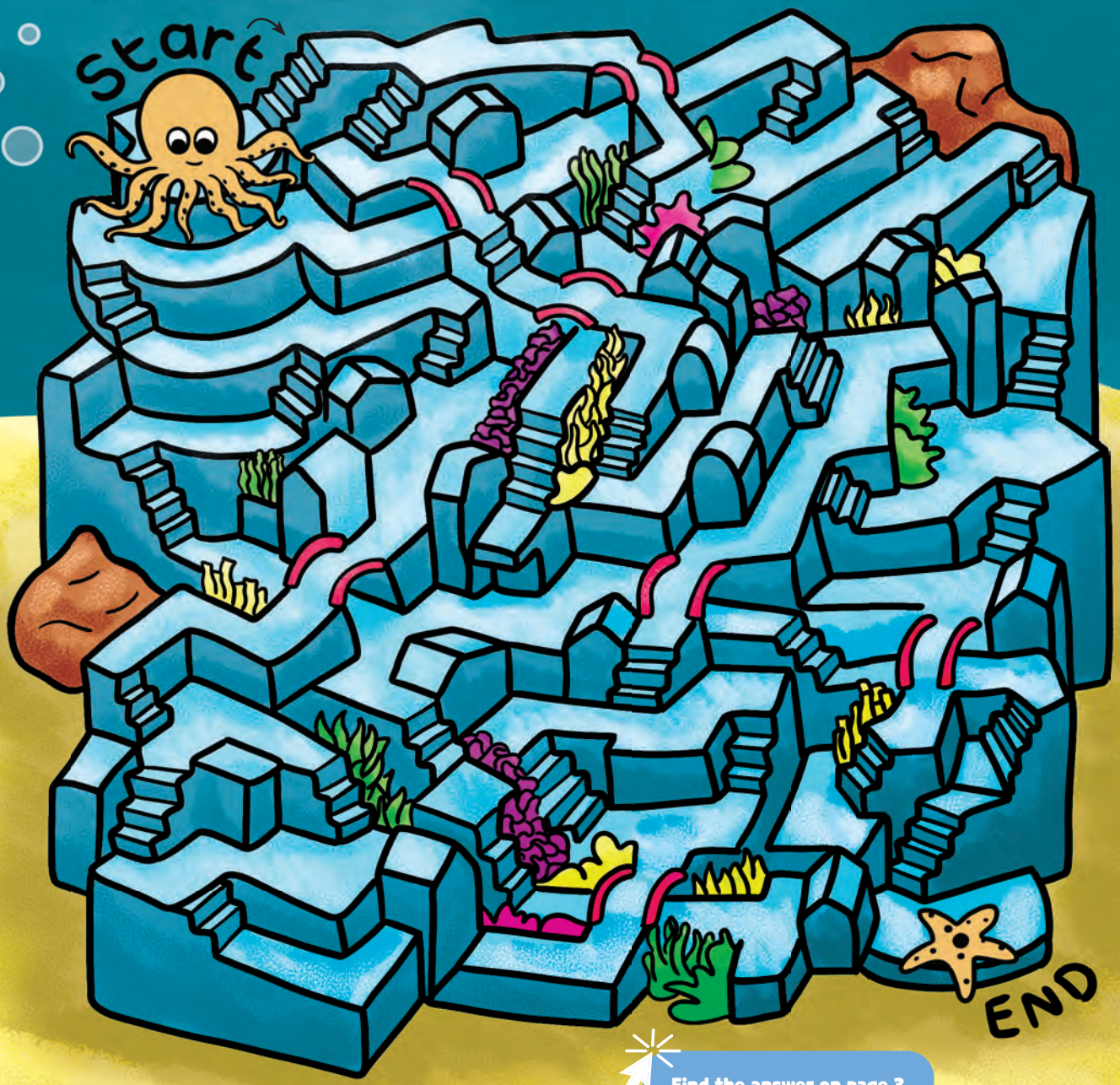
But, when we clean up the planet, we inspire others to do the same! By organising a clean-up, we can create a movement of people who want to help clean our planet and work together for a better, cleaner future.

Sunken Maze

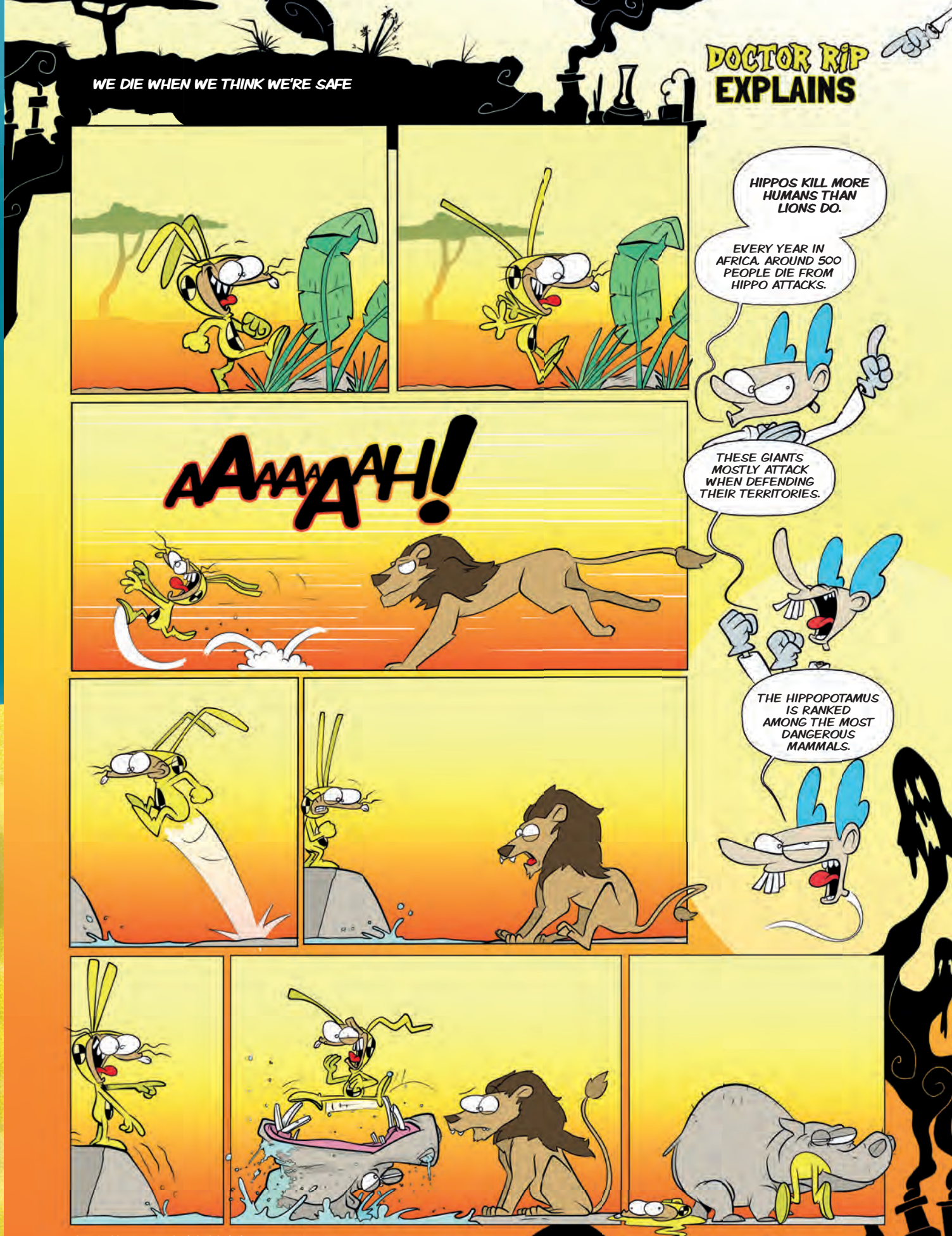
How to play

You can find all sorts of crazy things on the ocean floor! Guide the octopus through the maze ruins to join up with the starfish.

Illustration by Kai Neilson



Find the answer on page 3



Created by Freg and Michel Quintin.
First published in Docteur RIP 1, by Éditions Michel Quintin, Canada.