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# supernova

The mag for curious kids

Caught in  
**Africa's**  
**STRONGEST**  
jaws

Vol  
11.6



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Story and artwork  
Maya LeMaitre

# Mimi's LIFE ON Mars







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# Hi SuperKids



**Candice**

Wow, what an awesome year it has been for our team, putting together the six amazing magazines that make up a pretty cool Volume II. Our 11<sup>th</sup> year of *Supernova* has been so fun, exciting, innovative and inspiring! And what better way to end off our 11<sup>th</sup> Volume with a big **BANG** than with an issue on the mighty Nile crocodile!

With their ancient wisdom and tough survival skills, crocodiles can teach us two very valuable life lessons. Firstly, be adaptable! Crocodiles have existed for millions of years only because they have been able to adapt to lots of different environments! In life, being adaptable allows us to navigate changes and challenges more effectively. This way, you can thrive in whatever situation you find yourself in!

Next, and probably most importantly, be patient. Crocodiles are the perfect example of a patient hunter – lying low and waiting for the perfect moment to strike. Learning patience helps us make better decisions and achieve our goals. Don't rush things – you'll know when the time is right!

Going into the new year, make sure to draw inspiration from the ancient wisdom of crocodiles and be adaptable and patient. We hope you enjoy this jam-packed issue just as much as we enjoyed putting it together!

Happy reading, and stay curious kids!

## Edward's top picks in this issue!

I loved the photo of the **Pillars of Creation**. It's crazy how we can take photos of things so big and so far away!

Reading about new technology always surprises me! What do you think of **Genetic Engineering** (page 13)?



Whoever invented the lightbulb had a very bright idea... You can find out all about them in the **History Of** (page 12).



**Edward**  
Writer and content creator



Hey guys! These are my absolute top picks that you **HAVE** to check out in this new issue!

I always have fun working on the articles I do in *Supernova*! Writing the article on **Land Art** was no different - it was so cool to learn about all the different building methods and see the cool art that people have made!

Check out **Get Active** (page 38) and see how creative you can get with the elements of nature!



Learning about crocodiles was lots of fun in the new **Ant's Eco Adventure** (page 24). Did you know they can swim at up to 35km/h?

# supernova

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# The Regulars

## The Pinboard

By you. For you.

4

## The History of...

The Lightbulb

12

## Tech Talk

Genetic Engineering

13

## The Pro-Files

Heritage Specialist

14

## Trends

Mullet Madness

15

## Andy's Atlas

Marrakesh

16

## Life, the Universe and Everything

18

## Photo Feed

Friends of a Feather

20

## Get Active

Land Art

38

## Brain Games

Draw like Frida

42

## Convos with Candice

How to Unwind

43

# The Features

## 24 Captivating Crocs

Like them or loathe them, crocodiles are fascinating ancient predators that have been feared, admired and respected by humans since we joined them in existence! Let's dive into the murky waters and sun-soaked riverbanks to uncover the secrets of these incredible reptiles.



## 29 Make a delicious croc cupcake



Join us in the kitchen for a toothy adventure as we transform simple cupcakes into adorable crocodile characters! With long snouts, candy eyes, and a sprinkle of imagination, your cupcakes will come to life! Get ready to unleash your inner pastry artist.

## The Secrets of Your Second Brain

Did you know your tummy is more than just a food processor? Get ready to embark on a fascinating journey into your gut, the second brain! From feelings to digestion, this powerhouse controls more than you think.

Then, make a super yummy good gut smoothie to satisfy your second brain!



## 5 Women Who Changed the World of Art

30

Dive into the vibrant world of art as we celebrate five remarkable women who wielded brushes, chisels, and creativity to reshape history! From Frida Kahlo's colorful canvases to Yayoi Kusama's polka-dotted dreams, these fearless artists broke barriers and inspired many!



Answers for What'cha Reading, page 41:

- 1a. True
- b. False
- c. True
- d. False

- 2. nose, salivary, oesophagus, stomach, chyme, small, large



# Ask Jules?

Simone (11)  
from Irene asked us:

## Is the Sahara the largest desert in the world?



### Jules

No, the Sahara is not actually the largest desert in the world! Believe it or not, the largest desert is actually Antarctica! Deserts are not defined by hot temperatures and sand dunes – instead it is all about the low amounts of rain that falls there, and the lack of animal and plant life.

Even though Antarctica has a lots of water in ice form, there is very little water available as a liquid to sustain life. The cold temperatures also freeze the water vapour out of the air. This means that Antarctica is not only the largest desert, but it is also the driest continent in the world! This frigid piece of land covers a whopping 14.2 million squared kilometres, and only receives 2cm of rain per year.

Sadly, this top spot on the world's largest desert list may not be locked in for long! With climate change and the high levels of ice melting at the Earth's poles, polar deserts like Antarctica may shrink in coming years, leading to rising sea levels and the loss of these important and fragile ecosystems.

## Catch up with a comic book author

Shaylee (15) wrote her very first comic book called *Demon Force*! The comic book is about Lukai, who is starting his journey in the Hero Academy and needs to get through difficult times to become a hero!

Shaylee says her favorite part of creating the comic was drawing the characters with different expressions on their faces, and doing different actions. She went on to say: "I really enjoyed writing the story, and how each character's life changes and develops as the story goes on".

Shaylee has found her passion and wants to make a career from writing comics! Seeing her comic book published by BK Publishing, and seeing her name on the book makes her super happy. She has already begun writing and drawing new illustrations for her next *Demon Force* comic.





# Saturn's disappearing rings

## ?! Get this!

The amazing rings around Saturn are not solid. They are made up of bits of ice, dust and rock. Some of these pieces are smaller than a grain of sand while others are bigger than skyscrapers!

NASA has revealed that the famous hoop rings around Saturn will no longer be visible from Earth by 2025! So, stargazers should enjoy seeing Saturn's rings while they can. Thankfully this is just an optical illusion!

This is because in March 2025, Saturn will align perfectly with Earth's point of view. As a result, the rings, which extend from 70 000km to 140 000km (the equivalent of the width of 30 Earths), will become invisible.

Thankfully, we won't have to wait long for the rings to return! The sixth planet from the Sun will continue to rotate and will be on its best display again in 2032.

## Creature FEATURE

Capybaras are the world's largest rodents, resembling giant guinea pigs. These water-loving creatures are semi-aquatic and are found throughout South America and portions of Central America near marshes, grasslands, and forests where water is readily available. Their partially webbed feet make them great swimmers, and their eyes, ears, and nostrils are located at the top of their heads, like hippos, to help them keep their bodies below water while they watch out for predators. Capybaras are able to completely submerge themselves for up to five minutes, allowing them to hide from predators like jaguars, caimans, and anacondas! They are super social and are often seen chilling in groups of up to 30 capybaras. Their two long, front teeth, like other rodents, never stop growing. So capybaras must keep them at a reasonable length and wear them down by grinding and chewing on food or bark. In order to get the most nutrition out of every meal, capybaras are autocoprophagous, meaning they eat their own poop!





## Did you know?

An ostrich's eyes are bigger than its brain



# CHOC KIDS CORNER

**HOME**  
for the holidays



For many children, celebrating the holidays at home surrounded by their loved ones is a cherished idea. At CHOC Childhood Cancer Foundation SA, our mission is simple yet profound: to bring smiles to the faces of these young warriors by reuniting them with their families during this special time!

Every contribution, no matter the size, makes a profound impact in making these heartwarming reunions a reality! Check out the CHOC website at [choc.org.za](http://choc.org.za) to find out more on how you can help!



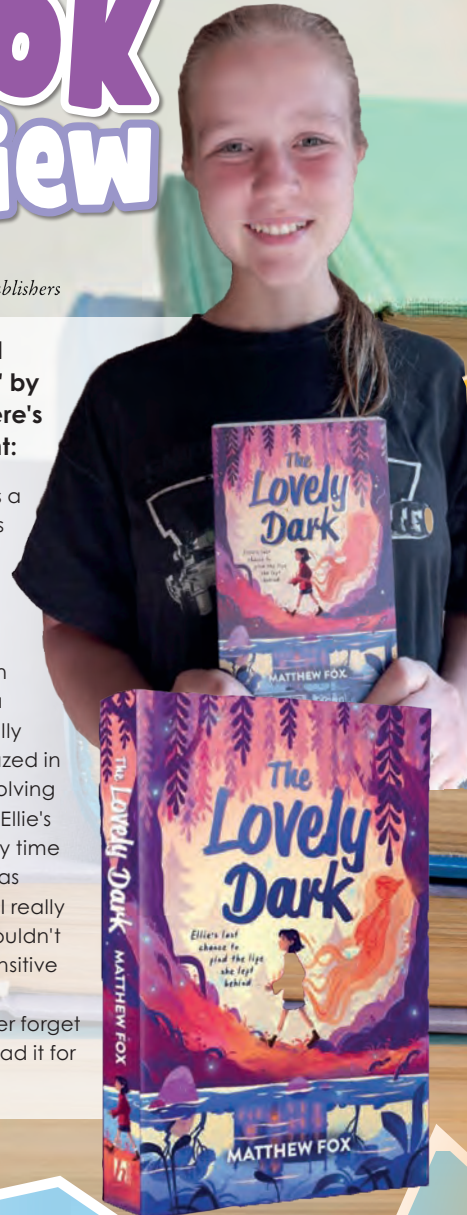
# Danica's Book Review



JonathanBallPublishers

**Danica (12) read 'The Lovely Dark' by Matthew Fox. Here's what she thought:**

The Lovely Dark was a dark and mysterious book. The story was very sad and emotional, but it turned out to be such a sweet story in the end! This is not a book I would typically read, but I was amazed in every way. I loved solving the mystery behind Ellie's character and every time I turned a page, I was surprised. Although I really loved this book, I wouldn't recommend it to sensitive readers. This was an adventure I will never forget and I wish I could read it for the first time again!



## Did you know?

Dragonflies can see in all directions at the same time







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## The Pillars of Creation

Photo by the James Webb Space Telescope, NASA

These towering tendrils of cosmic dust and gas can be found right in the middle of M16, or the Eagle Nebula, which is around 6 500 light years from Earth! Called the Pillars of Creation, this is a very special region in the nebula where stars are born.

In order to see the Pillars of Creation, you need a super large telescope and almost perfect viewing conditions. Photos like this are very rare and help scientists understand how stars form and burst out of these clouds over millions of years.







# Tchaikovsky

The master of classical musical genres

Pyotr Ilyich Tchaikovsky was born on the 7<sup>th</sup> of May, 1840 in Votkinsk, Russia (which is now Udmurtia).

Tchaikovsky was only five when he started taking piano lessons. He learned how to read music, and was soon better than his teacher!

His father was a Ukrainian mining engineer, and was hired as the Director of the St. Petersburg Technological Institute when Pyotr was 10 years old.

Pyotr was sent to the prestigious boarding school to prepare him for a career. After finishing school, he got a job as a clerk for the Ministry of Justice.

But, Pyotr's interest in music never left him! When he was 22, he heard about classes being offered by the Russian Musical Society, and immediately decided to begin his musical studies.

He learned to play the flute, the organ, and the piano, and learned all about composition.

He graduated and became a teacher at the music conservatory in Moscow. This is where his career as a professional composer truly began!

Eight years after starting his musical studies, he composed his first recognised masterpiece, the *Romeo and Juliet Overture-Fantasy*.

Pyotr was deeply inspired by Shakespeare's writing, and in later years composed other works for *The Tempest* and *Hamlet*.

Although Pyotr wrote many types of music, his most famous is the music he wrote for ballets. In 1877, he finished composing *Swan Lake*, the first of his three ballets.

During his career, he toured Europe twice, conducting in Leipzig, Berlin, Prague, Hamburg, Paris and London.

Pyotr's second and third ballets were *Sleeping Beauty* and *The Nutcracker* – which was his last and is considered to be his best work!

*The Nutcracker* was performed for the first time in St Petersburg on the 16<sup>th</sup> of October 1893. Five days later, Pyotr suddenly became ill with cholera, a disease many people were catching in the city. He died four days later.



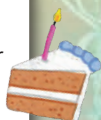


# BIRTHDAY TRADITIONS AROUND THE WORLD

*In some countries, celebrating your birthday is all about making a wish, blowing out your cake candles, and enjoying a great time with family and friends. Every culture has their own unique birthday traditions, beliefs and ideas. Some are common, some are unusual, and others are just weird!*

*Illustrations by Alexandra Botha-Green*

If you're celebrating your birthday in Spain, you can expect your Spanish friends to pull on your ear to wish you! Traditionally, your ear is pulled once for every year you've lived, with an extra one for good luck. So, if you're turning 15, your ear will be pulled 16 times!



In China, you'll be treated to a lovingly prepared bowl of longevity noodles on your special day! And the longer the noodles, the better! These noodles symbolise a long life of happiness and good luck, and it is traditional to see how far you can slurp them up before biting them!



In Jamaica, your birthday is celebrated with a bit of messy fun! According to tradition, flour is thrown in the birthday boy or girl's face by 'well-wishers'. Often, they will have water thrown in their face first to ensure that the flour really sticks!





# The History of the lightbulb

Words by Alexa Simon

Flipping a switch and turning on a light is a simple action that we definitely take for granted nowadays! Hundreds of years ago, you had to make use of oil lamps or beeswax candles to provide a dim light that only lasted a few hours, or simply make use of the moonlight! Let's take a trip back in time to see how much our lives have changed since the invention of the lightbulb.

## A bright idea

While Thomas Edison is credited with inventing the lightbulb in 1879, many people don't know that he was not the first person to experiment with the idea! Back in 1809, Humphry Davy created the first electric light. However, it didn't last long – these early bulbs had extremely short lifespans, were too expensive to produce or used too much energy. Finally, almost 70 years later, Thomas Edison discovered a bamboo filament that lasted for 1 200 hours.



### ?! Get this!

Thomas Edison tried 4 700 different materials to find the perfect filament, including hair from a beard!

## Rewiring the world

The invention of the lightbulb completely transformed society. Many people think that it is the most important invention since the discovery of fire! Lightbulbs meant that people were able to stay up later, the work day was extended, socialising in cities after dark became more popular, and homes became safer without the need for light from fires! And, the lightbulb led to even more inventions – most importantly, electrical power grids.



### ?! Get this!

The world's longest lasting light bulb, the Centennial Bulb, was installed in 1901 and has been burning for over 120 years!

## Glow Up with LEDs

Unfortunately, incandescent light bulbs are not very efficient. Only about 10% of the bulb's electricity is turned into light, and the other 90% is lost to heat. They are now quickly being replaced with LED lightbulbs, which are much more energy efficient.



# GENETIC ENGINEERING

Words by Lizé Behrens  
Layout by Enrico Botha

*Have you ever wished you could change the colour of your hair or eyes? Or imagined a fruit that looks like a banana, but has the skin of a watermelon and tastes like a coconut? With genetic engineering, these changes are possible with only a few small tweaks to DNA!*



## What is Genetic Engineering?

Genetic engineering is the process of changing the DNA of an organism. DNA is the building block for every life form on the planet. This means that genetic engineering can add or take away some features from plants, animals, humans and other living things. Genetic engineering can be used to create medicines and vaccines, get rid of diseases, and make our fruit and vegetables more nutritious!



## ?! Get this!

Genetic engineering started in the early 1970s.

## How does it work?



Scientists use advanced techniques in labs to modify an organism's DNA. They take a specific gene from an organism (called the donor) and put it into another organism's DNA.

This makes the DNA have traits of both organisms!



## ?! Get this!

Living things that have been created using genetic engineering are called genetically modified organisms (GMOs).



## Our responsibility

Genetic engineering can improve our lives, help us live longer and be healthier. However, genetic engineering is controversial. Some people think that modifying human genes is dangerous or wrong, and that genetically modified food could harm people's health. It is our responsibility to make sure it is used ethically.



## ?! Get this!

Genetic engineering could help solve world hunger by improving food production and making plants grow faster and last longer.



# Heritage Specialist



Hi, I'm Pascal!

I'm an archaeologist, and I love learning and discovering information about the past – it shows us where we come from and helps us understand our roots!

## What does a heritage specialist do?

I identify, discover and protect sites that are historically important! Protecting and preserving historical buildings, structures, and cultural sites involves assessing the condition of these sites (and documenting it!), developing conservation plans, and overseeing restoration projects.

## What is a typical day like for you?

When I am on site, I wake up early to go out into the field and survey! Working in a team, we excavate and document interesting things we find. Some days, I am in the office writing up reports about my findings. These are presented at conferences to raise awareness about the importance of cultural heritage.

## What are some challenges in your job?

It can often be a challenge to work with communities around heritage sites and explain the importance of

protecting and preserving these significant pieces of history. Some communities are very protective of their land and history, so you should always be mindful of this.



## Do you need qualifications to do your job?

Yes, you need to have an Honours degree in Archaeology or another heritage related study in order to register as a professional with the Association of Southern African Professional Archaeologists (ASAPA). Attending workshops and reading new research publications is important to stay informed on new advancements in the field!



## What is the best part of your job?

I love being out in the field looking for heritage sites! These sites are often in some of our country's most beautiful places. Finding old stone tools or pottery that were an important part of someone else's life in the past is also a very significant and special feeling!

### **P** Pascal's advice

Stay curious and never stop asking questions. Archaeology is all about uncovering answers to the mysteries of history!



# MULLET MADNESS

## Business in the front & party at the back

Words by Sinekhaya Fikeni

**Mullets are back with a bang! Whether you love it, hate it, or love to hate it, this popular hairdo is officially timeless. And now, anyone can rock a mullet!**



Before mullets became a favourite hairstyle in the 80s, they had actually already been around for many years! Way back when, mullets were popular in ancient Assyria, Egypt and Greece to keep warriors' necks warm while also making sure they could still see clearly in battle! This meant it was easy to maintain, and practical.

**Mullets break all the style rules – being way longer in the back and shorter in the front. Did you know these fun facts about mullets?**

- Although people have been wearing mullets for years, some think the name 'mullet' came from a **1994 hip-hop song** called "Mullet Head", which includes the lyric, 'Cut the sides, don't touch the back'.
- Tami Manis, from Tennessee, holds the current Guinness World Record for the **world's longest mullet!** It's around 1.76m long.
- People in Kurri Kurri, Australia believe that the mullet originated in their town, so they decided to create a festival to celebrate it. Now, every year, people from all over Australia flock to **Mullet Fest** to celebrate the iconic hairstyle.



### Get this!

Mullets have recently been made popular by some big celebrities, like Miley Cyrus and even South Africa's very own rugby star, Eben Etzebeth.





# Marrakesh

## The Kingdom of Morocco



Words by Andrea Vermaak

I couldn't wait to visit Morocco again!

I've kept in touch with Kader and Salma, and met up with them again to go on a whirlwind tour of a few of Morocco's highlights...

Read about Andy's first trip to Morocco in *Supernova* Vol 4.3!





## An ancient marketplace

Of course I had to revisit Djemaa el-Fna, where I'd first met my friends. This main square and marketplace in the medina quarter (a traditional walled part of the city) of Marrakesh is about 1 000 years old!

I really enjoyed the variety of shows in the square that night. There were storytellers, musicians, singers... The atmosphere was electric with culture!



Photo by Zakariae Daoui

The market is famous for its food stalls. The air is filled with the smell of exotic spices! You can try everything from snail broth to spicy lamb sausages and even camel! I must admit that I wasn't brave enough to try...



The site has become a favourite filming location for many movies and TV shows! It has been used in famous films like *Gladiator* and *The Mummy*!

## Ait Benhaddou

Early the next morning, we were on our way to the Ksar of Ait Benhaddou, a UNESCO World Heritage Site in the Ouarzazate region. A ksar is a group of traditional earthen buildings, including several homes and a mosque. They're surrounded by high defensive walls that are reinforced with corner towers. The oldest buildings are about 400 years old, but they were built using an older southern Moroccan method and style.



The Dadès Gorges was the highlight of the trip for me! The Dadès River carved out these deep gorges. The steep walls are between 200 and 500m high. It was so fun to drive along all the winding roads!



Photo by Warren Photographic

I spent my last day with my friends in the Agafay desert – a short drive from Marrakesh. Moroccan camels, a.k.a. dromedaries, only have one hump and not two. They're traditionally used to transport people and goods across the desert.



# 6 DEADLY JOBS

## THAT SOMEONE HAS TO DO

Words by Chanel Roux  
Illustrations by Benoît Knox

### Venom milker

Snake milkers are specialist zoologists with a super 'hands on' job – they collect venom from different snakes! This is used to make medicine called anti-venom, which saves many lives each year. To milk a snake, you have to massage the snake's venom glands until the venom is released. Often, snake milkers get bitten and have to use anti-venom themselves! I guess if this dangerous career doesn't work out, they can always become massage therapists...

UM, I'M KINDA NEW TO THIS JOB... COULD YOU JUST DEPOSIT YOUR SAMPLE IN HERE?

LEAVE IT TO THE PROS – WE'VE PERFECTED THIS CRASH COURSE!

### Stuntman

Everyone thinks that movie stunts are all about looking cool. But they actually take a lot of talent, preparation and practice! These trained professionals perform difficult and risky actions on movie sets, like fight scenes, motorbike or car crashes, falls from high buildings, dives, and even martial arts. They work closely with directors, producers and special effects crew to plan and execute stunts that are visually impressive and safe for everyone.

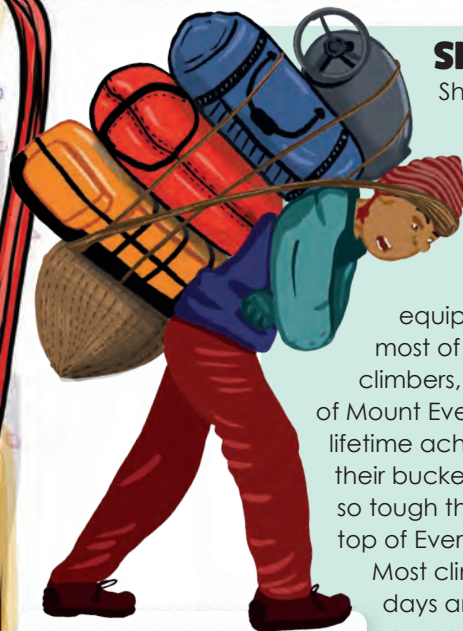
#### ?! Get this!

Ron Cunningham, the oldest working stuntman, was over 90 years old! In his old age, he was known to walk on beds of nails and smash glass bottles against his neck!

Some people find a 9am – 5pm office job simply too boring. Instead, they prefer to go to work for a daily heart-pounding adrenaline rush – all while they put their lives on the line!

GRAVITY CHECK!





## Sherpa

Sherpas are a unique group of people that help mountaineers climb up the huge Mount Everest peak by guiding them, preparing equipment and carrying most of the gear. For most climbers, reaching the top of Mount Everest is a once-in-a-lifetime achievement to tick off their bucket list. But, sherpas are so tough that they climb to the top of Everest multiple times.

Most climbers need four days and a few bottles of oxygen to reach the top of the world's tallest mountain. However, Kazi Sherpa set a world record and made it to the top of the mountain in just 20 hours!

### ! Get this!

In 2019, a guide called Kami Rita Sherpa reached the top of Everest for the 24<sup>th</sup> time! Not only was this the world record, but it was also Kami's second summit in a week.



THIS AIN'T  
NO TIKTOK  
CHALLENGE,  
KIDS!

## Smokejumper

Smokejumpers are real-life superheroes who fight fires in the most daring way possible! They jump out of airplanes and parachute into remote areas where fires are raging. Then, these brave firefighters use their hands and special tools to battle the flames, without help from any bulldozers, water tankers, or high-tech firefighting equipment.



THANK  
GOODNESS  
I WORK  
WELL UNDER  
PRESSURE...

## Underwater welder

Welding is a tricky job at the best of times, but there are lots of perks to doing it underwater! You won't inhale poisonous fumes, it won't be super hot, and you'll still get to dress like a Star Wars villain. These welders dive deep underwater using scuba tanks to fix things like ships, dams and pipelines. Sounds like fun, except diving down so deep means that the welders have no communication equipment, aren't tethered to the surface, and are at risk of getting trapped in super-high-pressure areas!



## Landmine remover

Steady hands and nerves of steel are a total MUST for this job. These brave technicians remove dangerous and sensitive bombs that are buried in the ground. Landmines can be hard to detect and even harder to defuse successfully, so even the most experienced landmine removers are constantly at risk every time they do their job.



# FRIENDS

of a

# FEATHER



**The Common Ostrich**  
Photo by Quliyeva Fsan

Ostriches can't fly, but they sure make up for it with their incredible running speed of almost 70 km/h! They are also known for laying the biggest eggs in the animal kingdom.

Interestingly, ostriches have three stomachs. However, they don't have any teeth, so they swallow pebbles and stones to help grind up their food in their stomachs! The stones are kept in a muscular part of their stomach called a gizzard. An adult ostrich can carry around 1 kg of pebbles in their stomach.





### Puffins

Photo by Krisztina Scheeff



Known as the parrots of the sea, puffins love to swim and catch fish. They live in big groups on cliffs near the coast, making their homes in little holes in rocks. Their bills change colour depending on the time of year! [#MuchAdoAboutPuffin](#)



### Indian ring-necked parakeet

Photo by Petr Sochman

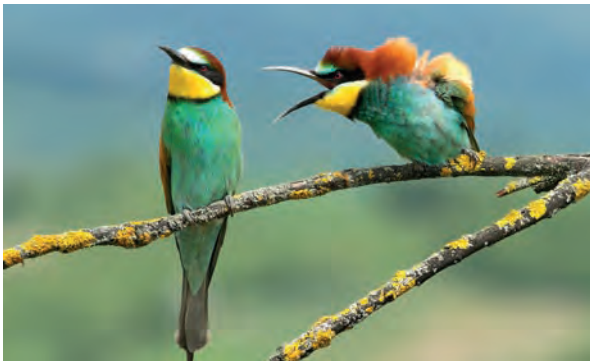


These Asian parrots can talk just like humans. They have an amazing talent for copying sounds, speaking words and singing songs! Long ago, they even repeated sacred prayers in the gardens surrounding Indian places of worship. [#Tweethearts](#)



### European bee-eater

Photo by Vlado Pirsá



These birds eat 250 bees every day! Their super quick reflexes allow them to catch insects right out of the air while they fly past. [#Im-peck-ableTiming](#) [#ChirpOffTheOldBlock](#) [#BuzzOff](#)



### Lappet-Faced Vulture

Photo by Saverio Gatto



These fascinating African birds are the most powerful vultures on the continent. They are also one of the most aggressive & use their strong beaks to tear skin and tendons from a carcass.



### Burrowing Owls

Photo by Mario Gustavo Fiorucci



These owls are super agile and can turn their heads 180° to see their surroundings! When threatened, they often run or flatten themselves against the ground to hide. [#WhatYouLookingAt](#)



### Gentoo penguin

Photo by Jennifer Hadley



With their streamlined bodies and powerful flippers, these penguins can dive deeper than a submarine and swim as fast as a race car! [#TalkToTheFlipper](#) [#FlippinCool](#) [#MeantToFly](#)





## Koala bear chewing on eucalyptus leaves

Photo by David Clode

The word 'koala' comes from one of the Australian Aboriginal languages, Dharug, and means 'no drink' or 'no water'. This is because koalas hardly ever drink water! They get all of the liquid they need from eating fresh eucalyptus leaves. These leaves are poisonous to eat and often kill other animals, but koalas have special liver enzymes and symbiotic gut bacteria that help to break down the poisonous compounds. They can eat up to a kilogram of eucalyptus leaves a day without even breaking a sweat!



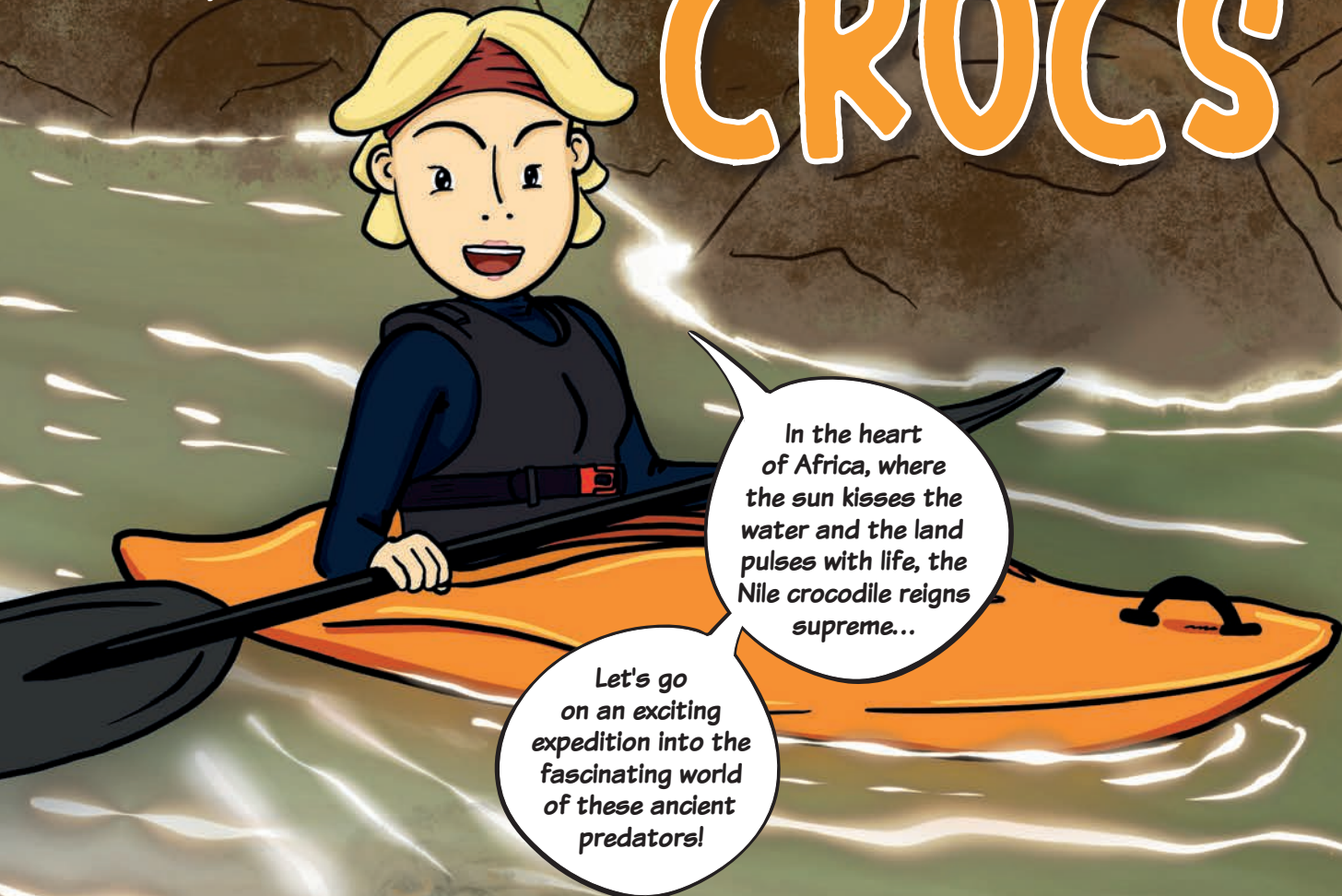




# Captivating CROCS

Words by Candice Robertson

Illustrations by Vicki Venter & Benoît Knox



## ?! Get this!

The Nile crocodile is one of the largest of all crocodiles!

## ?! Get this!

Crocodiles have a remarkable evolutionary history and are often referred to as living fossils. They have remained relatively unchanged for over 200 million years, making them one of the oldest reptiles on Earth!



## Habitat

Crocodiles are semiaquatic and gather in both freshwater and saltwater habitats. Since they are ectothermic (cannot control their own body temperature), they rely on their habitat temperature and prefer warm, tropical climates.

Nile crocodiles can be found in the Nile Basin, across sub-Saharan Africa, and in western Madagascar. Nile crocodiles are mostly found in lakes, rivers, and mangrove swamps, but a few groups of crocodiles have also been found living in caves and near springs in the Sahara!



Photo: iStockphoto.com

Crocodiles have salt glands on their tongues, which help them expel salt from their systems.

## Habits & Diet

Nile crocodiles spend most of their day warming themselves in the sun, lounging with their mouths open, or retreating to the water to cool down.

Crocodiles are opportunistic feeders and have a diverse diet. They mostly eat fish, but also prey on mammals, birds, and other reptiles. The largest Nile crocodiles eat wildebeest, small hippos, buffalo, and other large animals!

Usually, they wait patiently underwater for their prey. When an animal approaches, they launch themselves forward in a lightning attack and perform a 'death roll'. During this, they clamp their jaws down on their prey and use their tail to spin around powerfully in the water.



Photo: iStockphoto.com



Photo: iStockphoto.com

Crocodiles swallow small stones to improve their digestion! These stones help grind up food in their stomach (especially for crocodiles that eat their prey whole), and can stay in their stomachs for years!

### ?! Get this!

A mother crocodile can carry up to 15 babies in her mouth at once!

### ?! Get this!

The sex of a baby croc is determined by the temperature of the incubating egg. Extreme hot or cold temperatures result in female hatchlings, while mild temperatures result in males!

## Crocodile hatchlings

Despite their fearsome appearance, crocodiles are actually super gentle parents! Females lay up to 80 white hard-shelled eggs, and bury them under sand in riverside nests. For up to three months, the mother waits nearby, protecting the eggs from predators. As soon as the babies are ready to hatch, they start to chirp, and the mother digs down into the nest and carries the babies to the water in her mouth.

The mother guards them from predators for a few more weeks until they go off on their own.



Photo: iStockphoto.com



# Adaptations and Anatomy

Crocodiles have unique characteristics and have acquired traits over a long period of time which have allowed them to thrive in their environment. They are mainly nocturnal hunters and have excellent night vision! Their sense of smell and hearing are also extremely well developed.

## Skin

Small bumps, called integumentary sensory organs, cover their bodies and faces. These bumps are more sensitive than human fingertips and allow crocodiles to detect extremely small movements in the water made by potential prey or threats.

### ?! Get this!

The longest crocodile captured alive measured 6.17m and weighed 1 075kg! It was found by a National Geographic team in Agusan del Sur Province, Philippines.

## Scales

Crocodiles have rather different scales from those of other reptiles. The hard, bony plates on their backs are called scutes. While they do offer protection from attacks and fights, scutes also help capture heat from the sun to regulate a crocodile's body temperature while it is in the water, and even helps them float!

## Eyes

Crocodiles have thick, reinforced eyelids which protect their eyes during fights. They can also draw their eyeballs back into their sockets for further security!

Crocodiles also have a third, transparent eyelid that covers the eyes while they swim underwater.



## Feet

Crocodiles have webbed feet which allow them to make fast turns and sudden moves in the water. Crocodiles also use their feet as rudders to steer while they are swimming.



Photo: C. S. S. S.



## Jaw

Crocodiles have one of the strongest bites in the animal kingdom. The muscles that close their jaws are incredibly powerful, allowing them to exert tremendous pressure when capturing prey. Their bite is nearly three times the force of a lion's or tiger's.

## Teeth

Crocodiles use their teeth to hold, not to cut, which means that they also can't use them to chew. Because of this, when a crocodile gets a mouthful of something too big to swallow in one bite, it uses the 'death roll' method to tear off meat.

When a crocodile loses a tooth, there is a small replacement already on standby. They are able to replace each of their 80 teeth up to 50 times over their lifespan – that's 4 000 teeth!



### ?! Get this!

*Crocodiles can hold their breath underwater for more than an hour!*

### ?! Get this!

*Crocodiles don't sweat. To keep cool, they open their mouths which is known as 'mouth gaping', very similar to panting. They often sleep with their mouths wide open to release heat.*

## Tail

Crocodiles are very fast swimmers – they use their powerful tails to propel themselves through the water. Big muscles attached to their hips and back legs allow them to move their tails side to side with strong thrusts. They can swim up to 35km per hour in short bursts.



## Stomach

Crocodiles have the most acidic stomach of any vertebrate. This allows them to dissolve and digest bones, hooves and horns or shells from their prey.





## Threats

Sadly, many crocodile species are now classified as threatened or endangered due to habitat loss, poaching, and the illegal trade of their skins.

At the moment, the Nile crocodile is not endangered.

## Impact on the ecosystem

Not only are crocodiles an incredibly interesting species to learn about, but they are also hugely important to other life on Earth!

Crocodiles modify their habitats, such as wetlands and riverbanks, to help support them when nesting and feeding. These modifications create diverse habitats for other species, including birds, fish, and invertebrates. Their burrows also serve as shelters for other animals during droughts or extreme weather.



The way crocodiles eat also provides vital nutrients to others animals in their ecosystem. This is because they eat large amounts of prey, making their poo rich in nutrients!

Another huge benefit of crocodiles is their sensitivity to changes in water quality, habitat degradation, and pollution. Their presence or absence from an area is a good indicator of the health of the ecosystem there!

Crocodiles have such an important role to play in our rivers!

There's no denying that we have to respect and appreciate their awesome power, and the balance they bring to life in the African wilderness!





# Make CROCODILE Cupcakes

*Crocodiles are known for their powerful jaws and fearsome reputation. Let's get creative and make some delicious croc cupcakes!*

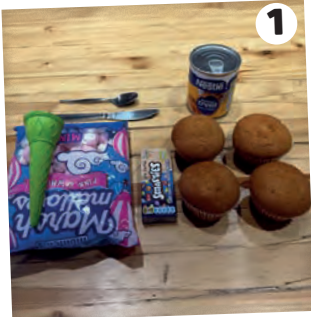


## What you need:

- Caramel
- Smarties
- Green Wafer Cones
- Marshmallows
- Cupcakes
- Knife

## !! Warning

Ask an adult to help you with using the knife.



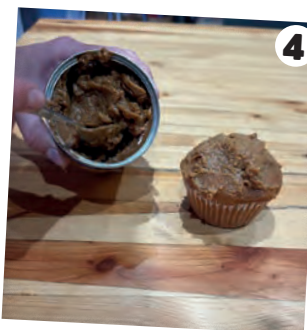
Gather your ingredients – you can use ready-made cupcakes or bake your own!



Cut all of the marshmallows in half.



Sort all of your decorations into plates to make it easy when you decorate!



Open the caramel can carefully and spread it over the top of the cupcakes.



Stick a cone on top of the cupcake.



Now, start decorating your cupcakes! Use the marshmallows as teeth and Smarties for eyes.



Add a slit to finish off the crocodiles eyes. Then, enjoy your sweet treat!



Words by Sulé Potgieter  
Illustrations by Lana Potgieter

# 5 WOMEN

WHO CHANGED THE

## world of art

We've all heard the big names of the art world, like Leonardo da Vinci and Vincent van Gogh. But, when you think about it, where are the female artists? We might not have learned about them, but that definitely does not mean they don't exist. In fact, some female artists were able to accomplish what no male artist before them ever could! Let's have a look at five stunning ladies who changed the world of art.

**?! Get this!**

Some female artists had to use pen names (fake names) to disguise the fact that they were women.

**?! Get this!**

At one point, women were only allowed to study "women's art", like textiles and weaving.



Japanese contemporary artist, Yayoi Kusama was born in 1929, which makes her an impressive 94 years old this year! At one point, she spent time in a mental institution, which is when she started using her art to express what she was feeling. She went to Kyoto Municipal School of Arts and Crafts, where she studied a Japanese painting style called *nihonga*.

Yayoi can do a lot of different forms of art, but her main focus is sculptures and art installations with tons of polka dots. In 2016, she was named one of the most influential people in the world by *Time Magazine*.

### ?! Get this!

In January 2020, Yayoi became a top-selling female artist! Some of her art sold at auction for between \$100k and \$500k!



Yayoi Kusama

Born and raised in Mexico, Frida Kahlo is one inspirational woman! When she was just 18 years old, Frida got in a terrible bus accident, leaving her in bed for three whole months. She had to undergo 35 operations. While she was in recovery, she developed a love for art and painted stunning, vibrant self-portraits that showed what she was going through while in recovery.

Her style was influenced and inspired by Mexican folk art and fantasy, and used lots of bright colours and dramatic symbolism. She tackled tough themes like gender identity, race, and post-colonialism. Today, Frida is one of the best-known Surrealist artists, as well as the first ever female artist to go against the norms of art and explore what was going on in her psyche (mind).

Frida Kahlo





Mary Cassatt was born in Pennsylvania and studied at the Pennsylvania Academy of Fine Arts. She decided to move to Paris to study art and became part of a group called the Impressionists. They were interested in capturing the light and colour rather than painting a perfect copy of something.

In 1906, she received an award called the *French Legion of Honour* for her excellent work. She was the first person to introduce Impressionism to America and used her influence in art to fight for women's rights to vote! She mainly used pastels for her art and focused on the special bond between mothers and their children, and the closeness between family members.

**?! Get this!**

Of all the art that is exhibited in art galleries, only 7% is created by women.

**?! Get this!**

Today, 51% of artists are women.



*Mary Cassatt*



*Sonia Boyce*

Sonia Dawn Boyce, British Afro-Caribbean artist, was born in 1962 in London. Her art extends from paintings and prints, all the way to photography, video and sound! She was part of the British Black Arts movement, where she made art about topics like race, gender, and equality.

In 2016, she was elected to be the very first black woman to attend the Royal Academy of Arts. She has been teaching art for over 30 years and is currently a Professor of Black Art and Design at the University of the Arts in London.



American artist, Georgia Totto O'Keeffe grew up on a dairy farm in Wisconsin. As a young girl, she received art lessons at home and was encouraged by her teachers to follow her passion. When she was 18, she started studying at the Art Institute of Chicago. Georgia was taught to only use traditional techniques, but then discovered Arthur Wesley Dow's revolutionary ideas that emphasised the importance of composition – how you arrange shapes and colours.

She started painting abstract works and took the world by storm with her large paintings of beautiful desert landscapes and stunning flowers. She had to fight hard against the idea that women can't be professional artists, and she ended up being the first female artist to gain respect in New York's art world.

*Georgia O'Keeffe*

### ?! Get this!

Art used to be an Olympic event. Official medals were awarded for painting, sculpture, architecture, literature and music.

### ?! Get this!

Georgia O'Keeffe's painting *Jimson Weed/White Flower* cost \$44.4 million in 2014 and is the most expensive painting done by a woman.



**How does the saying go? Sugar, spice and everything nice? From introducing art movements to the US to fighting for women's rights with the most beautiful pieces of art, this just goes to show that when female artists do something, they make sure it packs a punch... plus a sprinkle of sugar and spice.**



# GUT FEELINGS

## Unraveling the Secrets of Your Second Brain!

Have you ever wondered why your stomach sometimes feels like it's trying to send you a message? Well, that's because your gut is like a secret superhero – your second brain! Let's dive into the fascinating world of how your digestive system works and why it's so closely connected to the brain.





# THE DIGESTIVE SYMPHONY

Imagine your digestive system as a fantastic orchestra, working together to play a symphony of digestion. The conductor? Your brain!

## Mouth

It all starts in your mouth, where your teeth chew up the food, and your salivary glands add special enzymes to begin breaking it down.

## Oesophagus

Next, the food takes a slippery slide down your oesophagus – a sort of food highway that leads to your stomach.

## Stomach

Here, stomach juices go to work, churning and mixing your meal into a soupy substance called **chyme**.

## Small intestine

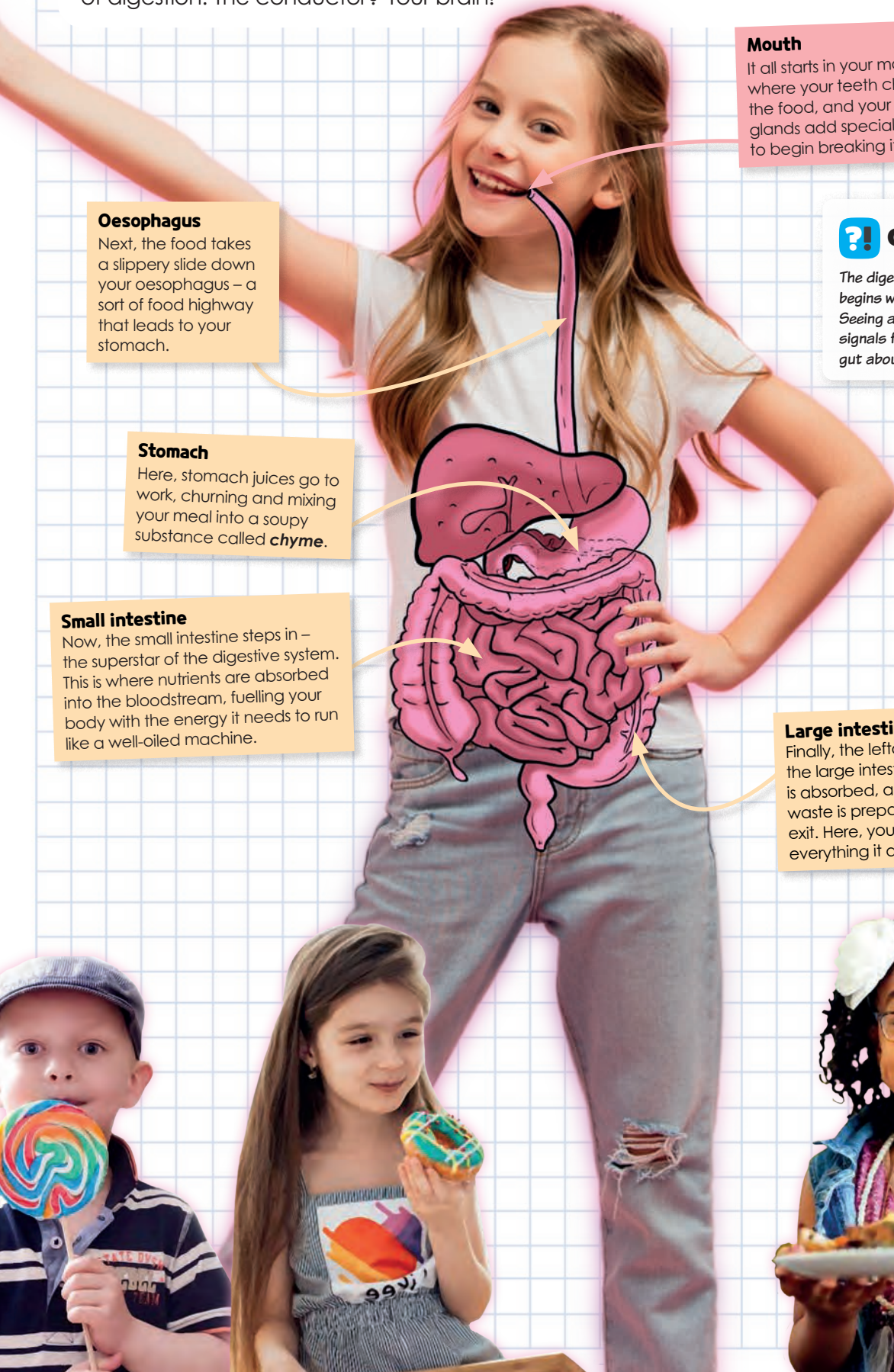
Now, the small intestine steps in – the superstar of the digestive system. This is where nutrients are absorbed into the bloodstream, fuelling your body with the energy it needs to run like a well-oiled machine.

## Large intestine

Finally, the leftovers move into the large intestine, where water is absorbed, and the remaining waste is prepared for its grand exit. Here, your body eliminates everything it doesn't need.

## ?! Get this!

*The digestive process actually begins with your eyes and nose! Seeing and smelling food sends signals from the brain to the gut about what to expect.*



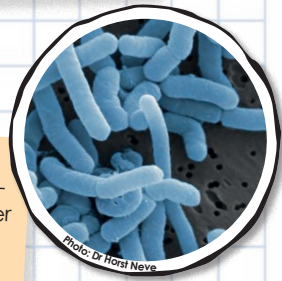


# GUT-BRAIN CONNECTION: A MARVELLOUS LINK

But here's the coolest part – your gut and brain are like best friends who are always talking! Have you ever felt butterflies in your stomach when you're nervous or excited? That's your gut and brain having a chat.

There's a superhighway of communication between your gut and brain called the **vagus nerve**. It's like a fibre-optic cable that sends messages back and forth, making sure everything runs smoothly. When your gut is happy, your brain is happy, and vice versa!

Inside your gut, there's an army of tiny helpers called **gut microbiota** – trillions of bacteria working together like a team. They help digest food, produce vitamins, and even keep the immune system in check.



## ?! Get this!

Did you know that your gut produces neurotransmitters – chemicals that send messages to your brain? One of them is serotonin, which helps regulate mood. So, a happy gut equals a happy mood!

## TRUST YOUR GUT

Now that you know your gut is your second brain, what can you do to keep it in top-notch shape? It's simple!

- **Eat a Rainbow:** Fill your plate with a variety of colourful fruits and veggies. Each colour brings a different set of nutrients to the party.
- **Stay Hydrated:** Water helps everything move smoothly and helps break down food so that your body can take in (absorb) the nutrients.
- **Probiotics Power:** Foods like yogurt and sauerkraut contain probiotics – friendly bacteria that boost your gut health.
- **Listen to Your Body:** If your stomach is growling, it's telling you it's time for fuel. Pay attention to your body's signals.





# GOOD GUT Smoothie

Feed your gut with a super smoothie surprise that it will be sure to love!

## LAYER 5

Sliced banana, a dollop of blackberry jam (or your favourite jam), a drizzling of honey and a spoonful of flaxseed.

## LAYER 4

More yoghurt!

## LAYER 3

Fresh blueberries and crushed almonds (or your favourite raw nuts!).

## LAYER 2

Plain yoghurt with live bacteria cultures.

## LAYER 1

Crushed wheat biscuit (like Weet-bix) mixed with dried mango.

### ?! Get this!

The more varieties of veggies and fruits in your smoothie, the more nutritious it is! This can help your body get rid of some toxins!



Build your smoothie using all of the layers, then tuck in and enjoy!



# Land Art

Words by Edward Allemann

getting creative with nature

Leaves, sand, rocks, stones, branches... What do they all have in common? Well, like many things, they can be used for art! Land art is the process of using only natural materials to create an artwork that will not last forever, but will highlight all the different shapes and colours that nature has to offer.

## An old tradition

Humans have been making art for as long as we've been around, using what we could find around us.

The best thing about land art is that it can be done almost anywhere outside! By just looking around, there are all sorts of different artistic choices to make. Just go outside and open your eyes, and you could find the supplies for portraits, patterns, even sculptures and statues!



Photo: James Brunt



Photo: Hanna Balle, Rye



Land art is a creative hobby that just about anyone can get involved with! With a bit of thought, a fun idea and some commitment, something beautiful can be made from what is around you.



## Create your own land art



Pick somewhere to explore – it could be a park, a forest, a beach, or even your own backyard.



Explore your chosen location. Take a good look at all the different shapes, colours and textures you see.



Collect materials to create your art. Depending on your location these might include pebbles, rocks, shells, bark, leaves, pine cones, seeds, sticks, sand, flowers and anything else you come across.



Find an interesting place to make your art. Look at the materials you have collected and let your imagination run free. Remember there are no rules in land art!



Create your art – you can make mandalas, spirals, statues, shapes, animals or patterns ... the possibilities are endless!



### ?! Get this!

Land art is meant to only last for a short time, before the forces of nature take it back. No cement or glue is used to make it stay where it is. It is not meant to be permanent.

### Things to consider

- Always be careful about where you get your art supplies, and make sure what you make won't be dangerous for anyone.
- Be careful about wildlife (and insects too) when collecting things from nature, and don't touch anything sharp or pointy.
- Try to use pieces of plants that have already fallen off, unless you have permission to use something that is still growing.
- Also be careful about picking things like rocks and sticks up. They help protect soil from erosion and give animals and insects somewhere to live.

### ?! Get this!

If you have a camera with you, take pictures to record your creations.



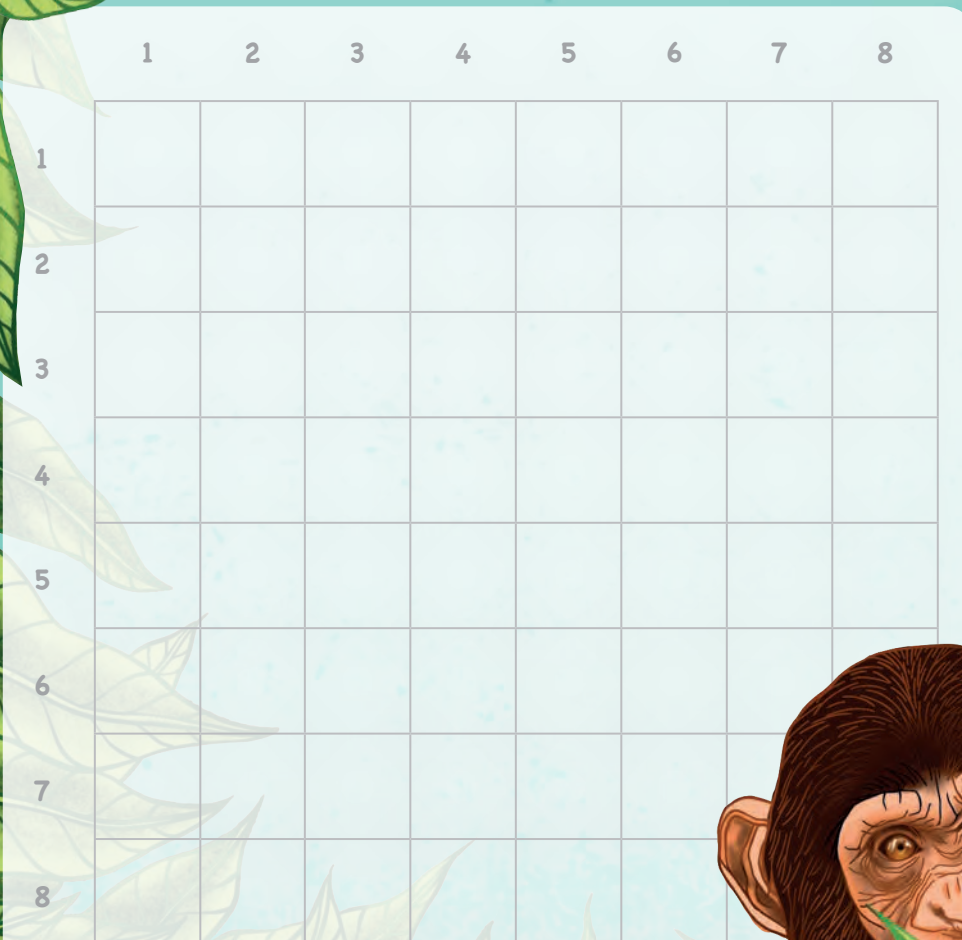
# DRAW LIKE FRIDA



## How to play

Here is a great way to learn how to draw! Use the grid method to help you copy any image, to any size.

Copy the picture of Frida using the blocks as a guide. Once you have the hang of it, choose your favourite picture in this book and copy it onto a piece of paper.



## ! Tip

You can use this technique to copy any image. You can draw a grid in pencil over the original picture and draw another on your drawing paper.

## ! Tip

To make an image bigger, just draw a bigger grid with the same proportions.





# Test yourself

How much did you understand about your digestive system?



Read the article, *Gut Feelings: Unraveling the Secrets of Your Second Brain*, on page 34-37.

Then, answer the following questions from the text.



1. Read the sentences below and write if they are **true** or **false**.

a. Food slides down to your stomach through the oesophagus. \_\_\_\_\_

b. You should only eat green and yellow fruit and veg to keep your gut healthy. \_\_\_\_\_

c. Your gut and brain communicate using the vagus nerve. \_\_\_\_\_

d. Your brain produces neurotransmitters which make you feel full. \_\_\_\_\_

2. Use the words provided to fill in the blanks.

The digestive process starts with your \_\_\_\_\_ smelling food! The \_\_\_\_\_ glands help break down your food before it travels down your \_\_\_\_\_. Then, the food in your \_\_\_\_\_ is broken down into a liquid called \_\_\_\_\_ before it travels to your \_\_\_\_\_ and \_\_\_\_\_ intestine.

chyme

salivary

oesophagus

stomach

small

nose

large



Here's a fun new book to read!



## ! Reading Tip

Reading makes you smarter – it's a fact. Be sure to keep up good reading habits:

- Read anything
- Find a topic that excites you
- Read something difficult sometimes
- Ask someone to recommend a book
- Talk about the things you've read – reading is contagious!

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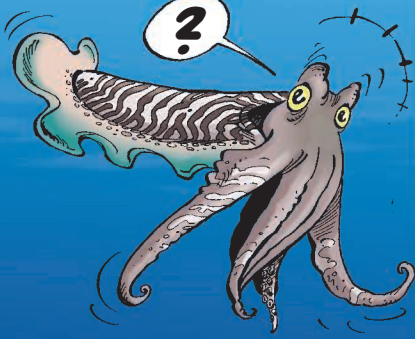


# MARINE ANIMALS

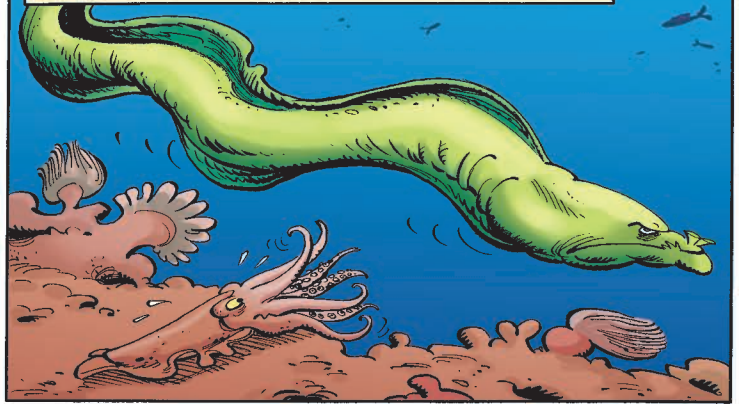
## THE COMIC

### The multi-colored cuttlefish

THE SKIN OF A CUTLEFISH CONTAINS SPECIAL CELLS WHICH ALLOW IT TO CHANGE COLOURS WHEN IT NEEDS TO.



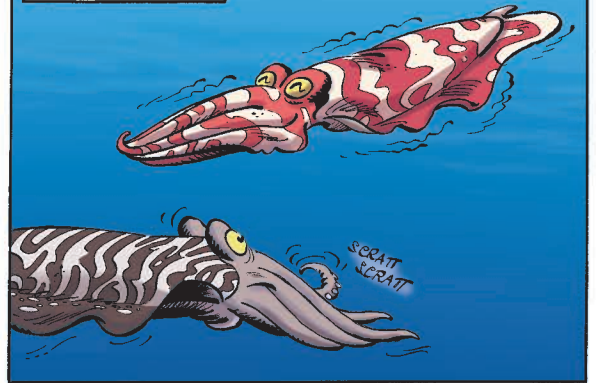
IT'S VERY HANDY, WHEN TRYING TO AVOID PROWLING PREDATORS.



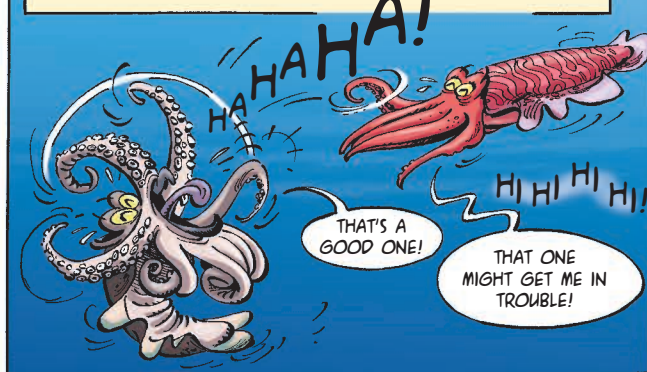
...OR WHEN THEY ARE HUNTING THEIR UNSUSPECTING PREY!



SOMETIMES THEY DISPLAY SPECTACULAR COLOURS AND DESIGNS...

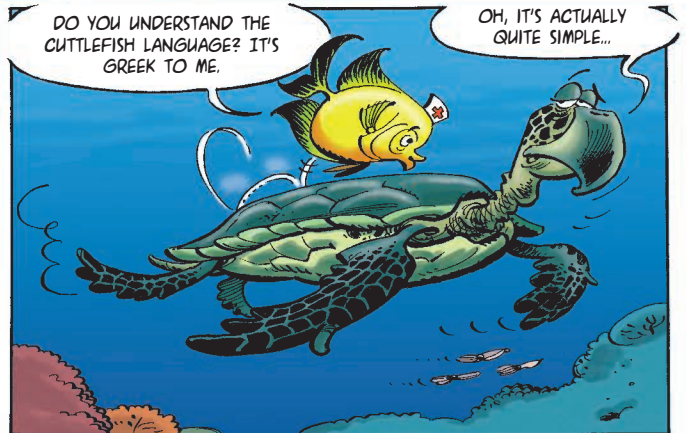


...WHICH MIGHT BE PART OF A TYPE OF VISUAL LANGUAGE SYSTEM, WHICH SCIENTISTS ARE BUSY UNCOVERING.

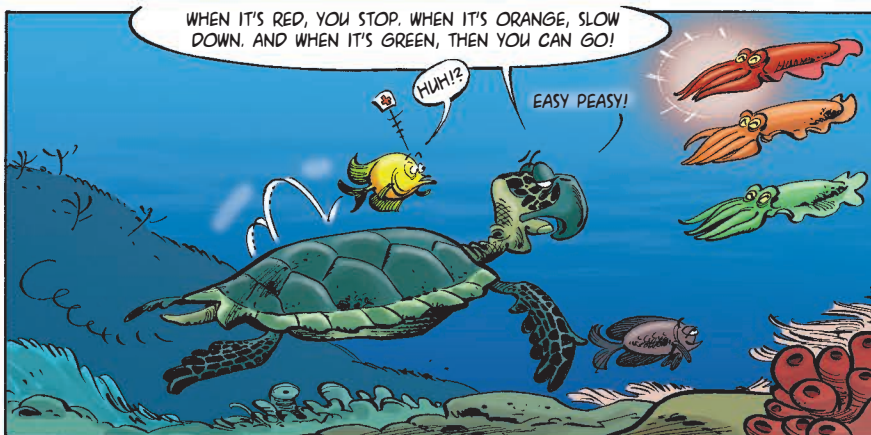


DO YOU UNDERSTAND THE CUTLEFISH LANGUAGE? IT'S GREEK TO ME.

OH, IT'S ACTUALLY QUITE SIMPLE...



WHEN IT'S RED, YOU STOP. WHEN IT'S ORANGE, SLOW DOWN. AND WHEN IT'S GREEN, THEN YOU CAN GO!



### COMMON CUTLEFISH

*Sepia officinalis*



- Size: 40 centimetres (with its tentacles)
- Diet: Carnivore
- Did you know: the cuttlefish has one bone, the calamari has an internal shell that looks like a feather, and the octopus has no skeleton.

Depth : 0 to 150m

LC\*

Distribution



\*LC: Least concern.



# How to unwind



*Feeling like life is a bit like a rollercoaster? Take a deep breath, it's time to unwind and find your chill!*

**Tyler** 16 years old

I'm feeling a bit lost in the whirlwind of school, homework, and activities. It's like I'm constantly racing against the clock, and I can't seem to find a moment to just relax and unwind! I see my friends having fun, but I'm always caught up in something...

Life's pace can be a bit overwhelming sometimes – you're not alone! But, it's important to set out some time just for yourself. Start small by dedicating just 15 minutes a day to doing something you enjoy. Whether it's reading, listening to music, or going for a walk, all of those small moments add up! Taking care of your mental well-being is essential, so know that it's okay to say no sometimes! Also make

sure to tell your friends and family about your feelings. They may be experiencing similar struggles or have creative ways to manage stress. Friends can be an excellent support system, and you might find that you can relax together! Lastly, be mindful of the present. Sometimes, stress comes from thinking too much about the future. So, take a breath, focus on the now, and appreciate the little joys in life!

## Have a question for Candice?

Do you have a burning issue on your mind? Need advice? Send your questions to [supernova@bkpublishing.co.za](mailto:supernova@bkpublishing.co.za) and Candice could give you advice next!



sa

# Homeschooling *and beyond*

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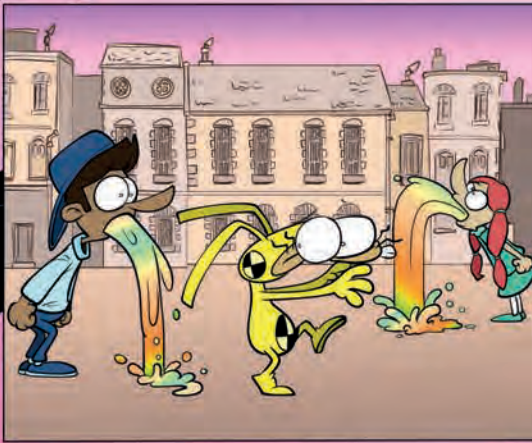


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EVERY YEAR, THE  
STOMACH BUG, OR  
GASTROENTERITIS,  
KILLS BETWEEN  
**1.5 AND 2.5 MILLION**  
PEOPLE IN THE WORLD.

EVERY DAY, ABOUT  
**1300 CHILDREN**  
DIE FROM IT.

IN MOST  
CASES, GASTRO  
IS CAUSED  
BY HIGHLY  
CONTAGIOUS  
VIRUSES...

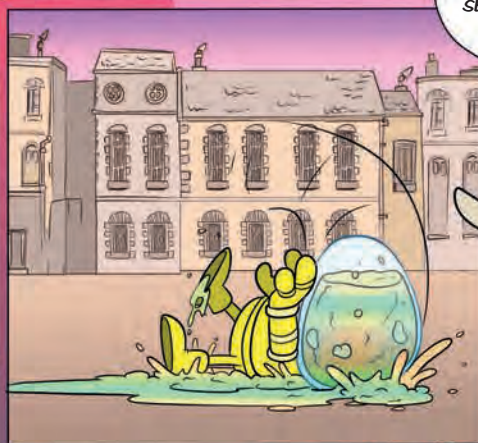
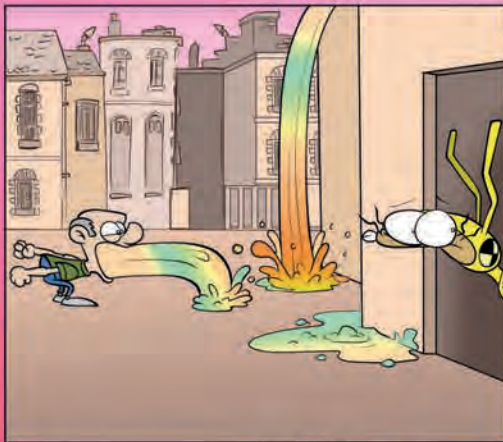
...AS WELL AS BACTERIA  
AND IN RARE CASES,  
PARASITES.

THE BACTERIA AND VIRUSES  
SPREAD THROUGH INFECTED  
FAECES WHICH ARE CONSUMED  
THROUGH THE MOUTH - EITHER  
DIRECTLY BY UNCLEAN HANDS  
OR BY CONTAMINATED WATER  
OR FOOD.

I'VE GOT HAY  
FEVER... IS THAT  
DANGEROUS?

GASTROENTERITIS  
CAUSES TUMMY  
ACHES, DIARRHEA AND  
VOMITING. IN THE  
WORSE CASES, IT CAUSES  
SEVERE DEHYDRATION  
WHICH CAN  
LEAD...

...TO  
DEATH!







# Creature from the Lagoon

