

Heyyyy, Dr Ronx here!!

Wowee, what an honour it is to be guest editor for this issue of Scoop magazine, which is all about my favourite subject in the world: medicine!!

I live and breathe medicine. It incorporates everything from anatomy and the composition of poo (yup, I said it), to understanding what influences our mental health and how to encourage a healthy lifestyle.

This year has been hard for everyone. The Covid-19 pandemic has spotlighted our incredible NHS and all its workers and I feel incredibly privileged to have provided medical care to Covid-19 patients. The national effort continues to be amazing! I want all young people to know that we adults are so proud of how you have managed during this pandemic.

This issue of Scoop is action packed and full of medical and scientific information and facts.

We give thanks to some of the incredible scientists who are helping us edge closer to the tail-end of this pandemic.

I really hope that one day I get to celebrate someone who has read this issue and been inspired to do great things for the medical world.

Knowledge is power!

Big love,

Dr Ronx (they/them)

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OUR COVER ILLUSTRATOR

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The Medicine Issue

Since the beginning of time, people have worked hard to **heal themselves** and those around them. Remedies were originally found in the **natural world** among the flora and fauna and, more recently, humankind has used technology and science to understand illnesses and to find ever more ways to cure disease and improve the health of us all.

During the Covid-19 pandemic we have all become very aware of how vulnerable society is to illnesses, and how incredible the resources of people are – both in the brilliance of medical professionals and the fortitude of us all, as we overcome the immediate problems of the Covid virus.

In this **magnificent medicine issue** of Scoop, we celebrate the amazing **medical discoveries** made by humans, from ancient peoples right up to today's cutting-edge technological advancements. Medicine is crucial to our wellbeing and inside these pages you can see just how much there is to be excited about.



Guest Editor

DR RONX

You may know Dr Ronx from explaining all that goes on in your body on the TV show *Operation Ouch! Unshockable* and passionate, Dr Ronx is also a doctor in the Accident and Emergency department of an East London hospital.

Can you tell us about your work?

I am an emergency medicine doctor at a busy hospital in East London. It's my ten-year anniversary this year and I absolutely love my job. From suturing wounds shut and talking to young people about their mental health, to managing medical emergencies, I am always kept on my toes and no two days are the same. Alongside working as a doctor, I am a presenter on the TV show *Operation Ouch* with Dr Chris and Dr Xand. We explore all things medicine, science and the human body in both serious and fun ways. I also raise money for charity and, this year, I hope to run the London Marathon for Sistah Space. I am involved in my local community, mentoring young people, delivering talks in schools and participating in community activities.

Why do you love what you do?

I get to use my professional and personal experience to inspire, encourage and amplify other people. Being a doctor was my dream from the age of twelve. I realise that I enjoy spending time with patients and helping them make realistic and achievable decisions that promote healthier lifestyles. I really enjoy being part of this country's NHS. I feel really proud, especially during this pandemic.

What made you interested in medicine?

Aside from a general fascination with science and the human body, I remember watching an episode of *ER*, (an American TV series) when I was twelve and being utterly captivated. The episode involved one of the doctors using a new blood clot-busting drug to dissolve a blood clot in a patient's brain and improve her symptoms of stroke. I loved *ER*, from the diversity of characters and seeing female doctors in charge, to the medical procedures and realistic-looking wounds and injuries. I was determined to do absolutely everything that I could to be a doctor.

Please describe yourself when you were ten in three words.

Bookworm, sad, determined.

Favourite part of the hospital?

The paediatric department, of course! Children and young people are the best and the nurses are so much fun.



OPERATION OUCH IS IN THE MIDDLE OF PRODUCTION OF OUR 10TH BIRTHDAY SERIES, WHICH WILL AIR ON CBBC IN THE NEW YEAR.



QUICK FIRE ROUND

Invisibility or the ability to fly?

Ability to fly

Green scrubs or blue scrubs?

Blue scrubs

Favourite word? Coffee

Car journey: audio book or music? Music

Listening to? Britney Spears

When and where in time? In the crowd watching Martin Luther King's 'I have a dream' speech.

Favourite food? Vietnamese

Best advice you've had? Don't be so tough on yourself, Ronx.

Tell us a joke?

Patient: Doctor, Doctor, will I be able to play the piano after the operation?

Doctor: Yes, of course.

Patient: Great, because I can't now!



WEIRD MEDICINE

By HERBIE BRENNAN

In the good old days before even I was born, doctors carried some scary cures in their little black bags. Things like leeches, maggots, and one other really gross treatment I'll bet they never mentioned in your history lessons.

Leeches, as you know, are a type of (mostly) freshwater worm. They first attracted the attention of the medical profession thousands of years ago in Ancient Egypt when the doctors of the day noticed they lived like little vampires by sucking blood.

Next thing you know, leeches were being slapped onto patients in the hope of curing illness. They got the idea from watching hippopotami scratch themselves.

Leeching was an early example of a more general practice known as bloodletting. This was based on a popular medical theory that sickness or health depended on the balance of what were called 'humours'. Four of these humours were believed to exist in your body: blood, yellow bile, black bile and phlegm.

If your doctor decided you had, say, too much black bile, he would cut you in a particular area to let some of it out ... along with copious quantities of blood. He knew he had bled you enough when you fainted. Sometimes he cured you to death.

While bloodletting was used to treat just about every illness at one time or another, the use of maggots was largely confined to treating open

wounds. They had the handy ability to eat dead flesh while leaving healthy tissue untouched.

Maggots are the larvae of flies, little white wriggly things that are generally viewed with revulsion. But that didn't stop Native American healers or Australian Aboriginal doctors using them in times gone by. They were popular more recently as well, particularly among Army doctors in times of war. There are reports of their use in both world wars and, in a survey, one in ten American Army doctors admitted using them as recently as 2013.

But perhaps the oddest treatment ever used by the medical profession was something called the Perpetual Pill – a pellet of metallic antimony guaranteed to relieve constipation. The pill was popular with patients in the Middle Ages because you could use it on a do-it-yourself basis and thus save yourself a doctor's fee. Administration was easy. You simply swallowed the pill, washed down with a drink of water, and waited patiently for it to work. When it eventually reached your bowel, it caused such irritation that your body worked particularly hard to expel it ... along with anything else stuck in there.

But that wasn't the best of it. The Perpetual Pill was reusable. You searched it out of the chamber pot, wiped it on your sleeve, then popped it on the mantelpiece to be used again when needed. It became a tradition that you should leave your Perpetual Pill to your descendants when you made your will. Some pills passed through several family generations.

Weird or what?

SIX HEROES OF MEDICINE

Words by Alice Wroe

TODAY WE KNOW THAT PEOPLE OF ALL GENDERS CAN BE DOCTORS, NURSES OR MEDICAL PROFESSIONALS, BUT FOR A LONG TIME WOMEN WERE TOLD THERE WAS NO PLACE FOR THEM IN MEDICINE. HERE ARE SOME HEROES WHO DID NOT ACCEPT THAT!

THE EDINBURGH SEVEN (1869) FOUGHT THEIR WAY INTO THE HERSTORY BOOKS AS THE FIRST WOMEN TO STUDY MEDICINE IN THE UK. MANY OF THE MALE STUDENTS AND TEACHERS AT THE UNIVERSITY OF EDINBURGH WERE ANGRY THAT WOMEN WERE ALLOWED IN. RIOTS BROKE OUT WHEN THE SEVEN WOMEN SAT THEIR EXAMS, STUDENTS BLOCKED THEIR WAY AND SLUNG MUD AT THEM. THE EDINBURGH SEVEN SAT THEIR EXAMS AND GOT EXCELLENT RESULTS, BUT EVEN AFTER ALL THEIR HARD WORK THE UNIVERSITY DENIED THEIR DEGREES - WHICH WERE FINALLY AWARDED 150 YEARS LATER, LONG AFTER THE WOMEN WERE DEAD.



METRODORA (AROUND 200-400 BC) IS REGARDED AS THE FIRST FEMALE MEDICAL WRITER, WRITING THOUSANDS OF YEARS AGO IN ANCIENT GREECE. HER WORK FOCUSED ON THE FEMALE BODY. THIS MIGHT NOT SEEM LIKE A BIG DEAL TODAY, BUT UNTIL VERY RECENTLY, MOST MEDICAL STUDIES FOCUSED ON THE MALE BODY, WHICH MEANT DOCTORS FOUND IT HARDER TO TREAT WOMEN AND GIRLS. THE FACT THAT ALL THAT TIME AGO METRODORA WAS INSPIRING MEDICS TO CONSIDER HEALTH FROM A WOMAN'S PERSPECTIVE IS GROUNDBREAKING!



ALICE BALL (1892-1916) IN ALICE'S LIFETIME, A SKIN DISEASE CALLED LEPROSY WAS RUINING THE LIVES OF MANY PEOPLE. IT WAS ALICE BALL, A YOUNG CHEMIST, WHO FOUND A WAY TO TREAT IT. HOWEVER, AN OLDER, MORE ESTABLISHED MALE PROFESSOR UNDERMINED ALICE'S AMAZING WORK: HE TOOK HER IDEAS AND NAMED THE TREATMENT AFTER HIMSELF! IT WASN'T UNTIL THE 1970S THAT ALICE'S EFFORTS WERE RECOGNISED AND THE TREATMENT WAS RENAMED 'THE BALL METHOD' AFTER HER.

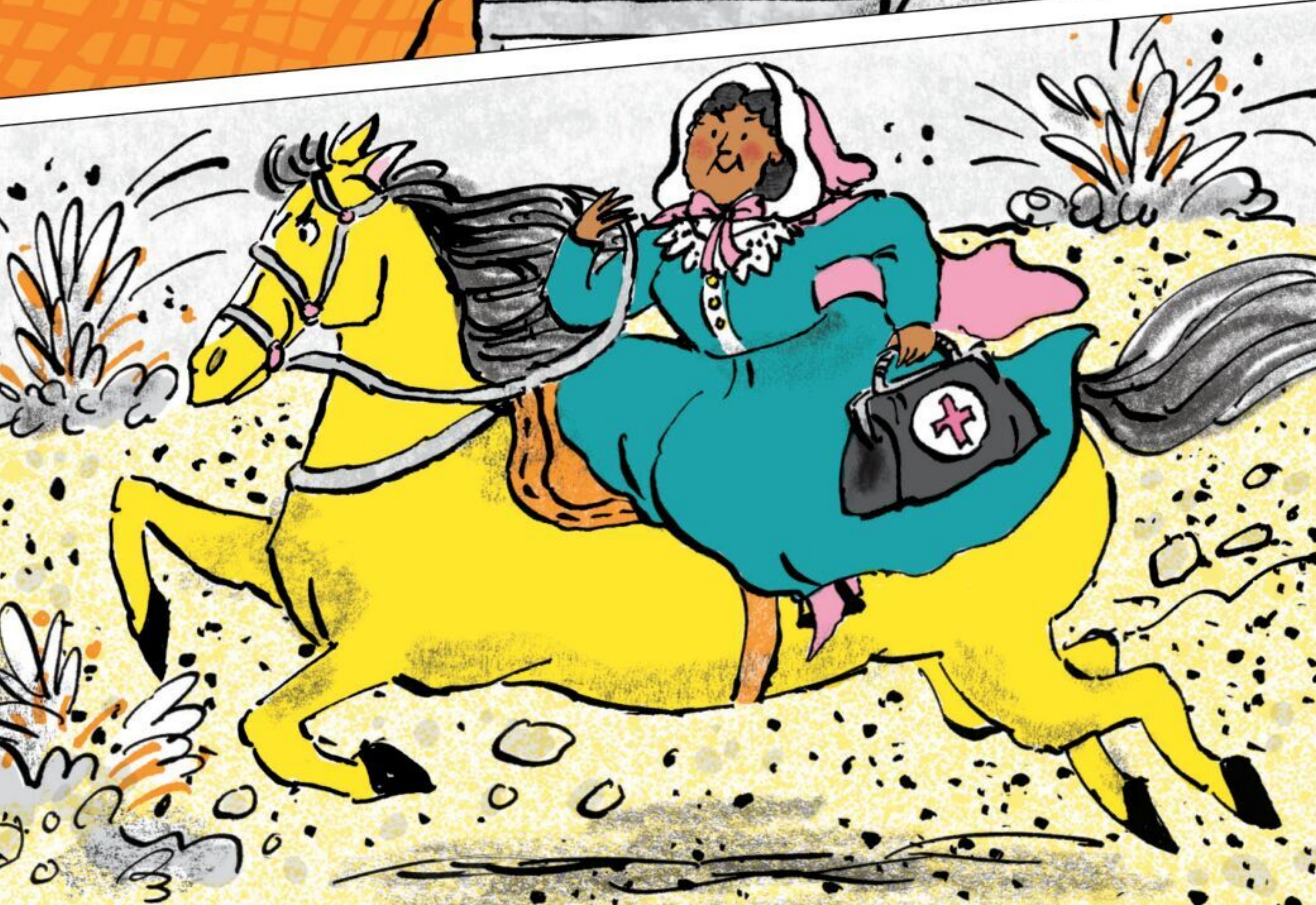
USAN LA FLESCHÉ PICOTTE (1865-1915)

DEDICATED HER LIFE TO SERVING HER NATIVE AMERICAN TRIBE THROUGH HEALTHCARE. AS THE FIRST NATIVE AMERICAN FEMALE DOCTOR, SHE TRAVELLED ON FOOT AND ON HORSEBACK ACROSS THE HUGE STRETCH OF LAND WHERE HER TRIBE LIVED, MAKING HOUSE CALLS. SHE WAS A COMMUNITY LEADER, FIGHTING FOR NATIVE AMERICANS' RIGHT TO LAND AS WELL AS HEALTHCARE. SUSAN FULFILLED HER LIFELONG AMBITION OF BUILDING A HOSPITAL ON THE OMAHA RESERVATION.



RUKHMABAI RAUT (1864-1965) WAS EXCEPTIONALLY BRAVE. AS A VERY YOUNG WOMAN IN COLONIAL INDIA SHE PETITIONED THE COURTS FOR A DIVORCE, ARGUING THAT SHE WAS A CHILD AND WAS THEREFORE MARRIED AGAINST HER WILL. WITH THE SUPPORT OF QUEEN VICTORIA SHE WON AND WAS FREE TO BUILD AN INCREDIBLE LIFE INDEPENDENTLY - WHICH SHE DID! SHE WENT ON TO STUDY MEDICINE AND BECAME ONE OF INDIA'S FIRST FEMALE DOCTORS.

MARY SEACOLE (1805-1881) AT A TIME WHEN VERY FEW WOMEN TRAVELLED, MARY'S PASSION FOR CARING FOR THE SICK TOOK HER ALL AROUND THE WORLD. SHE DEVELOPED HER NURSING SKILLS AS A YOUNG GIRL IN JAMAICA, WATCHING HER MOTHER TREAT WOUNDED SOLDIERS. MARY FOLLOWED IN HER MUM'S FOOTSTEPS AND TRAVELLED IN A BOAT STASHED WITH MEDICAL SUPPLIES TO CRIMEA, WHERE A WAR HAD BROKEN OUT. SHE NURSED WITH FIERCE BRAVERY, EVEN RIDING A HORSE INTO THE BATTLEFIELD TO TREAT WOUNDED SOLDIERS, RISKING HER OWN LIFE TO SAVE THE LIVES OF OTHERS.





THE COVID CURE

By TOM WHIPPLE

We will never really know how many people are currently alive who wouldn't be if it wasn't for Katalin Kariko. We do know that however many thousands it already is, the number will be many times that next year.

And, in the years to come, that number will be multiplied again, as the applications spread for the technology she pioneered. That technology is currently being injected into many of your parents' arms to protect them from coronavirus.

Forty years ago, Katalin Kariko fled her native country of Hungary with her family, carrying just two things of value: a thousand dollars hidden in a teddy bear, and an idea.

Her idea was this: could we interfere with the messages your body sends to instruct its cells to make proteins? Proteins are the molecules that do so many of the jobs that keep you alive and healthy. If we could, she argued, then we could hack these messages to instruct our cells to cure disease.

You have probably heard of DNA. DNA is the code that your body uses to make you you. It is like a library of instructions, different in every person, telling their body to give them blue eyes or black hair or brown skin. It is part of what makes you a good runner – or makes you think broccoli is disgusting.

But the thing about DNA is that it just sits there. A library is pointless unless someone can see the books, and the same is true of DNA.

This is where Katalin's idea comes in. To send the instructions from the DNA, another chemical, called RNA, acts as the messenger. This RNA reads the message in the DNA, and carries a copy of it to the protein factories in the cells.

What, though, if we could intercept the message and change it to another one? Then, we could create magic. We could trick the body into making whatever we wanted. If, for instance, you had a peanut allergy, then you could trick it into making tiny bits of peanut protein, to slowly train your body to get used to peanuts.

If you had cancer, you could do something even cleverer: you could make a vaccine against it.

Vaccines work by showing the body safe versions of

the thing you want it to attack, and then training it to attack it. It's a bit like showing a submarine silhouettes of enemy ships. Then, when the submarine commander spots the real thing on the horizon, he or she is ready to fire torpedoes.

What if you used RNA to trick the body to make lots and lots of the proteins you find on the outside of cancer cells? The proteins would have no nasty cancer attached. But by churning them out in their millions, you could prime the body's defences to recognise cancer proteins as an enemy, and fire its torpedoes against the real thing, if it ever came along.

This sounds simple, but it was hard. Your body doesn't like having people hacking its messages. It works quite hard, in fact, to prevent you doing it. This is sensible. If it didn't, every little bit of RNA that entered your body – and there's a lot of it around – would start interfering with its normal processes. As Katalin points out, every time you ate spinach your ears would turn green.

But, slowly, painstakingly, she and her colleagues solved the problems and found ways to fool the body. They still hadn't made any treatment that worked, but by December 2019, they thought they were close.

Then, in a city in China that most people hadn't heard of, people started to get ill. Very ill. And, suddenly, a cancer vaccine was not the priority. Getting one for coronavirus was.

At that time, vaccine experts warned it was possible we wouldn't get a working vaccine for coronavirus in time. If we did, they didn't think it would be from a technology never used before – the technology Katalin had spent her career developing.

But in January 2020, she helped make a prototype vaccine anyway. Instead of using RNA to manufacture little bits of cancer, it made little bits of coronavirus.

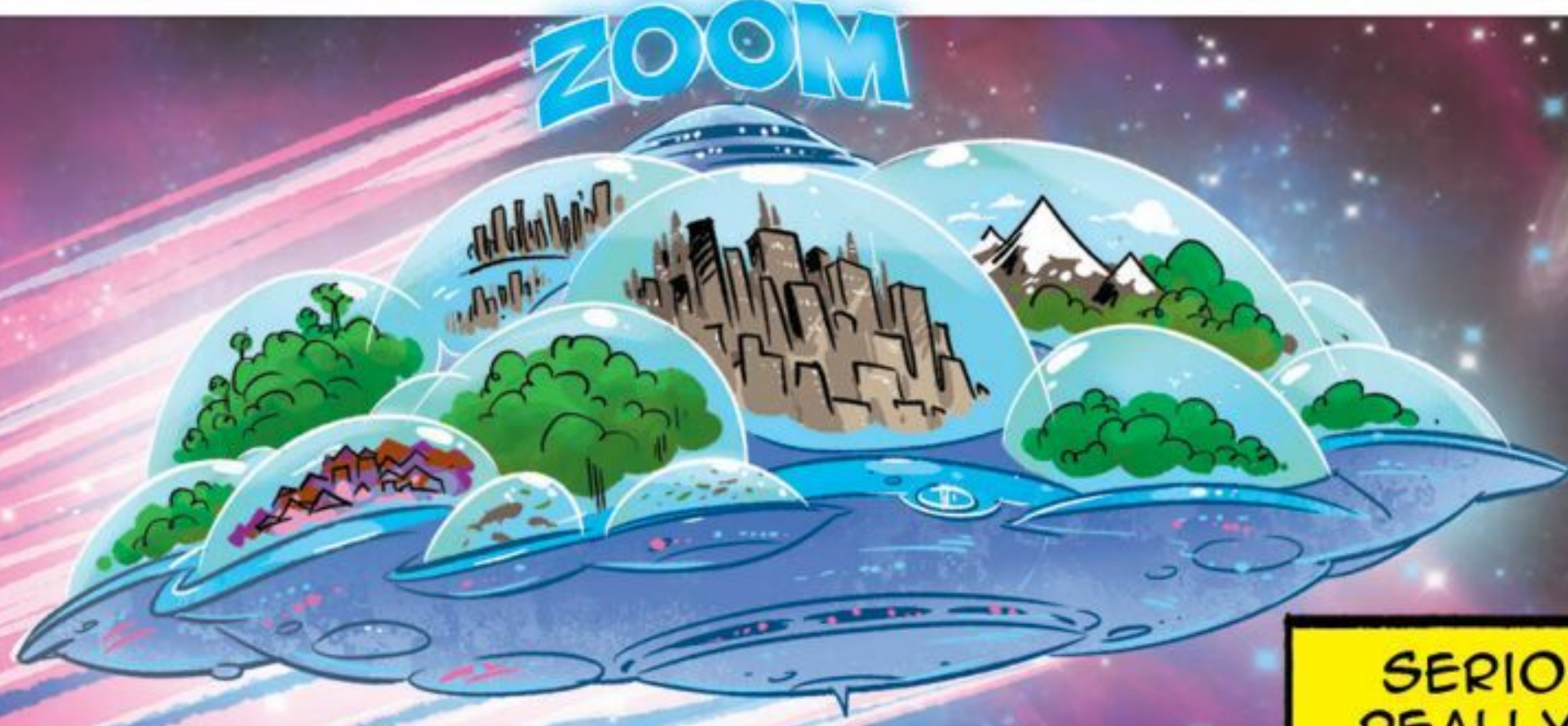
Two months later, this vaccine was put into its first human. A year later it was in millions of humans and it was clear it worked spectacularly well. A year from now, it will be in well over a billion people – the recipients of the Pfizer and Moderna vaccines.

Katalin's forty-year-old dream is what is letting the world return to normal. And, she is now sure, stopping coronavirus is only the start.

ZOOiLLogical

ROBIN ETHERINGTON AND DAVID FOLLETT PROUDLY PRESENT ... EPISODE 2: GERMY NATION!

EARTH HAS BEEN DESTROYED. FORTUNATELY, AT THE 11TH HOUR, AN INTERGALACTIC ALIEN ZOO SWEEPED IN AND RESCUED ONE BILLION HUMANS.



SERIOUSLY. THAT REALLY HAPPENED.

TO BETTER UNDERSTAND THE NEEDS OF THE SURVIVORS, A SPECIAL HUMAN ADVISOR WAS CHOSEN AT RANDOM.

NEITHER OF YOU GUYS HAVE NOSTRILS! DID YOU KNOW THAT?

YES, MOMOKO! LACKEY AND I ARE AWARE OF OUR OWN FACES!

DEEP BREATHS, SIR. DEEEEEEP BREATHS. SHE'S ONLY BEEN WITH US FOR AN HOUR.

RANDOM. SERIOUSLY. THAT ALSO HAPPENED.

MUM CALLS ME MOMOKO. SO DO MY TEACHERS. AND MY FRIENDS. REINVENTION IS COOL, SO FROM NOW ON I'M GOING TO BE ... **MOMO!**

THAT'S ONLY TWO LETTERS LESS THAN--

MOMO!

FOCUS! FOCUS! MOMO, WHAT IS HAPPENING TO THAT FACE!

SNOT.

IT'S NOT WHAT?

PAN, I BELIEVE MOMO IS REFERRING TO THE FLUID LEAKING FROM THE HOLES IN ITS HEAD.

I AM! **SNOT, BOOGERS, LOOGIES, BOOGEYS, GROLLY, BATS IN THE CAVE, NASAL WASTE, MUCUS** - I COULD GO ON!

PLEASE, PLEASE DON'T. WHAT IS ITS PURPOSE?

THAT IS A MYSTERY AS OLD AS TIME. **NO ONE KNOWS.** BUT I HAVE A SWEET THEORY. LISTEN UP ... OH!

YOU DON'T HAVE EARS EITHER!



RUNNY NOSES NEED TO BE WIPED. HOW DO WE DO THAT?

WITH YOUR TONGUE?

WITH A FRIEND'S TONGUE?



NO. WITH A **TISSUE!** LIKE THIS ONE!

OOOOOOOH!



SO YOU CATCH THESE CREATURES AND TRAIN THEM TO LICK YOUR FACE!

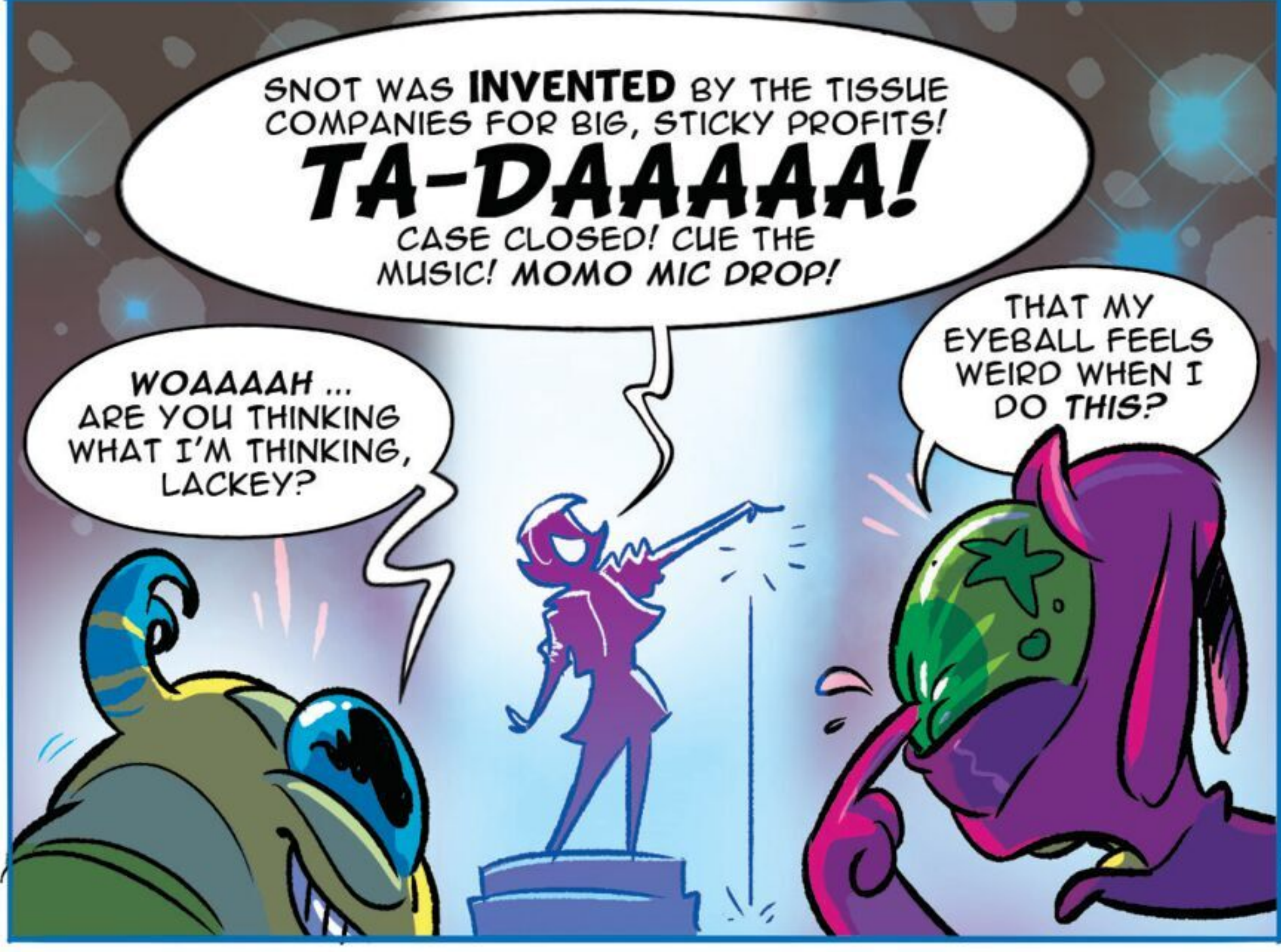
THAT WOULD BE **SO** COOL! I WANT TO CHANGE THE TRUTH TO **THAT!**

WHERE DO THEY REALLY COME FROM?



WE **BUY** THEM. PEOPLE WHO MAKE TISSUES MAKE **CRAZY** MONEY, WHICH BRINGS ME BACK TO MY THEORY...

MONEY?



SNOT WAS **INVENTED** BY THE TISSUE COMPANIES FOR BIG, STICKY PROFITS!
TA-DAAAAA!
CASE CLOSED! CUE THE MUSIC! MOMO MIC DROP!

WOAAAAH ... ARE YOU THINKING WHAT I'M THINKING, LACKEY?

THAT MY EYEBALL FEELS WEIRD WHEN I DO THIS?



IT'S TIME TO INTRODUCE TISSUES TO THE **UNIVERSE!** MOMO, WE NEED A SLOGAN. LACKEY, BRING ME LEAKY FACE SAMPLES! **LOTS AND LOTS!!**

HOW ABOUT ... 'MAKE YOUR TISSUE DANCE WITH A LITTLE **BOOGIE!**'

SIGH ... WE WERE DEFINITELY **NOT** THINKING THE SAME THING ...

ATCHOO!
SNEEZE!
COUGH!

MORE INTERGALACTIC ACTION NEXT ISSUE!

THE WOMEN OF ENDELL STREET

By JOSETTE REEVES

Before the First World War, female doctors in Britain had limited opportunities. Many medical schools wouldn't even let women in, and those women who had qualified as doctors were not allowed to treat men. But as the battles began on the war front, extraordinary changes were needed at home.

The road to Endell Street

On the outbreak of war in 1914, doctors Louisa Garrett Anderson and Flora Murray travelled to France to establish two hospitals for wounded soldiers – one of them in a brand new hotel in Paris. Impressed by their efforts, the British War Office asked them to return to London to set up a military

hospital on home turf. Louisa and Flora jumped at the chance.

The government gave them use of a former Victorian workhouse in Endell Street, Covent Garden. It took months to get the abandoned and filthy building ready for the first patients, but in May 1915 the doors of the new hospital swung open. By this time around 180 staff members had been recruited, including doctors, nurses and orderlies. Almost all were women.

Hospital life

Endell Street was close to the railway stations, where ambulance trains carrying wounded soldiers from the front arrived with grim regularity. Sometimes



eighty men were transferred to the hospital at once, usually in the middle of the night, requiring urgent treatment for broken bones, head wounds and other terrible injuries.

Flora was an anaesthetist and the doctor-in-charge, while Louisa was the chief surgeon. Over the course of the war, the Endell Street surgeons carried out around twenty operations every day. Many patients had to undergo amputations, and the women made and fitted them with prosthetic limbs.

The hospital also had a library of 5,000 books and there was even an Amusements Department, which arranged various events to keep patients happy and occupied, from sports days to performances by famous actors.

served time in prison herself in 1912 for window smashing.

Active suffrage campaigning was put on hold during the war but the Endell Street women certainly didn't give up on the feminist cause. Many people thought a female-led hospital could never work – the women saw it as their mission to prove that it could.

By the time the hospital closed in late 1919, the women had treated 26,000 people and received much praise from patients and the public. As well as soldiers, they cared for those affected by the flu pandemic that swept around the world at the end of the war. Several staff members lost their own lives to the flu.

PATIENTS HAD TO UNDERGO AMPUTATIONS, AND THE WOMEN MADE AND FITTED THEM WITH PROSTHETIC LIMBS.

Silencing the doubters

Before the war, along with many of their staff, Louisa and Flora had been involved in the fight for the vote for women. Flora had treated suffragettes who had been force-fed in prison, while Louisa had

Louisa, Flora and their team had definitely proved that they were just as capable at medicine as men. But there was still an awful long way to go before women could enjoy greater opportunities in the medical profession.

PHOTO: The Staff of the Military Hospital Endell St, August 1916 @ AA Images / Alamy Stock Photo



ONE HELA PROBLEM

Henrietta Lacks

BY KEN WILSON-MAX

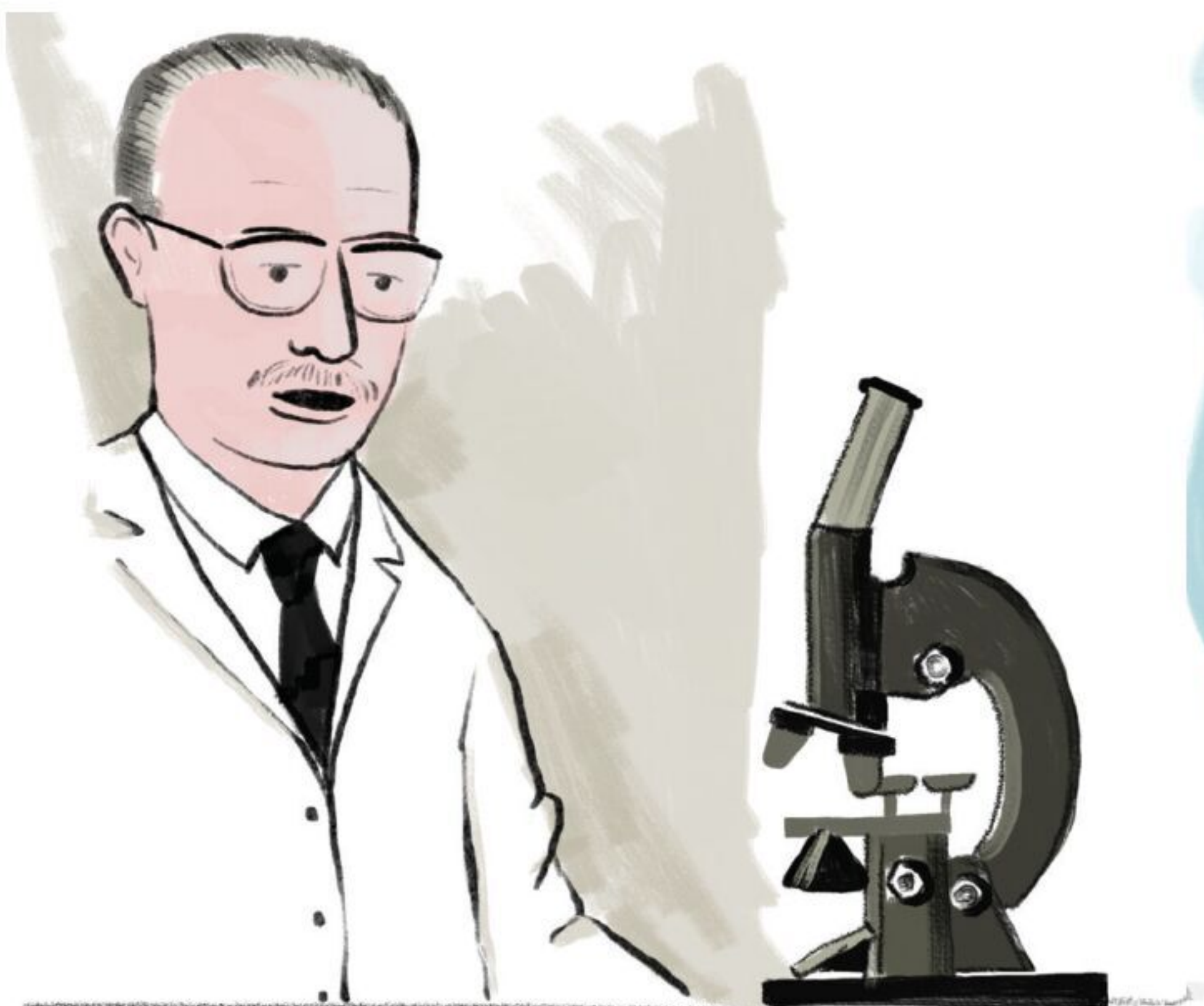


HER NAME WAS LORETTA PLEASANT, BUT EVERYONE CALLED HER HENRIETTA, OR HENNY. AFTER SHE MARRIED AT 21, SHE BECAME HENRIETTA LACKS.

HENRIETTA LOVED TO COOK - SPAGHETTI WAS A FAVOURITE - AND SHE LOVED TO DANCE, OFTEN WITH ONE OF HER FIVE CHILDREN IN HER ARMS.



10 YEARS LATER, SHE WENT TO A HOSPITAL AFTER FEELING A 'KNOT' IN HER STOMACH. IT TURNED OUT BE CANCER. BEFORE SHE DIED, SOME OF HER TUMOR CELLS WERE TAKEN TO BE ANALYSED (A BIOPSY) AND THAT IS WHEN HER IMMORTAL STORY BEGAN ...

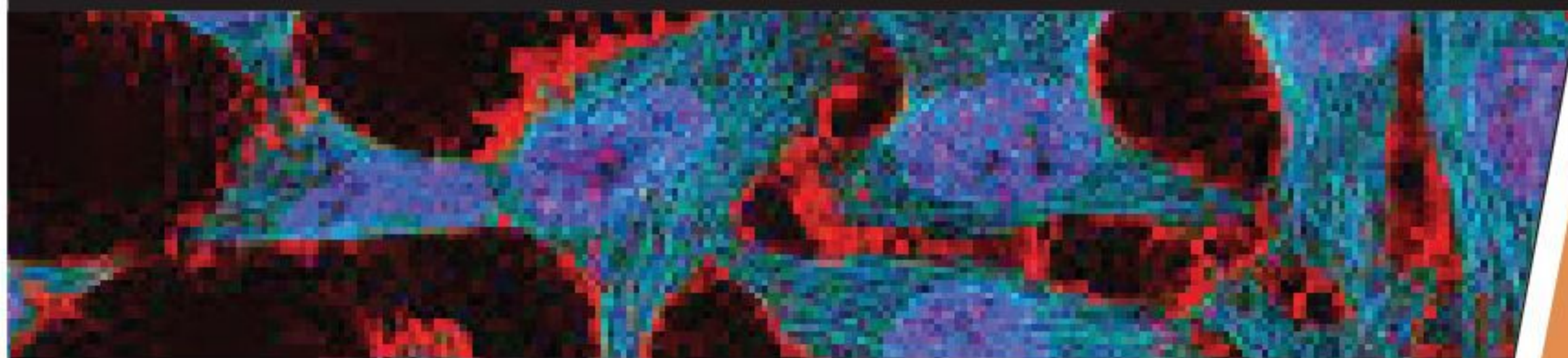


SCIENTISTS HAD BEEN TRYING TO KEEP HUMAN CELLS ALIVE IN A LAB FOR DECADES. HENRIETTA'S CANCER TUMOR CELLS WERE STUDIED BY DR OTTO GEY AND HE SOON REALISED SOMETHING REMARKABLE ABOUT THEM - THEY WEREN'T DYING!



AT THE TIME, SEGREGATION LAWS MEANT A BIG DIFFERENCE IN HOW WHITE AND NON-WHITE PEOPLE LIVED. MANY HOSPITALS WOULD NOT TREAT BLACK PEOPLE SO HENRIETTA WENT TO A HOSPITAL 35 MILES AWAY FROM HER HOME. SHE HAD TO GO IN THROUGH A DIFFERENT ENTRANCE.

HELA CELLS + IMMORTALITY



HENRIETTA'S CELLS MULTIPLIED EVERY TWENTY-FOUR HOURS, AND THEY NEVER STOPPED. THEY BECAME THE FIRST IMMORTAL HUMAN CELLS EVER GROWN IN A LABORATORY.

SOON, THE HELA CELLS WERE BEING SHIPPED AROUND THE WORLD AND MAKING A DIFFERENCE TO MEDICAL SCIENCE. THEY HAVE LIVED TWICE AS LONG AS HENRIETTA LACKS AND HAVE BEEN THE SUBJECT OF MORE THAN 74,000 STUDIES ON CELL BIOLOGY, VACCINES (LIKE COVID-19), IN VITRO FERTILIZATION AND CANCER.

THE HELA DILEMMA

THE HELA CELLS ARE WORTH BILLIONS OF DOLLARS AND HAVE SAVED COUNTLESS LIVES, BUT HENRIETTA LACKS' FAMILY WERE NOT TOLD ABOUT ANY OF THIS.

SHOULD A HOSPITAL BE ALLOWED TO REMOVE CELLS WITHOUT ASKING?

SHOULD HER FAMILY BENEFIT FROM THE COMMERCIAL USE OF THE HELA CELLS?

IS IT FAIR THAT A PERSON WITH VERY FEW RIGHTS IN A SEGREGATED COUNTRY WHO TURNED OUT TO BE A MEDICAL SAVIOUR STILL RECEIVES NOTHING?

WHAT DO YOU THINK?

WHAT ARE MICROBES?

Microbes are tiny life forms that you can only see with a microscope. They come in millions of shapes and sizes and they are **EVERYWHERE**. Every single habitat no matter how cold or hot or inhospitable has microbes.

These are the main categories of microbes that scientists have discovered:

Bacteria

Bacteria are single-celled organisms that are neither plants nor animals. They can be found everywhere from glaciers to the depths of the ocean to the searing hot desert. Some bacteria are harmful, but most are useful and support many forms of life.

There are 40 million bacterial cells in one gram of soil!

Archaea

Archaea look similar to bacteria, but behave very differently. They can survive extreme environments like volcanoes or toxic waste dumps. They are direct descendants of the first organisms on the planet.

'Archaea' is a Greek word meaning 'Ancient things'

Some fungi are used for killing harmful bacteria, and are a key ingredient in some antibiotics.

Fungi

Fungi are made of bigger cells than those of bacteria. Mushrooms, yeasts and moulds are types of fungi. They usually like areas that are warm and damp. They feed off decaying matter and are great at decomposing things.

Viruses

Viruses are the tiniest of microbes. These minuscule particles are not alive. They are 'inanimate complex organic matter'. They have no form of energy and cannot replicate or evolve. They have to hijack other cells in order to reproduce, so are often harmful to humans.

Virus means 'slimy liquid' in Latin.

Sigh.

Microscopic Animals

Microscopic animals are also considered microbes. They have different types of cells just like us. We have lots of microscopic animals on our bodies that we don't even know about.

My name is Demodex and I live on your face!

Protists

Protists are a mixed group of organisms that don't fit into any of the other categories. They have various qualities and serve different purposes – some of which are useful to us and others that are harmful.

This is a PROTIST group

THINK YOU CAN CATEGORISE US?



HOW RAINFORESTS MAKE YOU FEEL BETTER

By J. D. SAVAGE

Did you know that lots of our medicines come from the rainforests? Read on to find out more ...

It sounds like a simple enough task. Nothing to be afraid of. You've been asked to grab some sunscreen from the medicine cabinet, that's all. But it's risky to swing open that cabinet's mirrored doors. If you do, any of several million species might swarm out. Monkeys, giant spiders, powerful snakes, jaguars, eagles. There's enough space in there to contain all these creatures – and many more. It's 6,000,000 km² deep!

Could such a cabinet exist? Well, some people do call the Amazon rainforest 'the world's largest medicine cabinet'. About 150,000 species of plants live there, too, and they're a rich source of medical drugs. That's what makes rainforests great storehouses (or 'medicine cabinets') for today's medicines.

A quarter of our medicines' ingredients come from rainforest plants. That includes more than two-thirds of all our cancer-fighting medicines. Madagascar's periwinkle plant gave us two important ones. Then there's quinine, the first drug to treat malaria. We found that in the bark of the Red Cinchona, a rare rainforest tree that's saved millions of human lives. These are just three plants of many – and who knows what others we've yet to find? Because rainforests are also storehouses of medicines for the future!

Any number of lifesaving new cures might be awaiting discovery in rainforests. We just need to unravel the chemistry of their plants. Any of them could contain a powerful medicine. That, or a building block for new drugs if we tweak them and mix them with other things.



ILLUSTRATION: Astrid Weguelin

So how much progress are we making? So far, we've tested less than 1 per cent of all rainforest species for their powers to cure illness or lessen pain! We'd better get a move on. Humans are very active in removing forests from our planet. Rainforests suffer the most, losing millions of acres each year. People cut down their trees to use the wood, or to clear the land for farming or mining. Sometimes they use fire, burning the forests illegally. And every time a rare species of plant gets destroyed, we may lose a lifesaving new medicine for ever.

There is one shortcut to learning which rainforest plants contain effective medicines. We can ask the people who live there. The tribal natives of the rainforests have known of the healing powers of these plants for centuries. But if they're

unprotected, this destruction of their ever-shrinking homes threatens their survival, too. If their cultures collapse and die out, their knowledge dies with them.

Without help, we may need to test 20,000 plant samples just to find one effective drug. Even when we do, the plant may be rare and grow very slowly. Getting as much medicine as we need from another may mean destroying thousands of trees and damaging their environment. That's not an easy decision to take. Sometimes we can take cells from the plants and make our own medicines – but not always.

Imagine if we could unleash the full medical potential of our rainforests: how many ills we could cure. But no one said it would be easy!

1

C. 11,000 BC:

Hunter-gatherers in Italy are already doing some basic dentistry, making holes in diseased teeth with sharp stones and creating fillings from bitumen (a tar-like material).

2

C. 2600 BC:

Hesi-Re of Ancient Egypt dies. Wooden panels in his tomb indicate he was 'Chief Toother', making him the earliest named dentist.

TEETH

C. 1498:

In China, hairs from the necks of hogs are attached to bone or bamboo handles to create the world's first bristly toothbrushes.

1873: the first mass-produced toothpaste goes on sale. It originally comes in jars, until the development of toothpaste tubes in the 1890s.

5

1944:

Shortly after the D-Day landings in France during the Second World War, mobile dental units arrive at the front to carry out crucial treatment of soldiers' damaged teeth and gums.

6

3

C. 700 BC:

Etruscans (an ancient Italian civilisation) are making dentures (false teeth) from ivory, bone and animal teeth, held together by gold bands.

4

1363 AD:

French surgeon Guy de Chauliac's new medical book includes the first mention of the 'pelican': a beak-shaped tool used until the eighteenth century to yank out teeth.

THE!

By JOSETTE REEVES

Dentistry has come on a long way over thousands of years!

1954:

The first electric toothbrush (the 'Broxodent') is invented by Dr Philippe-Guy Woog of Switzerland. It has to be plugged in while you use it though!

2017:

A robot in China carries out the world's first automated implant surgery. Two artificial teeth – created on a 3D printer – are inserted into a patient's mouth by the robot, with no help from humans.

7

8

CHILDHOOD DISEASES ... 100 YEARS AGO

Words by Jenny Jacoby

If you were born in Britain in 1921 you could expect to live to sixty years old if you were female, and just fifty-six if you were male. Today, the average age people live to in the UK is 79 years for men and 83 for women. One reason people are living so much longer now is the medicine available to treat diseases – and not just diseases that affect

older people. A hundred years ago, children suffered from all sorts of illnesses that you, today, don't need to worry about because we have vaccinations, antibiotics and better general health. Let's take a look at three of the most deadly diseases your ancestors might have endured – and give thanks to modern medicine!

DIPHTHERIA

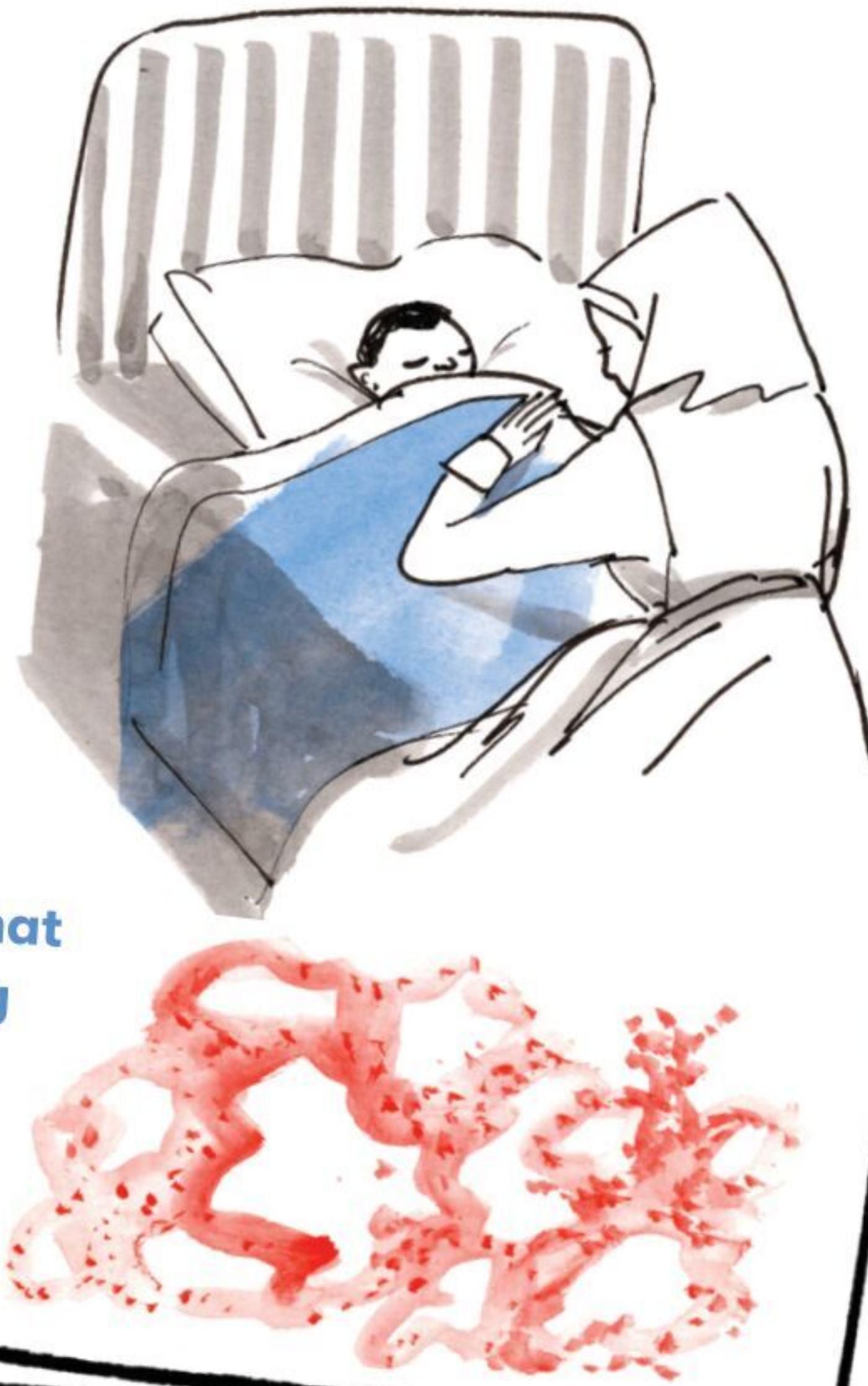
One hundred years ago, this was the most common cause of death for children in Britain aged five to nine. Today, children are vaccinated against diphtheria in the first few weeks of life, with immunity topped up at age three and as a teenager – which is great, because this nasty disease comes on quickly and can be deadly. It starts with a sore throat but when the bacteria get to work, a thick, grey coating can cover the throat, nose or tonsils, making it hard to breathe. In the greatest emergency – when the windpipe is completely blocked – a doctor can try to save a life by cutting straight into the windpipe and inserting a breathing tube. This is called an emergency tracheostomy and it is very dangerous – almost as likely to have killed the patient as leaving them untreated!



PNEUMONIA

This can be easily cured today but a hundred years ago it was the top killer of children aged four and under. Back then, if you had pneumonia you'd be ill in bed for as long as your heart could hold out against the toxic disease, which could be for weeks. Eventually you would either die or have a big fever that would overcome the infection, and you'd recover.

Pneumonia can be caused by all sorts of different infections, and a hundred years ago doctors had no good way of finding out what that was, so they couldn't be sure they were offering the right treatment. They pretty much had to make you as comfortable as possible, cross their fingers and hope for the best!



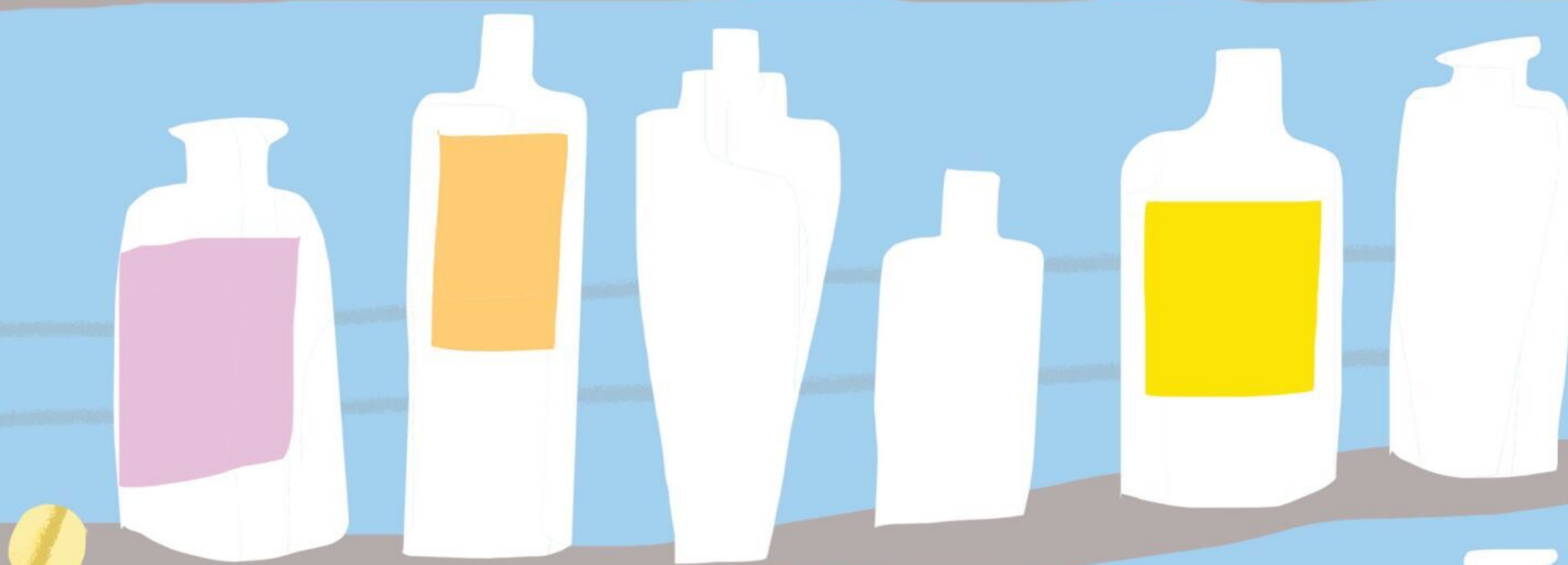
TUBERCULOSIS

Ten- to fourteen-year-olds were more likely to die from tuberculosis (also called TB) than anything else a hundred years ago. This is a contagious disease that could be spread by coughing, but children are vaccinated against it today and it is treatable with antibiotics – which didn't exist a hundred years ago. If you got ill with TB in the days before useful medicine, the disease would slowly destroy your lungs so you'd cough up blood and other horrible stuff, spreading the disease until you eventually died. If you were rich enough you might be sent to a sanatorium in the country – or ideally in Switzerland – where the clean air was thought to help cure you. But coming back to your normal life, any benefit from the sanatorium would disappear.



IN THE PHARMACY

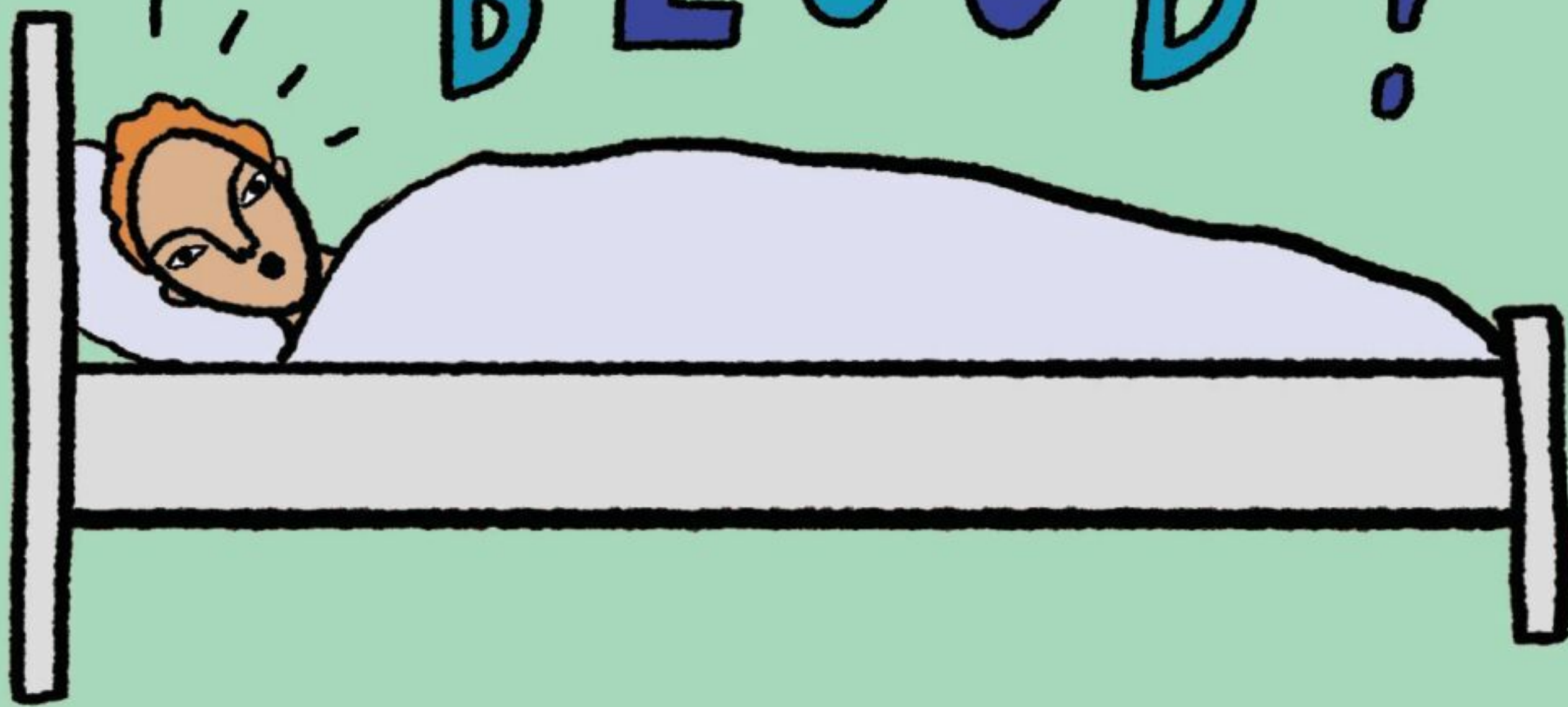
THIS PHARMACY HAS LOTS OF EMPTY BOTTLES THAT NEED FILLING WITH MEDICINE. DRAW AND COLOUR LIQUIDS, OINTMENTS AND PILLS INTO THE BOTTLES SO IT'S FULLY STOCKED FOR THE NEXT CUSTOMER. DON'T FORGET TO LABEL THEM!



GIVE

BLOOD!

This patient needs blood - and FAST!

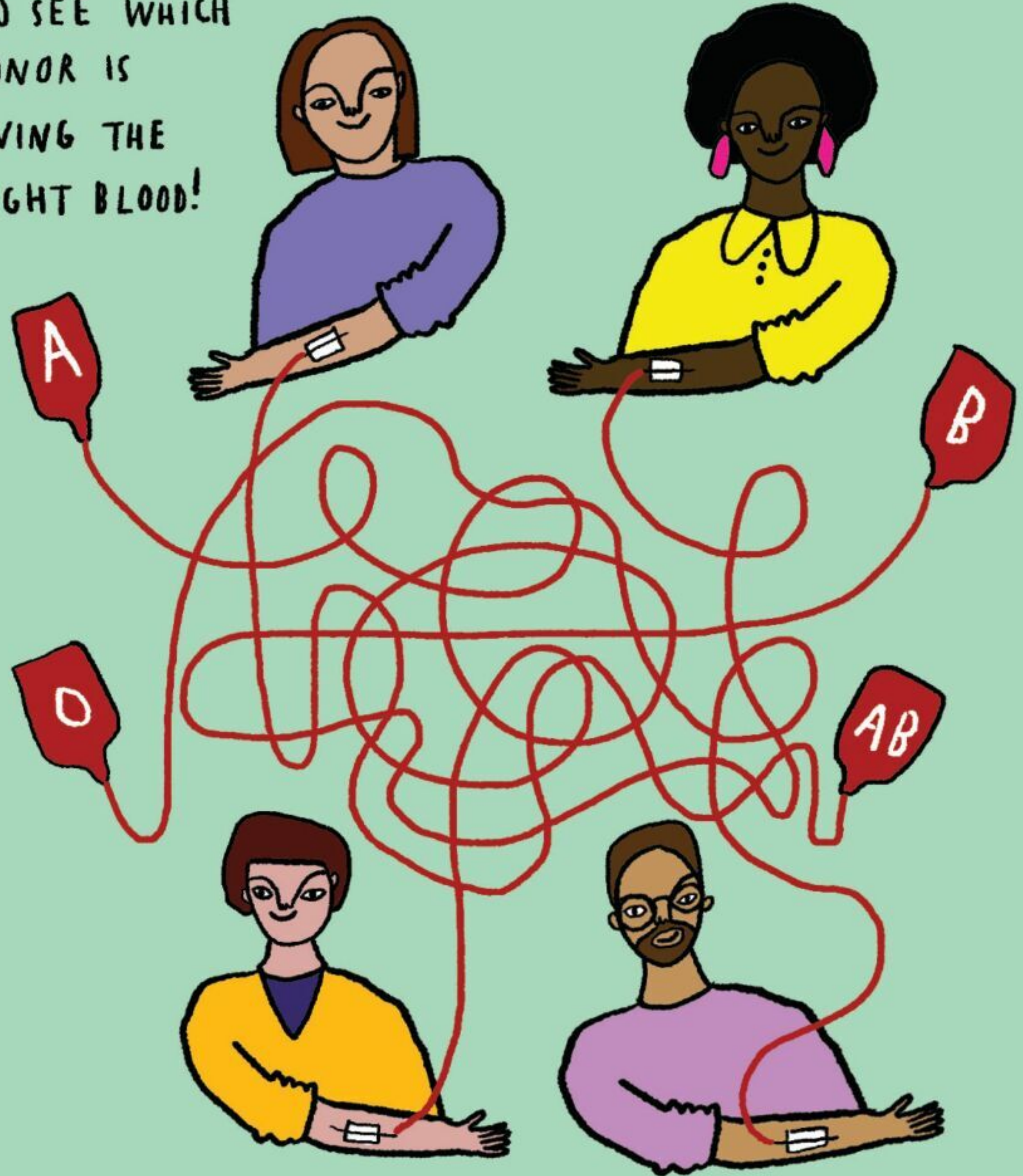


WORK OUT WHICH BLOOD TYPE THEY ARE BY WORKING OUT WHICH LETTER APPEARS MOST IN THIS GRID!

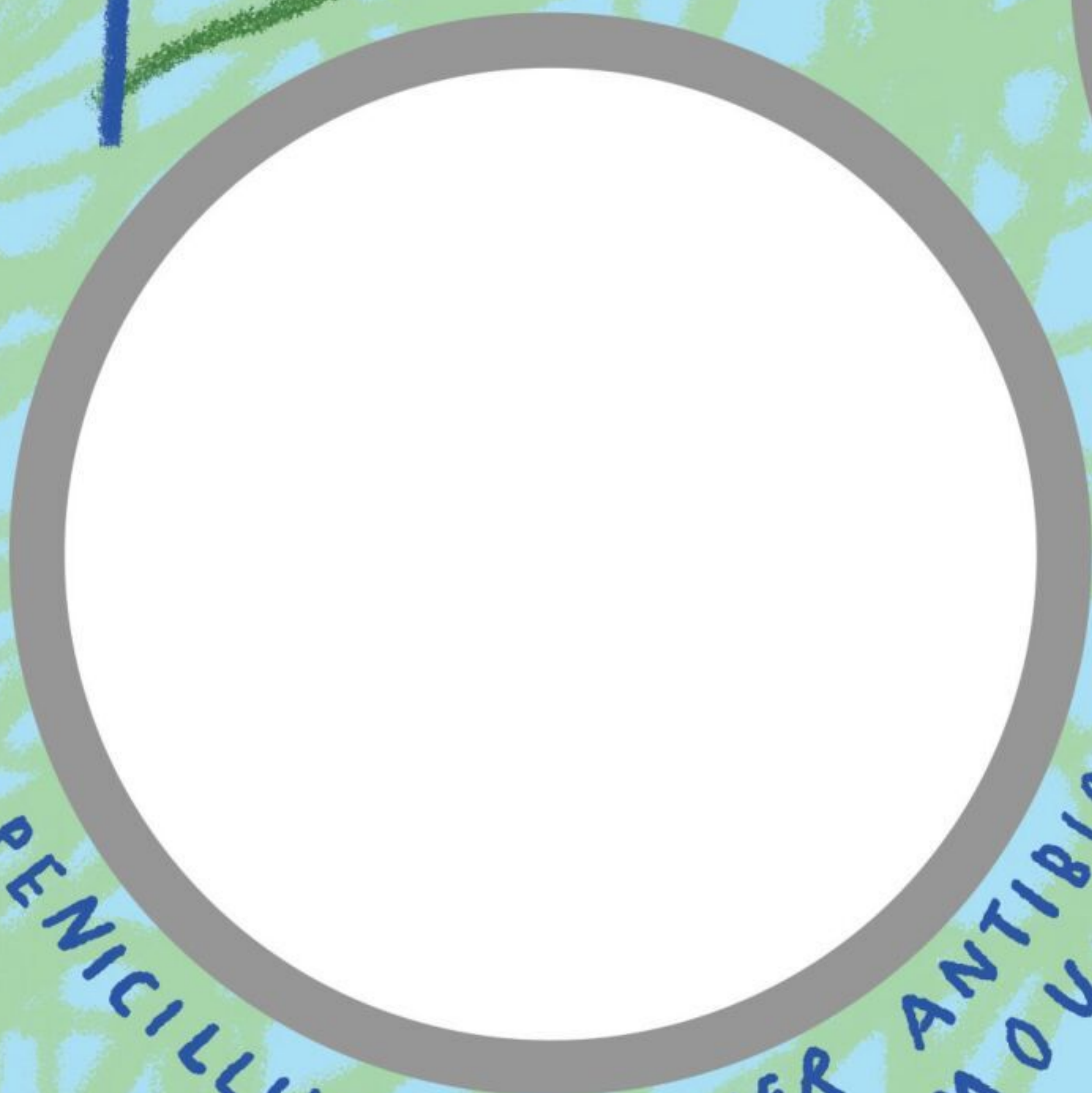
THEN, FIND YOUR WAY THROUGH THE TANGLED TUBES

TO SEE WHICH DONOR IS GIVING THE RIGHT BLOOD!

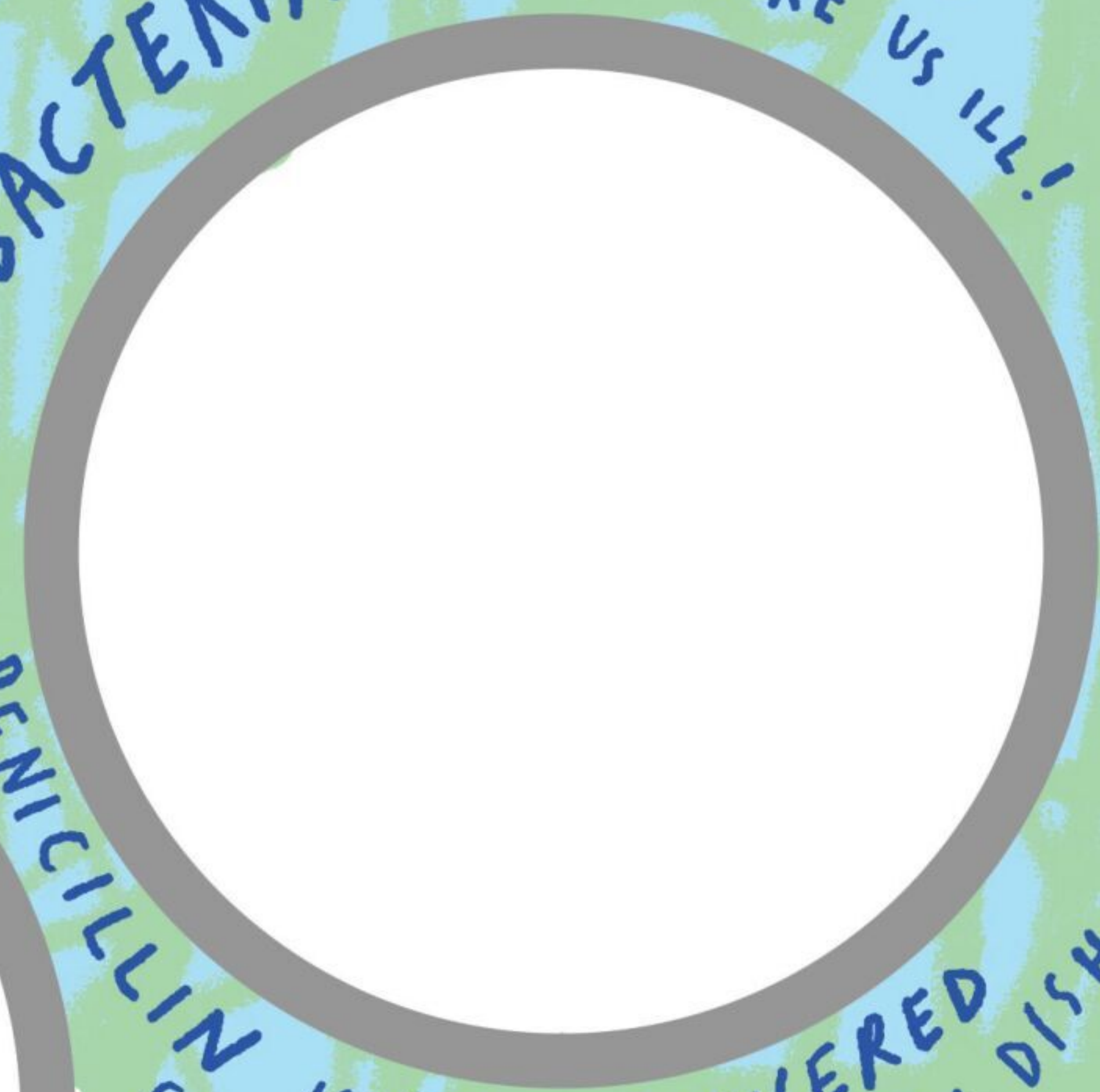
A	O	B	O	A	AB
B	A	AB	AB	A	B
A	AB	O	O	B	AB
O	A	B	A	O	AB
B	AB	AB	B	A	O
O	B	B	A	O	AB
B	AB	B	A	AB	A
O	O	O	B	O	A
B	B	B	AB	AB	A



Beautiful Mould



PENICILLIN AND OTHER ANTIBIOTICS ARE MOULDS THAT DESTROY BACTERIA THAT MAKE US ILL!



PENICILLIN WAS DISCOVERED GROWING IN A PETRI DISH LIKE THESE...
COLOUR IN THESE BLOOMS OF MOULDS IN BEAUTIFUL COLOURS & DRAW YOUR OWN BLOOMS IN THE EMPTY DISHES.



Pill Patterns

CAN YOU FIND THIS PATTERN OF PILLS IN THE BIG SET OF PILLS?



LARGE ANIMALS

By J. D. SAVAGE

Imagine you're a vet who has to perform surgery on a cat. Except it's not a pet cat. It's the biggest of the big cats – a Siberian tiger! So, a three-metre-long tiger is lying there, needing a fang removed. You've pumped enough drugs into it to send it to sleep. Now you have to put your hand inside its massive jaws to start work. All the time you're terrified it'll wake up. If it does, it might leap up and kill you!

Well, some vets do focus on large animals. Vets like my Uncle Roy. He'd fixed tigers, rhinos and bears, my mum said. He got called out to zoos and wildlife parks. Once he had to treat a huge alligator with an upset stomach. If you're not careful, you could end up looking at that problem from the *inside*.

'Oh, he has lots of great stories to tell,' Mum said. It was one of the two reasons I agreed to stay with him and Auntie Ann for a few weeks. The other reason was I had no choice.

I'm Robbie. I live in Glasgow. My mum wanted me to get away from the city for a while over summer. To get some healthy fresh air. Uncle

Roy and Auntie Ann lived in the countryside on Scotland's wild north coast. Roy was still a mobile vet who healed big animals, Mum told me. 'But, these days, he goes around helping cattle, pigs and horses on the local farms.'

I'd thought most of the farms up there were fish farms and wind farms! Anyway, off I went.

Uncle Roy and Auntie Ann were nice, and Roy did have great stories. He told some over dinner. Once he had to pull an entire beach towel out of a python's stomach! But poor guy, I thought. Treating cows must seem so boring after healing creatures like that.

I asked him where he was going tomorrow.

'Er, to an alpaca farm,' he said. 'One needs its teeth trimmed.'

Alpacas? Those super-cute, woolly animals? I love alpacas!

'Can I come?' I asked.

'No,' he said. 'They can spit and kick. It's not safe for kids.'

But I'm not scared of alpacas. So, the next morning, I stowed away in the back of his van.

I hid under some blankets that smelled like sick animals – or animal sick.

It was a long journey and bumpier than driving over giant tortoises. (Uncle Roy had treated giant tortoises, too – but, of course, he'd never driven over any!)

We finally stopped. I waited for a while before sneaking out. I hoped to find myself surrounded by alpacas. But I wasn't in the middle of an alpaca farm. I was in the middle of nowhere! It was a lost, lonely-looking place with spooky mist floating about.

I climbed a grassy hill looking for my uncle. There he was, down the hill, by a dark lake. He was leaning over an animal.

'Robbie,' he said, 'what are you doing here?'

'This isn't an alpaca farm,' I said. 'And that's not an alpaca!'

It looked like a white pony to me.

'This more urgent job came up,' he spluttered. 'Well, now you're here, you may as well help.'

He said he'd been treating the animal for a soft tissue injury. Now he needed a blood sample to check on its health. He had me hold it and calm it while he gave the injection.

Weirdly, it had water weeds stuck in its mane – and was cold to touch. But it seemed to like me. When Uncle Roy had finished, it nudged me. They say that's how ponies kiss.

'I could sit on its back,' I said, getting ready to mount.

Uncle Roy pulled me back so sharply he could have bruised me. 'No! It's not safe.'

As he hurried me back uphill, I turned to give the pony a wave. Just in time to see it dive deep into the lake.

'Wait!' I said, stumbling back down.

The pony didn't surface.

'It'll drown,' I said.

'It's fine,' my uncle said, catching me up.

'Ponies can't survive underwater,' I said.

But that's a kelpie,' he said. 'A water horse. And if you'd sat on its back, its coat would have turned so sticky you'd have been stuck tight. Then it might have dragged you down into the river with it.'

I followed him back to the van, confused. I'd heard that scary legend, but ...

'Kelpies don't exist,' I said. 'They're mythical creatures.'

'Well, now you know what kind of large animals I really treat nowadays,' he said.

'Mythical ones?' I gasped.

Scotland is full of legends about the mythical creatures that lurk in its wilder spots. But I never knew they needed a vet like normal animals!

He turned sharply. 'But you must never tell anyone.'

I'm not usually lost for words. Some people even call me Gobby Robbie. But I was silent for much of the drive back.

Finally, I spoke. 'But if water horses drown

people, why help them?’

‘Some kelpies may prey on humans,’ he said, ‘but not all. Besides, most people here know not to mount any horse with water weeds in its mane.’ He shrugged. ‘Anyway, tigers prey on people, too, sometimes. But it would be a shame if they disappeared from the world.’

A week later, he returned from a job with a bandaged arm. He told Aunty Ann that a horse bit him.

When we were alone, I asked him what really did it.

‘A loch monster,’ he said.

If you believe the legends, almost every decent-sized loch in Scotland has its own monster.

‘Someone hit it with a boat and injured it,’ he went on. ‘I had to lure it onto an island in the loch.’ He shook his head. ‘I used to think hippos were hard to put to sleep so you could examine them. Well, loch monsters are even harder!’

I pressed him for more details.

‘I was checking it for internal injuries,’ he said. ‘But it started waking up – and took a nip out of my arm.’

Maybe I’d impressed him that time I helped out. Two days later, his arm was still too sore to hold

his equipment properly. He needed help on a job. *My help!*

All he’d say was that we had to heal a sea creature. I dreaded it would be a mythical sea serpent like a stoor worm. Local legends say they’re so huge they can pull whole villages into the sea with their tongue!

He drove us to a damp and chilly white sand beach. Waves turned into clouds of mist as they smashed against the rocks. He led me to an especially big rock in a hidden bay. A small seal with cute, round eyes lay behind it in a banana shape. So *that* was the sea creature!

‘She got banged up against the rocks,’ Uncle Roy said. ‘I’ve been fixing her flipper. She’s picked up an infection, too.’

He showed me how to treat the seal, guiding my hand. When we finished, it dragged its blubbery body back to the water. We walked back across the beach, shells crunching under our feet. Then Uncle Roy grabbed my shoulder. I thought he was pointing to a puffin, flying so fast it looked like a black-and-white football. But no, he was pointing to a woman swimming in the sea below it. She waved to us.

‘Where did she come from?’ I said.

‘You just treated her,’ he said. ‘She’s a selkie. One of the seal folk. They can take on human form whenever they wish.’

She sank beneath a wave and came back up as the seal. It raced away through the water, using its flippers as paddles.

I'd helped to treat another mythical beast - and hadn't realised it!

Uncle Roy still talked about his days treating large zoo animals over meals. Like the time a rhino charged his van as he drove away after healing it. But when we were alone, he talked about the legendary creatures he treated.

'I treated a wulver for a distemper virus once,' he said.

'A what?' I said.

'It's one of the legendary creatures of the Shetland Isles,' he said. 'A wulver has a wolf's head and a human body. Scary to look at, but they're very friendly. I'd treated grey wolves in wildlife parks for viruses, and I used the same medicine.'

I'm glad to say I never got to meet a wulver. But Uncle Roy did take me out on one more job. It was just before his arm healed - and it was quite a trip. We had to take a ferry to one of the seventy small Orkney Islands.

Uncle Roy wouldn't tell me what legendary creature we'd be treating. He kept that a surprise until the last minute.

'But it's completely tame,' he said. 'The island folk made friends with it years ago.'

'What's up with it?' I asked.

'It's perfectly well,' he said. 'I just have to give it an annual anti-flu jab. There could be terrible problems if this creature starts sneezing all over the place. It might be more than just snot that shoots out.'

I couldn't believe what I saw when we entered its barn. But it was real. That incredible reptile with its scaly body, its horns, its wings.

Uncle Roy handed me the needle. 'Better wait until your hands stop shaking,' he said.

I must never let anyone read these words. I'll keep this diary well hidden. But I think about that day all the time.

Like yesterday. I was back in Glasgow and we had to take our little terrier Harper to the vet. Well, she's scared of vets and always freaks out a bit there. The vet seemed a little scared of her, too. He tried to calm her as she growled away.

'These little dogs are always the snappiest,' he said.

My mind flashed back to that Orkney island.

You think treating our little dog is nerve-wracking? I thought. You want to try calming a dragon!



THE BOY WHO KEPT Bees



Words by Tessa Strickland

All you could hear was rain, rain, rain. Rain drumming on the slate roof, streaming down the kitchen window, saturating the meadows and the dark woods beyond. Jess waited until her dad had turned away to check his phone, then dropped her half-eaten slice of toast under the table. She heard Amber swallow it in one quick crunch.

'It always rains when we come to Wales,' moaned Felix. 'And there's nothing to do here. Nothing.' He shoved his chair back and stood up. 'I'm going upstairs.'

'Kick a ball about with you and Mike when it clears up,' their dad called after him. 'And tell Mike if he wants something to eat, he'd better be quick about it.'

Jess sighed. She felt Amber rub a wet nose against her legs and leaned down to scratch the dog's head. Now her dad was scrolling through his text messages. 'I might as well be invisible,' she thought. 'Come on, Amber, let's go and see what's new round here.'

Outside, the rain made a different song, babbling along the open drain that ran outside the row of cottages. Once, these had been

the homes of farm labourers on the big estate, but machines did the work these days. Jess trudged up the footpath that led across the meadows to the woods. She liked the dark and the quiet, the way the trees seemed to listen, to sense what she was thinking even when she wasn't quite sure herself.

She clambered over the stile and unclipped Amber's lead. The track had become overgrown since last summer. Amber sprang over the brambles and ducked under a fallen oak branch but Jess had to pick her way more slowly, watching where she put her feet. Wet nettles tickled and pricked her shins – she wished she had put on jeans instead of shorts. She touched the locket her mum had given her and tried not to wish that she was still here. Then she heard a faraway yelp – and another. 'Amber!'

Afterwards, Jess couldn't say how long she ran for or how she found her way to the high brick wall of the kitchen garden or why she tried to climb over it. She could hear Amber barking on the other side and she couldn't see a door or a gate, so it seemed the quickest way – except that she lost her balance when she got to the top and fell straight down the other side into a cucumber frame and smashed



it. The next thing she knew, there was glass everywhere, and a boy with black hair and a dirty face holding Amber back and laughing.

Jess was livid. She could barely breathe but as soon as she could she shouted at the boy. ‘What’s so funny?’ She felt ridiculous, sitting in a heap of shattered glass, so she tried to get up on her feet without cutting her hands.

Once she was upright, the boy’s face changed. ‘You’re hurt.’ He stretched out a hand.

‘I don’t need help!’ she snapped. She leaned her hands on her knees and saw that she was bleeding. There were spikes of glass in her shins, ribbons of blood trickling down her bare legs to her boots. ‘I’m OK.’



‘No, you’re not,’ said the boy. ‘You’d best come with me.’

And that was that. The boy turned his back on her and started walking along a brick path, Amber at his side.

Jess glared at the two of them. What did he think he was doing? And why was Amber being so disloyal? She stomped along behind them, barely paying attention to the garden and its plants. By now, the rain had stopped and the sun had come out. What she did notice was the sound – the garden hummed with the sound of bees.

‘There are lots of bees here!’ she shouted at the boy’s back. He didn’t reply. Ahead of them, she saw two rows of white hives. ‘I hope they don’t sting,’ she shouted. The boy just shrugged.



They came to a small wooden door in the far wall. Now they were in a kind of yard. There were hutches and cages all over the place. Rabbit hutches, bantam hutches, cages with budgerigars and cockatoos and parakeets and other brightly feathered birds.

‘I think that’s where your dog got in,’ said the boy, pointing to a piece of fence where the wire mesh had become loose. ‘She’s very interested in the rabbits! Just a minute ...’ He called in a language that Jess didn’t understand, and she heard a woman calling back from inside the house on the other side of the yard.

In a few moments, the woman appeared. Jess gasped. She was tiny, almost like a bird herself, with dark skin, messy black hair in a falling-down bun and enormous brown eyes. She looked straight into Jess’s eyes and then down at her blood-streaked legs. She frowned and shook her head. Then she held out her hand. Jess took it – she didn’t know how not to – and let herself be led inside.

Now the woman and the boy were talking fast between themselves in their language, and now Jess was being led to a kitchen chair and invited to sit down, and now the woman was opening a cupboard, taking out a jar, opening it, and boiling a pan of water. The boy asked the woman something – *was she his mother?* Jess wondered – and she shook her head fiercely. He asked again, and again she shook her head.

Jess felt her heart thump. ‘What are you saying?’ she asked.

The boy shrugged.

‘Tell me!’

‘It’s not important,’ he said. ‘Here, would you like to hold your dog?’





She took Amber and rubbed her head. ‘What language were you speaking?’

‘Welsh’.

‘Oh.’ Of course. ‘Is she – is she your mum?’

‘She’s my aunt.’

‘So where’s ...?’ She didn’t speak her question, because she didn’t want him to ask about her mum.

‘What’s your name?’

‘I’m Huw.’ Huw. He said it with a kind of whistling sound.

‘Right. I’m Jessica – Jess.’

Huw’s aunt kneeled beside Jess with a bowl of steaming water. She had tipped some clear liquid into it. A sharp, clean scent filled the room. ‘Witch hazel,’ said Huw. His aunt smiled at Jess, and bathed her legs until they were clean. Jess bit her bottom lip. The witch hazel stung, but these were the kindest hands.

Now Huw was following his aunt’s instructions, bringing a box of bandage rolls, a jar of paste. ‘It’s honey,’ he said. Honey! Why? ‘It’s the best thing for cuts and grazes,’ he explained, translating for his aunt. ‘For burns too.’

Jess did not know how to reply. Already, though, she could feel a new kind of heat spreading through her legs, a good kind. Soon, both of her legs were neatly bandaged from knee to ankle. ‘Thank you!’ She tried to stand but the woman shook her head.

‘She thinks you need to sit still for a while,’ Huw explained. Huw’s aunt and nephew exchanged



some rapid remarks. ‘She’s going to make you a drink to help with the shock.’

The drink smelled of hedgerows and rosehips. It tasted bitter and sweet at the same time. She sipped it slowly and felt its warmth flow through her limbs like water. ‘How are you feeling?’

‘Good,’ said Jess, smiling and nodding. ‘Good.’

‘We make the honey,’ Huw continued. ‘That is, my aunt does. Well, I help. We have to go out now, but if you come back tomorrow, I’ll show you the hives.’

That night, Jess slept better than she had for ages. She had not told her dad or her brothers about her fall, or about Huw and his aunt. It felt private, somehow. Anyway, the three of them had been out playing football when she got back, so she’d changed into a pair of long trousers and kept her adventure to herself. She didn’t want Mike and Felix to tease her about Huw. And she didn’t want to lose him, either – to discover that he too would like to go and kick a ball about with her brothers and her dad. She wanted to keep her new friendship – was it a friendship? – to herself.

She woke up early, swung her legs over the side of the narrow bed and slowly unwound the bandages. The cuts were already healing so well that she wouldn’t need to put them back on again. And all because of witch hazel and honey. She washed the bandages and hung them over her windowsill to dry. *I’ll go back there straight after breakfast,* she thought.

But when Jess came downstairs, her dad was already putting together a picnic and packing up the camping kit. ‘This is a perfect weekend for the beach,’ he announced. ‘Look at that sky! We’ll drive over to Aberdovey. If we’re





lucky, we may see dolphins. I've checked the tides. The conditions are perfect ... You all right, Jess? You look a bit peeky.'

She felt her plans clatter to the floor. 'I ... can I stay here?'

Her dad stopped sandwich making and drew up a chair. 'Jess! I know it will be different without Mum; everything's different without her. But we can't just stop living – we can't just stop going to the places we all love, can we? What good would that do?'

Jess bit her lip. 'OK,' she muttered. She felt Amber rubbing her calf and leaned down to stroke her, trying not to cry. 'I'll go and wake up the boys,' said her dad. 'We need to get a move on or the best pitches will be taken by the time we get there.'

Her dad was right. It was a beautiful campsite and it was a beautiful beach, just as it had been the year before, and the year before that. Just as it had always been. The sea glittered silver and sapphire in the summer sun, the sand grainy and warm under their bare feet. It was busy, too – and everyone was in high spirits. They camped for the whole, magical weekend. They played frisbee. They swam, and Amber swam with them. Sand got into the sandwiches, the way it always did. The boys raced each other up and down the strand. There was just enough wind for her dad to get the kite up and he showed Jess how to reel it out and let it soar. At the campsite, they built a fire and sang with other families and her dad messed about on his guitar.

When the weather broke and they finally headed back to the cottage, they stopped at the cafe by the petrol station to buy fish and chips. *A weekend won't matter*, thought Jess as she flopped into bed. Tomorrow, she'd go and

find Huw and see the hives. It would have to be tomorrow – that was their last day here.

Through the wood. Careful not to trip on the brambles. Over the fallen oak tree. Across the stile. Here was the high brick wall of the kitchen garden and the place where she climbed over last time. The place where she fell. She wondered why there was not a door on this side too – it would have saved her a lot of trouble last time. She followed the wall to the corner, skirted the short side of the garden to the next corner, and the fence with the hole in it ... this time, Jess did not let Amber run ahead. She held the lead tight as they made their way.

But when they drew close to the yard, Amber started to whimper. Something was different – what was it? Something was wrong. Jess couldn't hear the hens pecking and clucking, the geese gabbling, the chatter of the parakeets. Why was the place so quiet? She felt a cold rush of fear in her spine. The yard was deserted – no birds in sight, no rabbits in the empty hutches, just a couple of wood pigeons scuffling about and the doors to the cages ajar.

She crossed the yard to the kitchen door, knocked and waited. A hollow silence seeped out of the door. No one came. She tried turning the handle, but the door was locked. Jess was stunned. What had happened? She ran around the side of the house and peered in through the kitchen window. It was thick with dust and cobwebs – how could a place be so deserted after just a few days?

Amber tugged at her lead, pulling Jess back to the door. Jess looked down. On the doorstep, she saw a jar of honey. A tag was tied to the lid. The ink had faded so that it was hard to read the letters – but she saw that they spelled her name.



OUR LOCKDOWN LIFE

Since Covid-19 came to our communities we have all had to deal with a lot of change and difficulties. It is amazing to think of the ways everybody – including children, parents and teachers – has had to adapt to a different everyday life. These four children from Hackney Quest – a charity supporting young people in Hackney, East London – tell us what their experiences with Covid-19 and lockdown life was like.



Marley Home-schooling in lockdown had its ups and downs. It was hard staying focused without my friends around but I found a way to get through it. I started making Zoom meetings with my friends so we could get our work done first, then we could play fun games. Having a sibling made it much better. To stay healthy, my family exercised together each day, which was fun. A great experience was when we were doing exercises in the park and a photographer came along and asked to take pictures of us. Hackney Quest did Zoom sessions each week that cheered me up, especially Eat Club. Getting back into the swing of things was quite hard but it became easier.



Samuel My experiences with Covid-19 were horrible and absolutely frustrating. Shops were closing and groceries were running low in the house and people kept dying and no one was allowed to leave the house apart from my mum and dad. I was scared for my dad because he worked in a care home so he has to go to work at 5 a.m and come back at 6 p.m. And I couldn't even go to the park to play or follow my mum to the shop. Online schooling was not fun at all. I missed my friends and all the play and fun we used to have at school. The only good thing was no one died in my family and no one contracted the coronavirus.



Sonia Covid has affected my life a lot because I couldn't go to school or see my friends. The worst thing was that I couldn't invite my friends to my birthday party or go to theirs. That wasn't fun at all. I was so scared because people's lives were taken. Schools were closed so we did online classes. It was a little hard but we made it work. Me and my family kept watching the news to see how many deaths there were in a day. I was shocked because there was a lockdown – how was there still more death? My parents had to buy a lot of food and wear an uncomfortable mask. I was really scared for my dad, because he was going to work every day.

Faith

Covid was a good time but also a bad time. I had fun spending more time with my family. Me, my mum and sister went on walks to Hackney Marshes (my dad was still working). We would take pictures and walk around. We had picnics and played Ludo. It was very fun and I really liked it. I had my ninth birthday in lockdown. My friends or family couldn't come over. I was sad about that. I was SO bored and I had no friends to play and talk with and every time we would go to the shop with masks and gloves, it was very uncomfortable. My mum got Covid in 2021 and we couldn't



go near her – it was very sad. I also had my tenth birthday in lockdown but it wasn't that bad. My neighbour's children who go to my school came and it was amazing.

Hackney Quest was established in 1988 to provide a wide range of projects for young people aged 8-25 and offers different and successful ways of engaging and supporting them for the long term. With the rise in youth violence and a perceived hopelessness amongst young people in Hackney, we aim to give them a place where they can feel safe and positively engaged and help them to develop to their full potential. Our service users have described us over many years as their "family", which is great reflection on the organisation and dedicated team of staff and volunteers.



ASK A MIDWIFE



Pascale is a midwife at Homerton University Hospital in London. What is it like delivering babies as a job?

Every day and every family is different!

When you were younger, what did you want to be when you grew up?

When I was younger I knew I wanted to do something in the medical field. I thought about being a doctor, a paramedic or a physiotherapist. My mum mentioned being a midwife to me; I didn't really know anything about it but I took a giant leap and went for it. I hadn't even held a baby before I became a student midwife but it was the best decision I could have made, and I can't imagine doing anything else.

What made you want to be a midwife?

Once I started training and seeing how rewarding it is to look after families at such a special time in their lives, I knew this is what I wanted to do for the rest of my life.

How many babies have you delivered?

I've lost count! But I finished my three years of training having helped sixty babies into the

world, and that was over ten years ago. So, who knows? 500? Maybe even more.

Can you tell us your favourite amazing birth story?

When I was a junior midwife, I was involved in the birth of quintuplets. That's five babies at once! That was a very exciting day at work.

What do you always need on you during a shift at hospital?

Pens. We midwives (in fact, most people in the medical world) love good pens. We will compliment each other on our pens all day long. Otherwise you need a bottle of water to drink, as it's thirsty work. We often get presents like chocolate from families we have looked after so we are usually found grazing on those too!

What's your favourite thing about being a midwife?

Having a baby is usually a happy event in people's lives, and playing a part in that event is very special. As I said earlier, no two days are the same so I walk into the hospital never knowing what the day will bring. It is never boring being a midwife!

Can you tell us a bit about what you do each day?

Every day as a midwife is different, and that's what makes it so interesting. At the moment I work on the labour ward, which means that I care for women in labour, and help them to give birth to their babies. I sometimes help women who are sick before or after they have given birth, and try to make them feel better. Other midwives see women during their pregnancies to make sure they and their babies are healthy, while some others visit them at home after the birth.

ASK Dr Ronx

**YOU ASKED DR RONX
YOUR BURNING MEDICAL
QUESTIONS AND HERE
ARE THE ANSWERS!**

Q

**WILL I BE GETTING A COVID VACCINE?
WILL IT HURT?** Caroline, age eight

A **Great question!** Vaccines trick our immune system into producing antibodies, which help us fight the disease. Just over half of the population of the UK older than eighteen are fully vaccinated, which has contributed to fewer people being admitted to hospital for serious Covid symptoms.

The Covid vaccination schedule started with making sure our

elders and vulnerable people were protected from the serious side effects of the Covid-19 disease. Then people were offered the vaccine according to age.

Rolling out the vaccine to children in the UK is under discussion. Currently, children that are fit and well do not need to be vaccinated against Covid-19. This advice may change so we wait to see what the future will bring!

Around the world, some children under the age of 18 have been

vaccinated too. These children have usually had serious underlying medical conditions, meaning that if they got Covid-19 they could become dangerously unwell.

Children in the UK receive vaccines against many serious diseases and you will probably have had some already. You may remember your arm being achy and sore – sometimes vaccines make us feel a bit tired and a bit hot afterwards. This just means that our immune system is working!

Q

**IN THE SUMMER I
ALWAYS GET LOADS OF
MOSQUITO BITES. WHAT IS
THE BEST WAY TO MAKE THE
ITCH GO AWAY?**

Huxley, age ten

A **Mosquitoes are tiny creatures** that live in many countries worldwide. They can carry potentially serious diseases like dengue fever and malaria, but you will be pleased to know that mosquitos native to the UK do not carry these diseases. Mosquitoes can be found in warm, wet areas especially around stagnant water. Mosquitoes drink human blood because it is nutritious and helps female mosquitoes to produce eggs. They pick their prey by

sensing human body heat: they are attracted to carbon dioxide and sweat.

Only female mosquitoes bite, by using a long mouth part called a proboscis. The proboscis pierces the skin, which is often painless, and while they suck up blood they inject their own saliva. After being bitten, many of us are left with a red raised lump, which is a reaction to the proteins in the mosquito's saliva. The bite area is often itchy and if we scratch too hard and often, we can introduce bacteria from our hands into the bite area and cause a skin infection, which might require antibiotics.

Fortunately, most bites do not need medical treatment, but there are things that we can do to prevent bites and things we can do to relieve the bite symptoms.

To prevent bites

- Cover bite-prone areas of the body, such as ankles, neck and wrists, with lightweight long-sleeved shirts and lightweight trousers.
- Wear insect repellent.
- When abroad, stay away from areas where mosquitoes are likely to gather.
- Avoid highly scented body products and perfumes.

To relieve bite symptoms

- Don't itch or scratch bites.
- A care giver can give a medicine called an antihistamine to help with the itchiness. This medicine can be bought as a liquid and swallowed, or as a cream and applied to the bite area.
- A care giver can give a painkiller if the swelling hurts.
- A cold compress can help with swelling and pain.

Q

I WAS BORN AS A GIRL, AND I WEAR GIRLS' UNIFORM AT SCHOOL, BUT I DON'T FEEL LIKE A GIRL MOST OF THE TIME. WHAT SHOULD I DO? Tam, age ten

A

It is so brave and courageous of you, Tam, to be able to identify and speak about these feelings. What you are feeling is a term called 'gender dysphoria'. Gender dysphoria describes not feeling aligned to the male or female label that you were given at birth. These feelings can be initially confusing and stressful but are not bad or wrong. My gender identity is trans non-binary.

I was assigned female gender at birth – babies are assigned female sex or male sex at birth as usually a direct result of what their body looks like. I do not feel that I am a woman or a man. My gender identity is not women or man; it is non-binary. I am referred to as 'they' and not she (or he).

The term 'trans' is an umbrella term used to include all people who do not feel that their gender identity is aligned with their given sex.

There is no rush to label yourself or tell people how you feel if you do not want to, but I encourage you to talk with someone about your feelings – a close friend, family member or trusted adult at school. People may not know all the answers

to your questions but what they should do is make space for you to open up, encourage you to be open about your feelings, love you for you and support you with any decisions that you make.

This is an exciting time in your life; it can be confusing, and you may find that not everybody understands what you are going through, but there are people and organisations that can guide you through your gender identity journey. Your feelings about your body and gender identity and how you express yourself may change many times and this too is OK. Here are some resources to help you and the people you confide in: mermaidsuk.org.uk Tranzwiki on gires.org.uk stonewall.org.uk

A

Many children suck their thumb for all sorts of reasons. When we are babies, it is usually a massive comforter and helps us relax, feel safe and sleep. Some babies and young children suck their thumbs when they are feeling negative emotions such as fear. When we do something a lot, it is called a habit.

Often adults try to discourage thumb-sucking and this can be stressful when children are told that

it is bad. You may or may not have noticed that thumb sucking can cause top teeth to move forward at an angle in the mouth and sometimes it can affect speech. Remember that habits can be difficult to break and that it is important to remain positive and that it is always better to try than to never try at all!

You could try having a plaster or special foul-tasting nail varnish

Q

I SUCK MY THUMB AND I AM SEVEN YEARS OLD. HOW CAN I STOP?

Emily, age seven

on the thumb as a reminder. You could agree on how your family could help if you accidentally suck your thumb – maybe a tap on your hand, or maybe you have to complete a house chore. If it is hard to break the habit, dentists can help with tips on how to protect developing teeth.

Q

I FEEL ANXIOUS A LOT OF THE TIME. HOW CAN I FIND SOMEONE TO TALK TO?

Daniel, age eleven

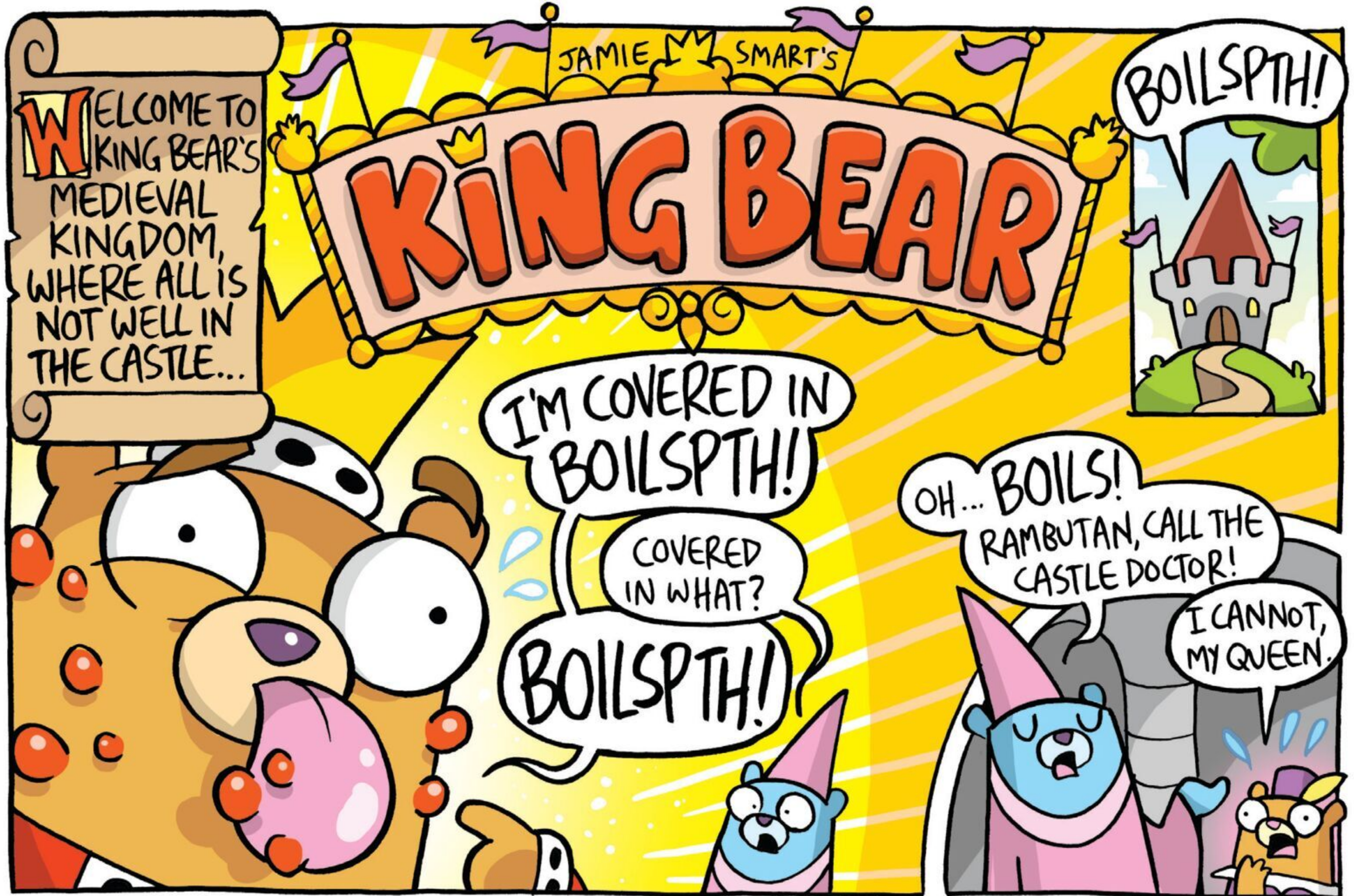
A

Anxiety affects all of us at some time. Recognising that the feelings are with you most of the time is an important first step towards dealing with them – so, well done.

Many different things can cause anxiety, and I know that letting an adult know is important when looking for help. This adult can be a teacher at school, a parent or caregiver, a tutor, the school nurse, an adult from after-school club, as examples. Doing this alone can seem daunting so asking a best friend, relative or sibling to be with you will help. I highly recommend the website www.youngminds.org.uk and searching for 'anxiety'. This website

is aimed at young people and explains anxiety and other feelings really well, with advice and soothing suggestions. Childline is dedicated to the wellbeing of children and young people and has a free phone number to call where a trained adult will listen and guide callers through their feelings.

Childline 0800 1111

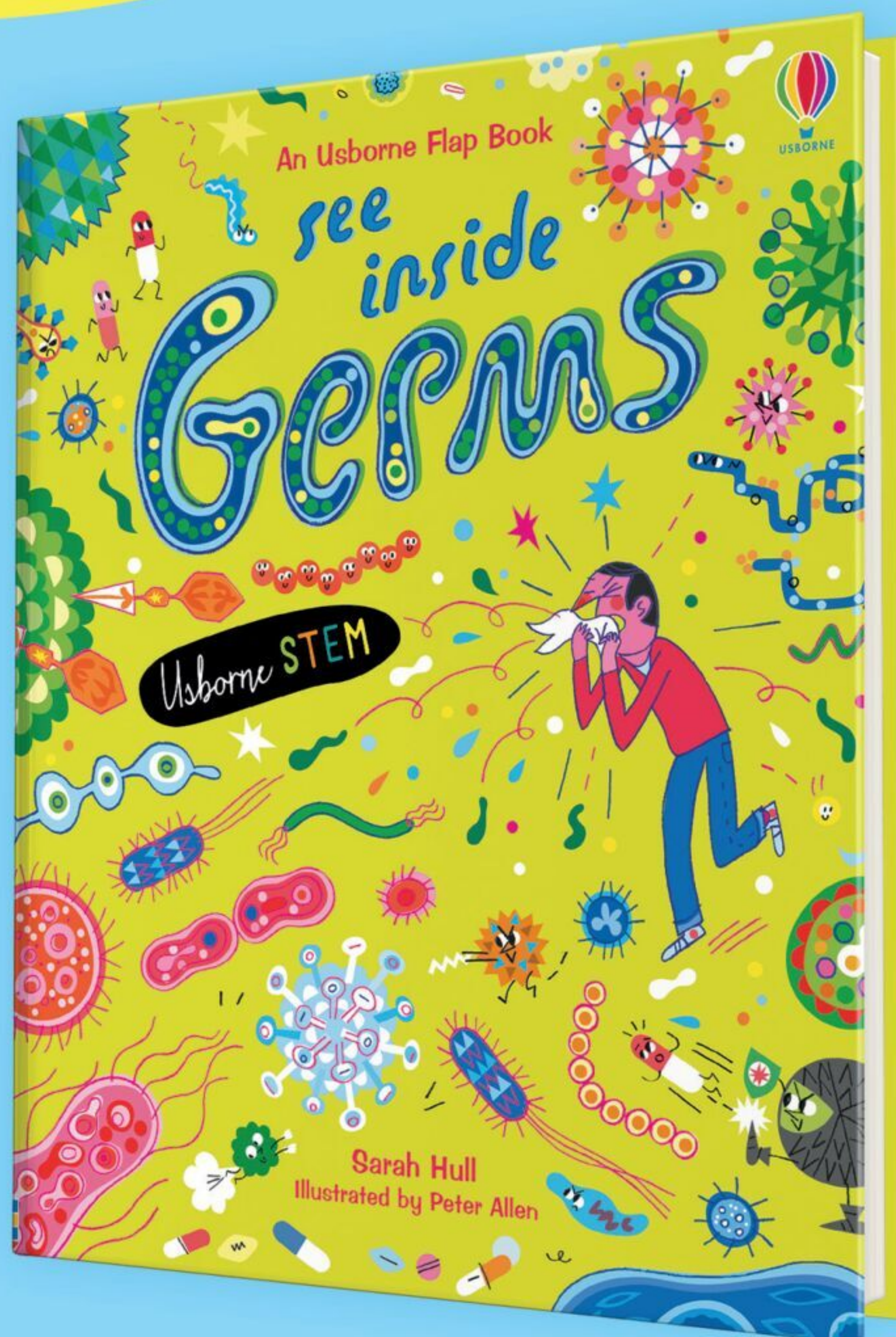
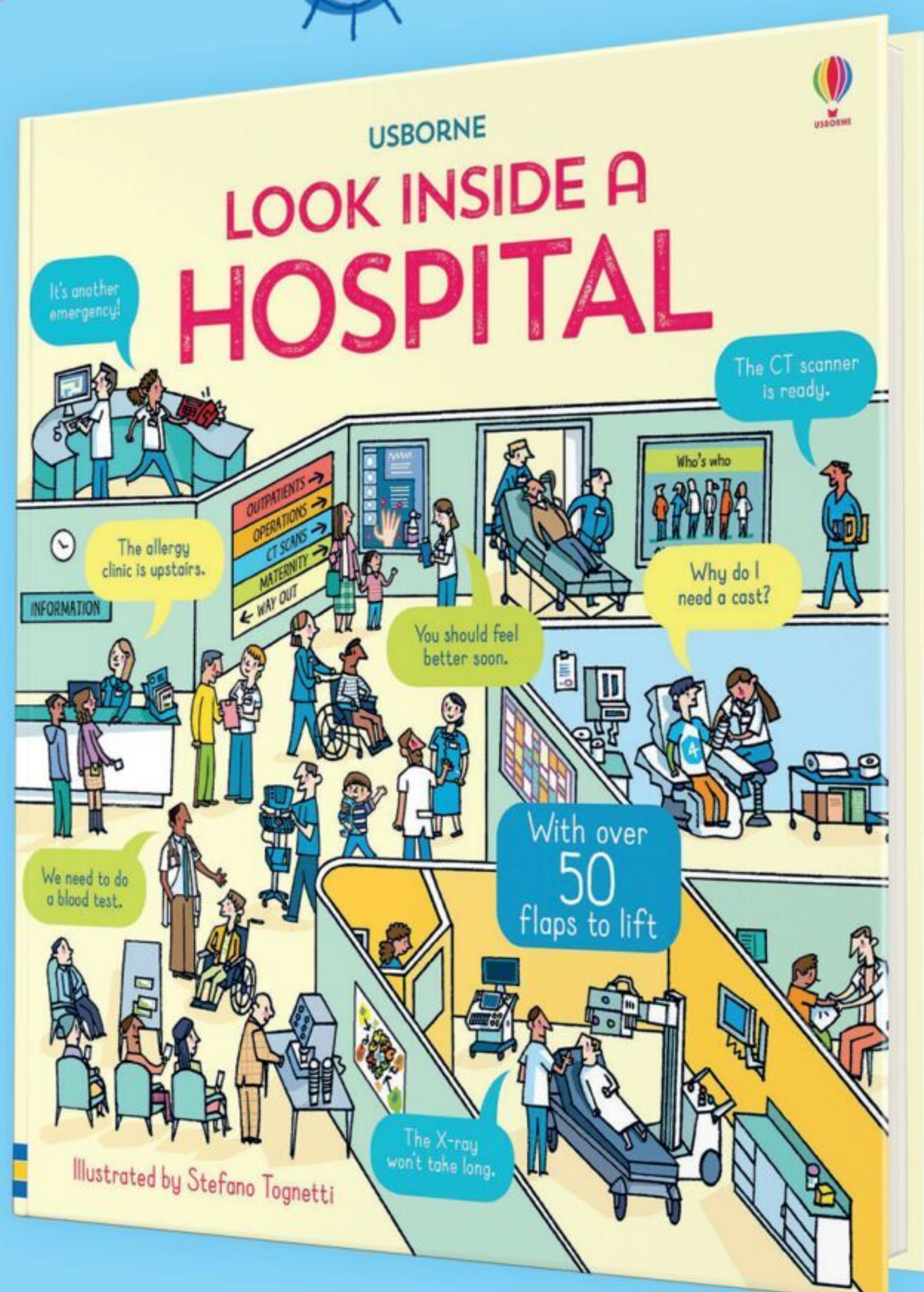
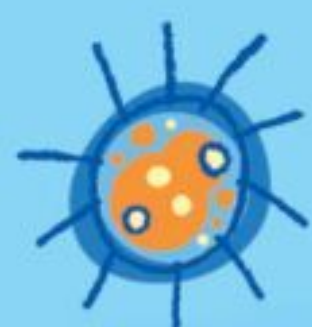
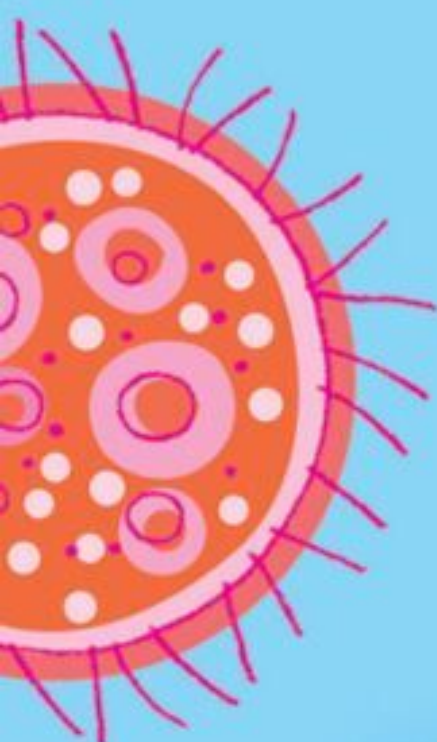




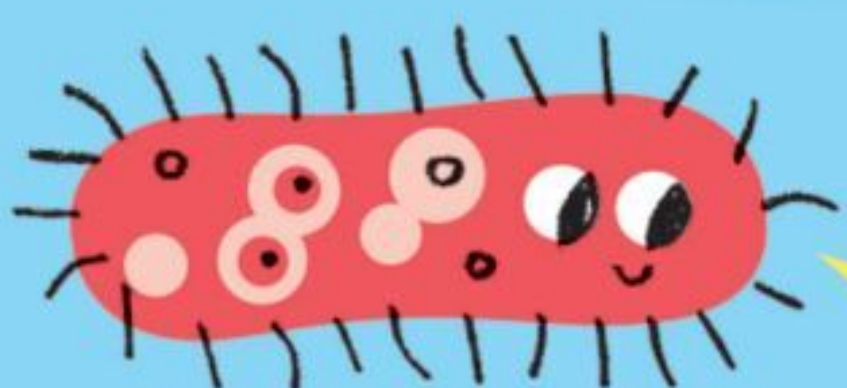
Making Knowledge Irresistible



Discover the microscopic world of bacteria, viruses and other microbes, including COVID-19. Learn how germs spread, how the immune system works, the amazing vaccines and antibiotics humans have created, and much more.



Lift the flaps to find out what happens inside a hospital – and meet some of the amazing people who work there. Explore the emergency and maternity units, learn how x-rays and scans work and see inside an operating theatre.



Available online and in all good bookshops



MEET OUR JUNIOR EDITOR NARLA

AGE 10

Can you tell us a little about yourself?

My name is Narla. I was born in August 2011. I am from Gambia and Turkey but I was born in England. I enjoy gaming a lot; the game I love to play most is Roblox. I enjoy roller-skating.

What is your favourite book?

Harry Potter and the Philosopher's Stone because I love how it takes a huge turn – SPOILER ALERT!

Is there a character you feel close to in this book?

I feel close to Harry because he is brave and when he gets hurt he doesn't cry.

Is there something you would like to change in the world?

I would change racism because some people get treated differently because of the colour of their skin. That's like someone saying I don't like you because you're not wearing the same hat as me. I find it very silly that people do that because we are all humans so we should not get treated differently.

Who do you know who inspires you and why do they inspire you?

My mum inspires me because she gives me very good advice that makes me feel confident and good about myself. I also look up to Rosa Parks because she did not think it was right that black people had to sit at the back of the bus. She listened to her instincts and took a stand. I believe that that was a very heroic thing to do.

If you could travel anywhere in the world, where would it be?

I would love to visit Turkey and Gambia because those are the two countries that I am from.

If you could only eat one thing for a week, what would you choose?

I would choose cereal because it provides both food and drink.

What do you think would make a great medical invention or breakthrough?

A gadget that tells you what ingredients you need to make a cure to a sickness.

Can you tell us your favourite joke?

What did the cheese say to himself in the mirror?
Halloumi.



QUICKFIRE ROUND

- Writing or drawing? Drawing
Dancing or football? Dancing
Ice cream or cream bun? Ice cream
Broken toe or have a cold for a month?
Broken toe
Spider sandwich or worm spaghetti?
Worm spaghetti
Cat or dog? Cat
Smoothie or fizzy pop? Smoothie
Library or sports centre? Sports centre

COMPETITION WINNERS

We had some **amazing** entries to the **Scoop comic competition** and they all made us laugh. It was hard to make a decision and we had to ask resident **Scoop comic geniuses Robin Etherington and Jamie Smart** for their help in choosing. And so, we present our **top three winners!** Congratulations to all who entered.

1

ORSON, AGE ELEVEN



MEDICINE MAN!

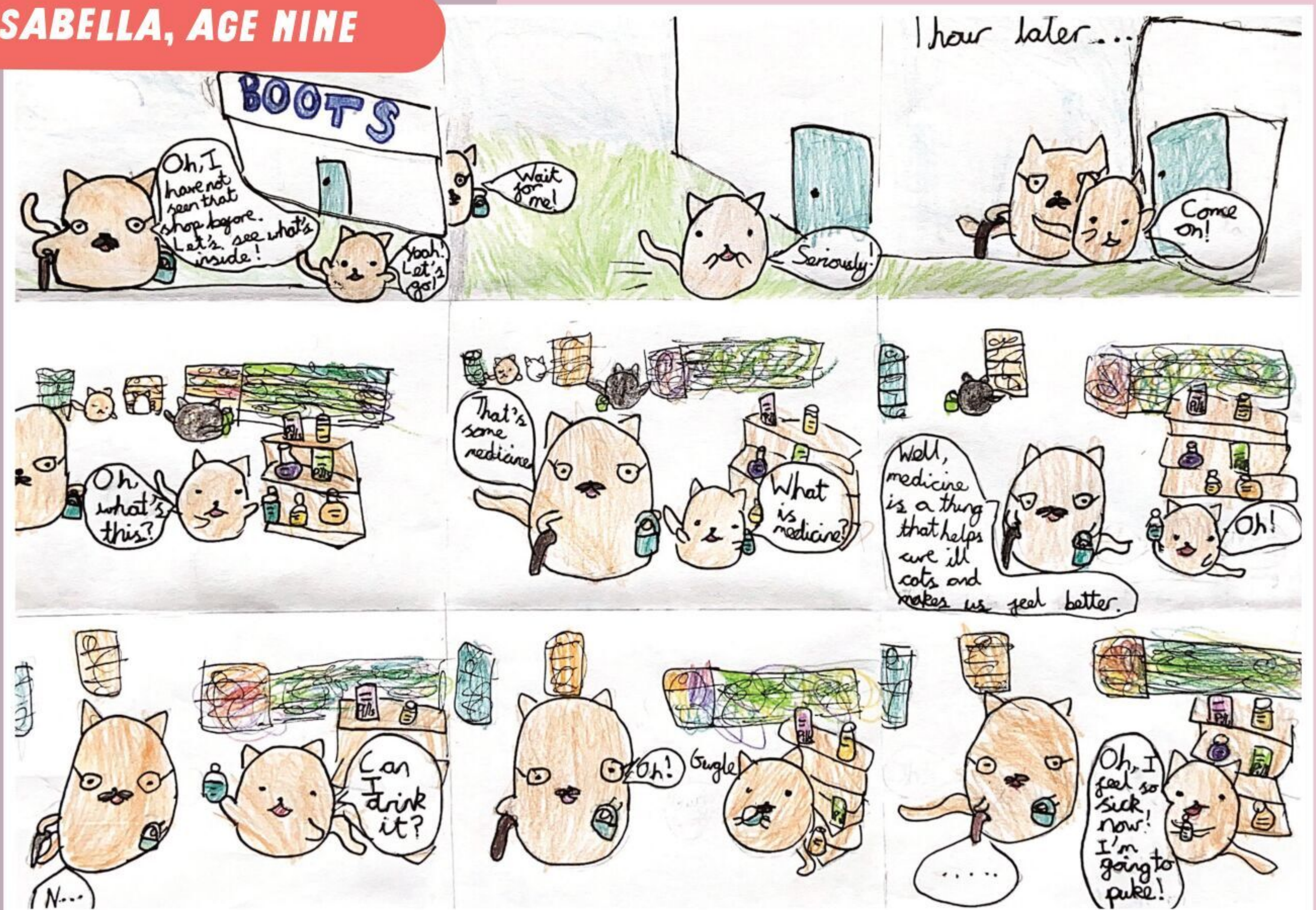
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ELSIE, AGE EIGHT



3

ISABELLA, AGE NINE

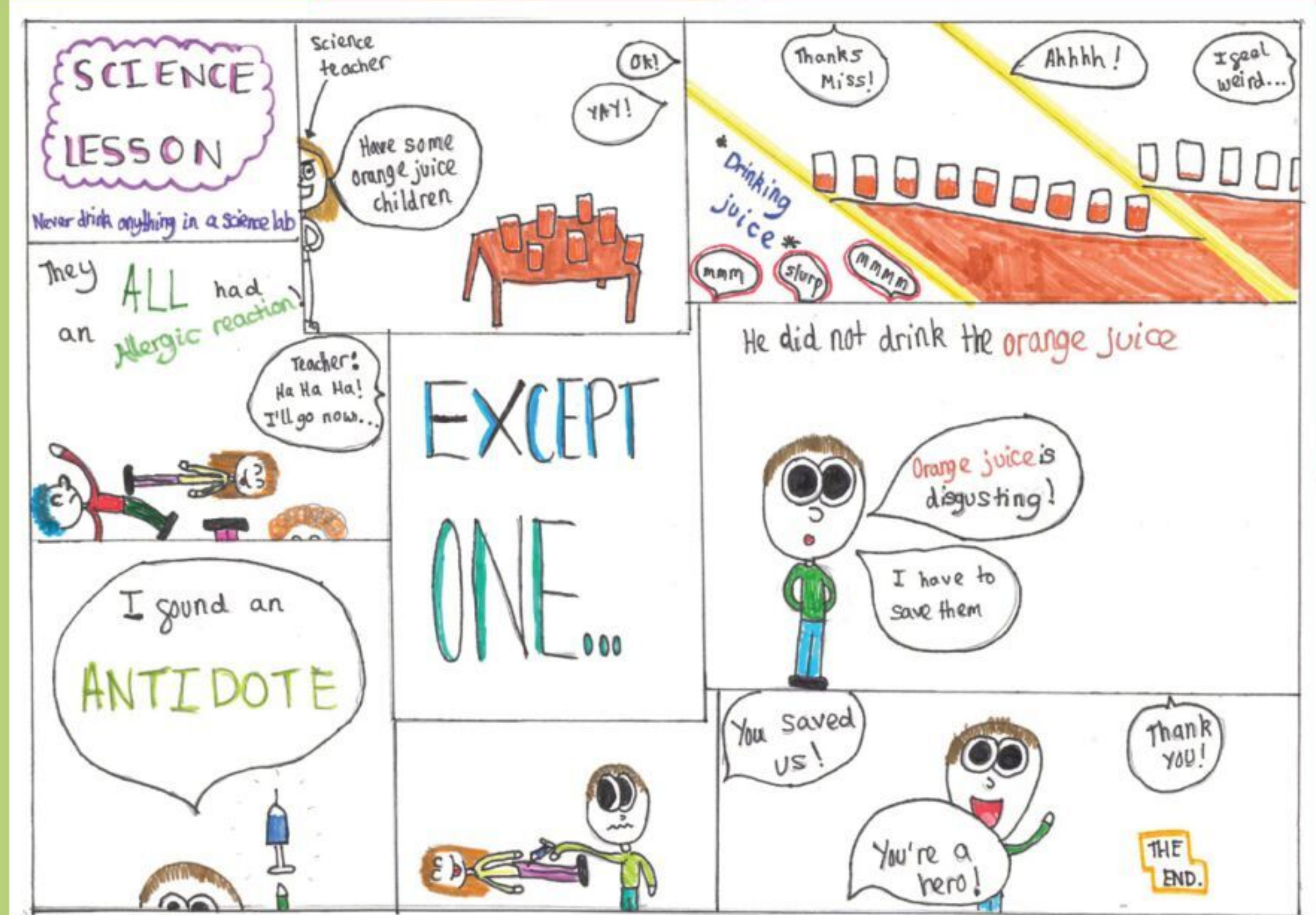




JULIET

Unfortunately, we can't print all your wonderful entries, but here are a few more we loved.

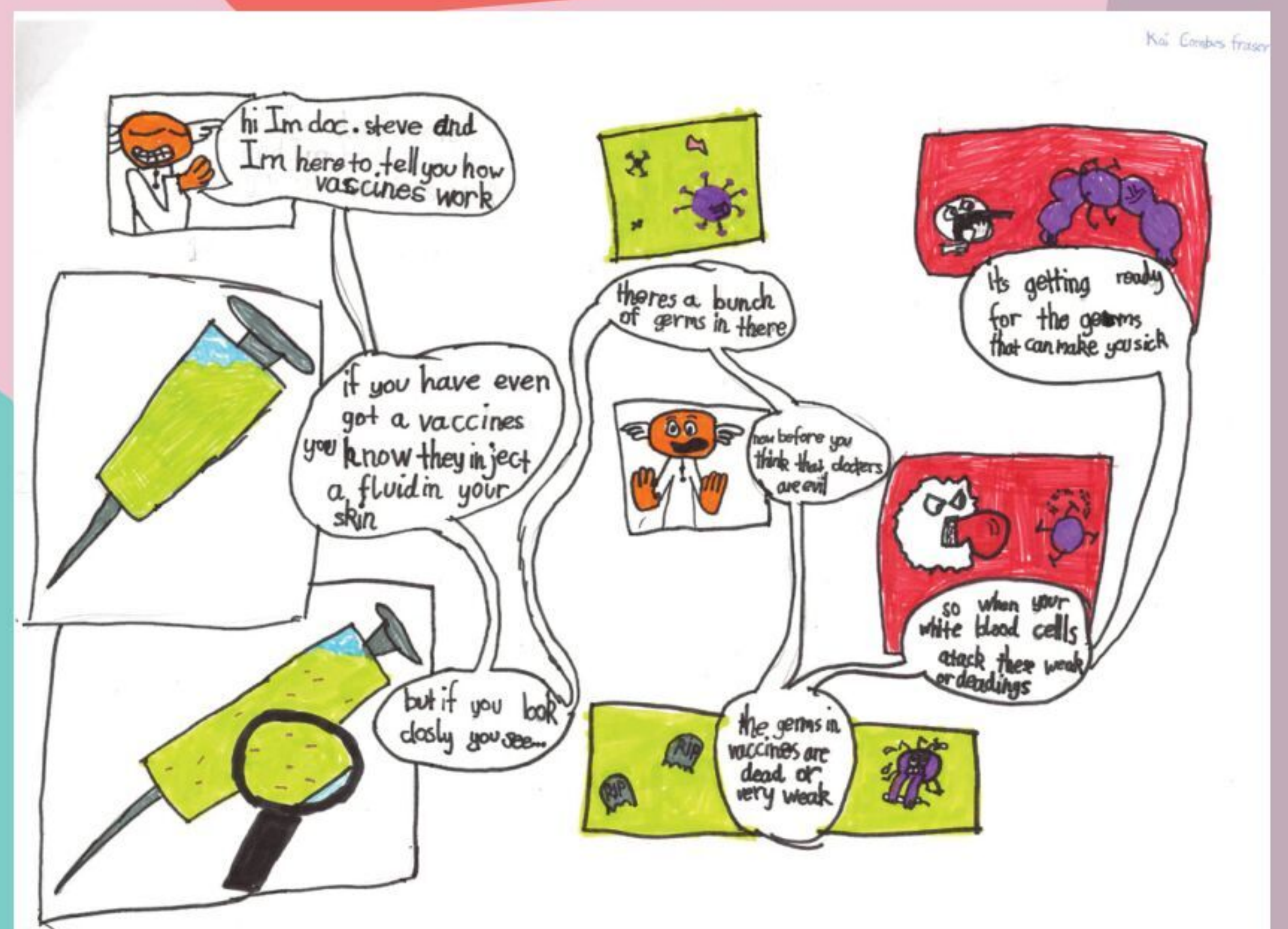
ELENA



SONIA



KAI



Cordelia can shape-shift
into any animal she chooses.



Out
now!

But can she save a kingdom?

Find out in this epic fantasy adventure, perfect
for fans of Abi Elphinstone and Piers Torday.

Dear DOCTOR

Ailment

Dear Reading Doctor,
When I was at my grandad's house last weekend, I got stung by a bee. Usually, when I get an insect bite, my dad puts some white cream on it. But my grandad went into the kitchen and got out his honey. For the sting! He said that his granny always put honey on bites when he was younger. He told me that she made him suck a lemon when he felt sick and take a bath in porridge when he had eczema! It was so funny ... I thought about it all afternoon until my dad came to pick me up. Are there any stories out there about how ill people were cured in the olden days?
Jamie, age ten

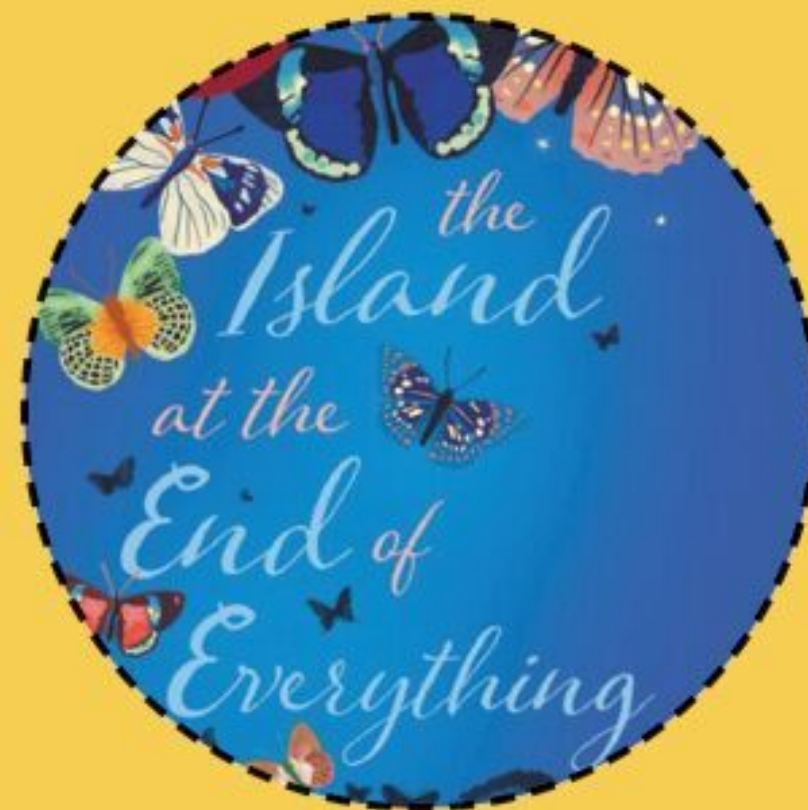


Chris Young works as a children's specialist for Golden Hare Books, an independent bookshop based in Edinburgh – this involves trying out all sorts of ways to get kids into reading. She also works as a part-time librarian, doing a similar job! She has been involved in setting up www.readingdoctor.co.uk (and an Instagram feed – [the_reading_doctor](https://www.instagram.com/the_reading_doctor)) to address the kinds of questions on books that she gets from parents, teachers and children.

Prescription

Dear Jamie,
Did you know that the Ancient Egyptians made ointment out of mud and mouldy bread?! Medieval doctors were just as wacky ... they used magic stones and special charms to cure their illnesses. The Tudors told people what was wrong with them by reading signs in the stars while the Victorians liked to cover their patients in leeches. The way that we treat diseases has changed a lot as we learn more and more about how our bodies work – and thank goodness for that! For a look into life as a sick person in times gone by, have a read of the two books on the right.

The Reading Doctor



1 The Island at the End of Everything by Kiran Millwood Hargrave is about a girl called Ami who lives on a beautiful island surrounded by clear blue seas. It's a peaceful paradise, but there's one big difference between Ami's island and the islands nearby: people who are sick are sent to Ami's island to isolate, and never allowed to leave. When sick people are separated from people who are still healthy, Ami is taken away from her mum – can she find her way back home before it's too late? This is an important story about sticking together through thick and thin – especially when times are hard – with your family and friends by your side.



2 A Short, Illustrated History of Medicine by John C. Miles is full of fascinating medical facts. It tells the story of John Snow, a Victorian man who discovered that it was the water in London making people sick (the healthiest men were drinking beer!). And Wilhelm Röntgen, the scientist who took the world's first ever X-ray picture: of the bones in his wife's hand. You'll learn about smallpox, scurvy and surgery ... germs, genes and DNA. A Short, Illustrated History of Medicine is a great glimpse into the discoveries that help us live such long and happy lives today.

Why not send your questions to our reading doctor at hello@scoopthemag.co.uk

www.readingdoctor.co.uk

Ailment

Dear Reading Doctor,

I was watching TV the other day and there was a doctor on the news talking about vaccines. He said that the scientists who worked on the coronavirus vaccine made it in the shortest time that anyone has ever made a vaccine. Then they showed pictures from a vaccination centre and there were loads of doctors and nurses there in blue uniforms, giving people medicine and speaking to them. It was so cool to see them all together. I would love to help too when I am older. Are there any books about getting a job like this?

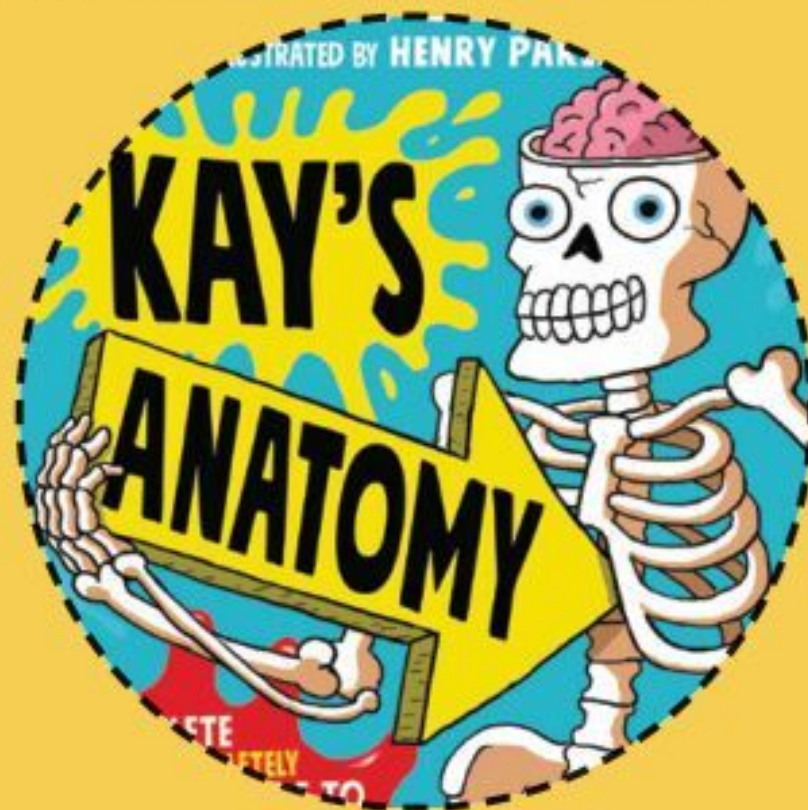
Rosslyn, age nine

Prescription

Dear Rosslyn,

It's been a truly miraculous year for medicine. Before 2020, the quickest that scientists had ever developed a vaccine was in four years. Well, we've now beaten that record by a long way – the first Covid-19 vaccine was ready in less than twelve months! Isn't that amazing? Thousands of men and women have come together from across the country to meet this mighty challenge and pull us through it. Doctors, nurses, scientists, pharmacists, carers ... wherever you look, you'll see people helping. And I think it's fantastic that, one day, you'd like to do the same. For some great info, advice, tips and tricks to get you started, check out these two books on the right.

The Reading Doctor



1 *Kay's Anatomy* by Adam Kay contains anything that you'd ever like to know about the human body. I guarantee that you will learn something new about yourself on every single page. Have you ever wondered which of your muscles is the biggest of them all? Or what your kidneys, liver and intestines do? Can you eat bogeys or are they best avoided?! If these kinds of questions tickle your reading tastebuds, then check out *Kay's Anatomy* to get your fill of funny stuff and fascinating facts.



2 *Nano: The Spectacular Science of the Very (Very) Small* by Dr Jess Wade is a brilliant book about a super-cool area of science: nanotechnology. Nanomaterials are tiny – some are just one atom thick! They can be used to solve all sorts of problems, especially in the human body. Did you know that scientists are working on nano computer chips and special glasses to help people who can't see? They're also developing 'nano' water filters to trap even the tiniest pieces of dirt so that all water is safe to drink. If you're interested in helping people, then learning about science is a good way to go – and this book is a great first step in becoming a life-saving, invention-making whizz-kid of the future!

Happy reading,
The Reading Doctor

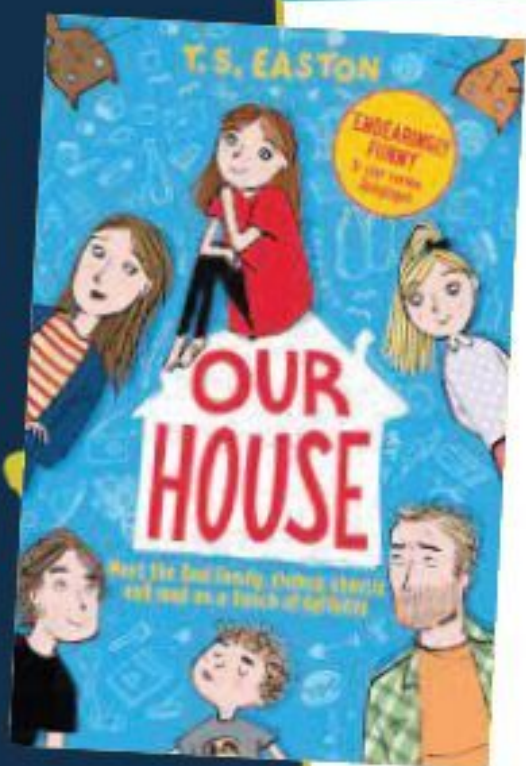
GARETH'S

JOKE BATTLES

Hello. It's me, Gareth 'GP' Jones, here to present a comedic collision as four children's authors step into the operating theatre, hoping to slice through and tickle your funny bone. Yes, it's time for a medical special of ... JOKE BATTLES!



Tom Easton could have been a doctor, but it takes years of training and, in the end, he just didn't have the patients.



Doctor, Doctor, I keep thinking I'm a dog!
Get off the couch.

Doctor, Doctor, I have a terrible migraine!
Now, now, I'm sure it's all in your head.

Doctor, Doctor, I can't sleep!
Call me in the morning.
Will you have a cure then?
No, I have an early flight and my alarm's broken.



Guy Bass recently went for a job administering vaccinations, but he failed the exam as all his efforts were in vein.



Did you hear about the poorly pony?
He ended up in horse-pital.

My doctor said I was obsessed with small units of time.
I asked for a second opinion.

When I cut my arm, the postman delivered a bandage.
It was just what the doctor ordered.



Rachael Delahaye's poor eyesight prevented her from becoming an acupuncturist. In the end she couldn't see the point.



Where do Geordie doctors work?
In Aye & Eee.

What do sports doctors drink on a hot day?
Fizzy O.

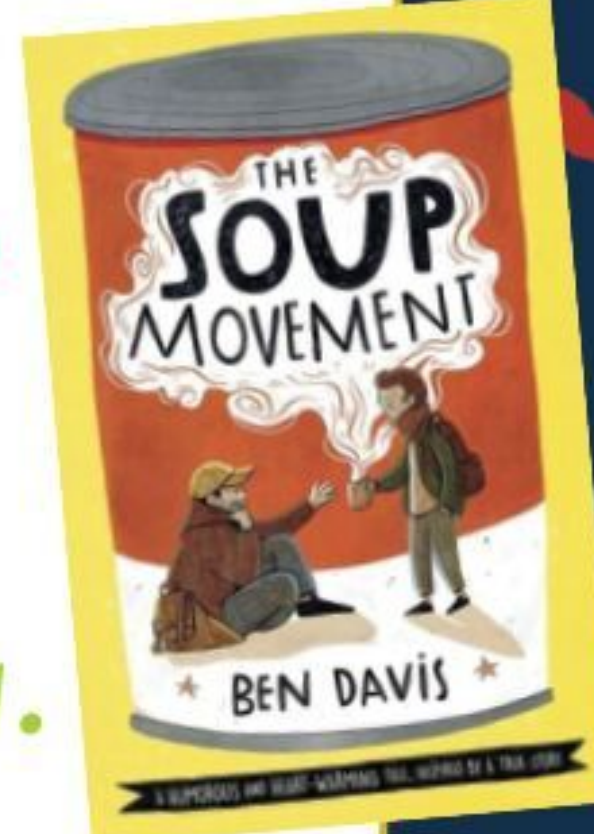
Doctor, Doctor, I keep thinking I'm a horse!
Woah there ...

What's the top fashion trend for doctors?
High jeans.



Ben Davis wanted to be an aesthetician, which probably explains how he comes up with such knock out jokes.

The doctor just called and told me I have amnesia.
Ah well, at least I haven't got amnesia.

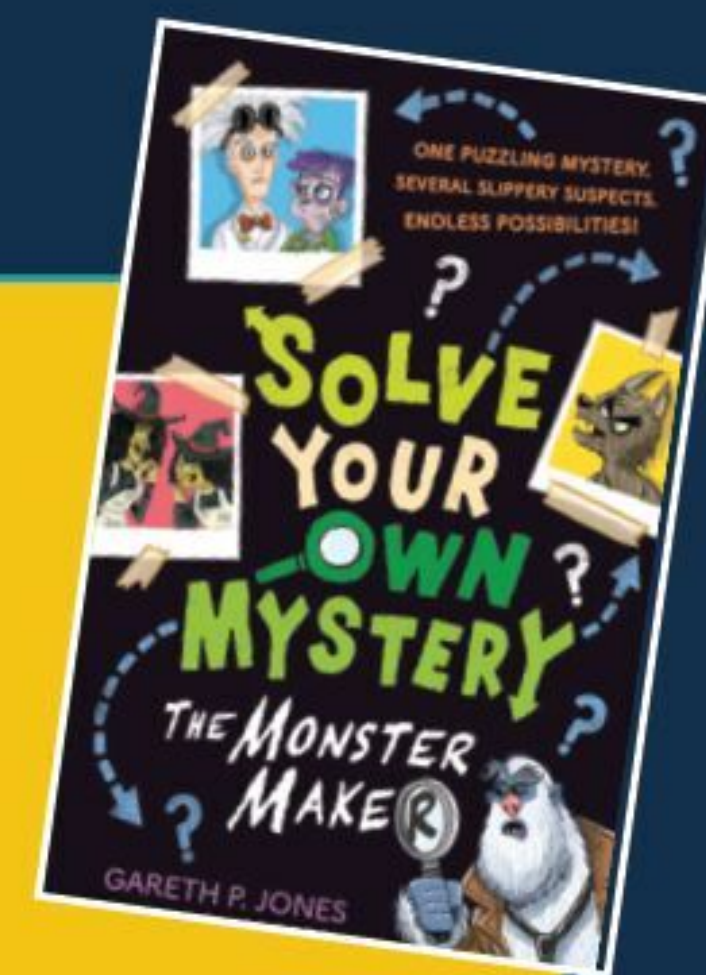


How many jokes about opticians do you know?
One or two.
One ... or two.

DOctOr, DOctOr, why Am I spEAKing lIkE this?
Hmm ... sounds like you have Irritable Vowel Syndrome.

It's up to YOU to decide the winner. And talking of YOU, I have a new book out this month, all about YOU! *Solve Your Own Mystery: The Monster Maker* is the first in my new series of mysteries starring a yeti detective and YOU! If you get hold of a copy, I hope you like it.

Gareth P. Jones' latest picture book, *Solve Your Own Mystery: The Monster Maker* is published in August by Little Tiger Books.



Scoop Club

At Scoop Club we publish your creations in every issue.
Here are some fantastic contributions from our readers.

TANVI, AGE THIRTEEN

I was all caught up in my conceit
I was living on deceit
I had been blinded in my ego, nothing, I could see
Then, I started searching for me,

I gave up on everything
I couldn't dance or sing
I lost all the faith that bound me
I gave up on searching for me,

I knew I had to stay strong
I forgot what happened so long
I tried to see within me
So I again began to search for me,

I started to write
My heart's heaviness felt light,
I came to know for what I was meant
Then the search for me came to an end.

AKSHARA, AGE ELEVEN

MY VISION FOR THE WORLD OF TOMORROW

I want my world to be techno-eco-friendly. Right now we are facing too many problems. For instance, Covid-19, racism, global warming etc. I live in Switzerland and, here, the glaciers are melting really really fast. We need to find permanent solutions to all these problems.

In my world, people would respect each other no matter where they are from. There would be bio panels, installed on all the highways, which will absorb all the pollutants from the air. There would be robots to plant trees once the number of trees comes down in a particular area. In every city and village there would be water recycling centres. School classes would be held under the trees, by the beach, and in the International Space Station, which would be big enough by then.

We would have super smart TVs that detect our mood by touch sensitivity and play the programmes that we need. We would have mini-airplanes and air buses and we would go to Mars and the Moon for holidays and listen to concerts in space. This would allow us to know more about Mars. Knowing more about outer space would make us protect our environment in a better manner. Our future world would be a very safe place to live in.

IMOGEN, AGE SEVEN

BUTTERFLIES

Swooping, swerving, butterflies that are
Flying with glee, they fly high and
Low and next of all settle on a
Tree. Up, up, up next to a rainbow
They can fly, the limit of how
High they go is way up in
The sky!

Send your pictures and words to us at scoopclub@scoopthemag.co.uk with your name and age and we will publish our favourites in our next issue.

PARIS

FRANCE



Tell us a little about yourself.

My name is Oscar and I'm ten years old. My passions are football, baking and playing video games.

Where do you live?

I live just outside Paris, near the Bois de Vincennes (the woods).

What is your family like?

My family is fun! I've got a mum and dad and a younger sister, Stella, who's quite crazy and cheeky. I like it when we all go to my parents' countries on holiday - my mum is English and my dad is Portuguese.

Do you have any pets?

Yes, I've got a cat called Billie. I used to have a pet tortoise called Maggie who ran/walked away ...

What is your favourite thing to do in Paris?

I love going down the Champs-Élysées on those electric scooters. I also love meeting my friends in our local park and playing football.

Tell us about your school - what is the best thing about it?

The best thing about my school is my friends and my playground, because it's big and noisy!

And what is the worst?

The worst is the canteen and the toilets. Both are disgusting!

What is your journey to school like?
Well, now I can walk to school on my own and the journey is really quick. I only cross three roads and I pass a creche, a supermarket and some houses.

What is your favourite view in Paris?
I like the view of the Eiffel Tower on the bridge near the American Library. I also like seeing the Arc de Triomphe at the end of the Champs-Élysées.

What is your favourite smell there?
I like the smell of hot bread in the bakeries!

Have you ever broken any bones?
No.

What do you think would be the best medical breakthrough?
A virtual reality headset but for real life so that blind people could see.

If you could invite anybody in the world to visit you in your city, who would it be?
I would love to see Kylian Mbappe, my favourite footballer.

What would you show them about where you live?
I would show him my football club, my best friends and the port near my house.

Can you tell us your favourite joke?
Why did one of the world's best players keep getting told off by his mum?
Because he was Messi!



CAPE TOWN

SOUTH AFRICA



Tell us a little about yourself.

My name is Alejandro but people call me Nano. I am ten years old and I like gaming.

Where do you live?

I live in Cape Town in the Western Cape, which is in South Africa.

What is your family like?

There are nice most the time but sometimes get mad. I also have two sisters and one brother and one half-sister.

Do you have any pets?

Yes! I have five dogs, two cats, two horses, two ponies and chickens.

What is your favourite place in Cape Town?

Going to our farm - it's a long drive but it's fun when we get there.

Tell us about your school - what is the best thing about it?

My favourite subjects are maths and art. I also like to talk to my friends.

And what is the worst?

It's English because it's just too much writing!

What is your journey to school like?

It's pretty short but it's cool.

What is your favourite view in Cape Town?

It would be from the top of our mountains - from there you can see all of Cape Town.

What is your favourite smell there?

The flowers.

Have you ever broken any bones?

Yes - I broke my arm when I was six, when I tried to go down a fire pole!

What do you think would be the best medical breakthrough?

A medicine that cures cancer.

If you could invite anybody in the world to visit you in your city, who would it be?

One of my friends in a different country - his name is Hamood Hameed.

What would you show them about where you live?

I'd show him my school, my house and town.

Can you tell us your favourite joke?

Why should you not write with a broken pencil?
BECAUSE IT'S POINTLESS!



READER

REVIEWS



City of Rust

by Gemma Fowler

Chicken House, £6.99

Review by Jake, age ten

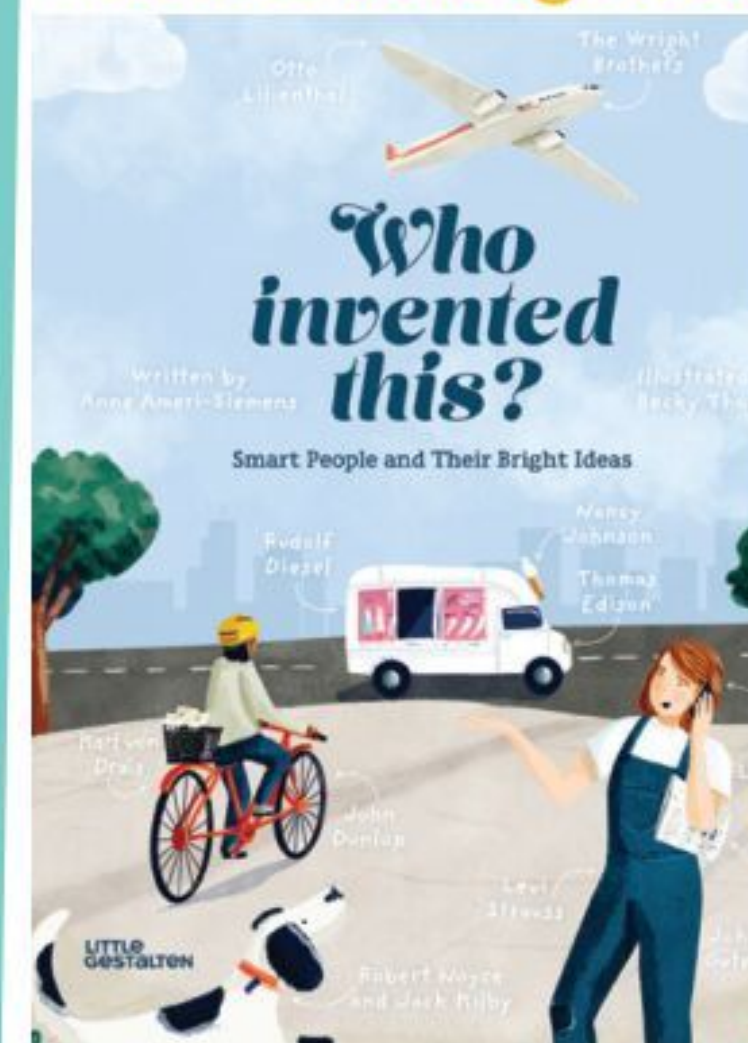
I really enjoyed reading *City of Rust* because it was a definite page-turner and the storyline was fast-paced and intense. The reader is taken on a sci-fi adventure into the future where there are drone-racers and junk-traders. Railey and her robotic gecko friend, Atti, must save the world from a danger greater than any other. A massive man-made bomb of waste and trash! There are a few unexpected twists along the way.

I liked it because it made me really think about what we do with our rubbish and how, if we don't start making more recyclable products, it will end up in space! It also highlights how a large number of people do have to live and work in rubbish. If you like *Star Wars* then you will definitely like this, with the similarities between pod racing and drone racing. The drone racing also reminded me of *Robot Wars*.

I thought that the characters were very imaginative and I could picture them in my head very clearly. I really wanted them to succeed on their mission. I would definitely like Gemma Fowler to write a sequel to this incredible story.

Who Invented This?

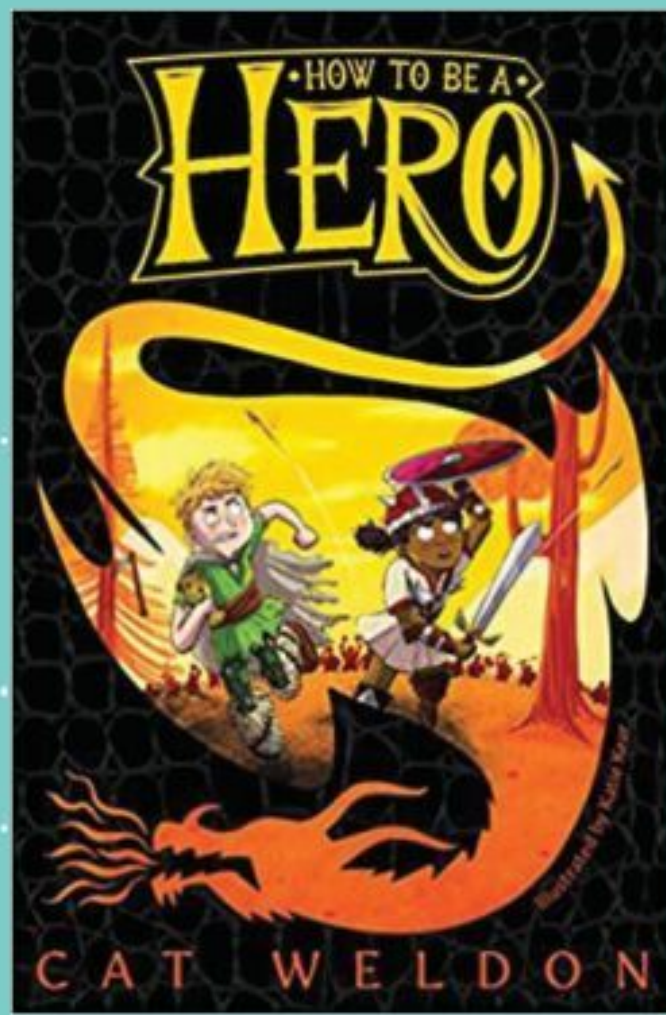
by Anne Ameri-Siemens,
illustrated by Becky Thorns



Little Gestalten,
£16.95

Review by Sholto,
age ten

This book is all about the inventions that these days we take for granted, like the zip or the tyre or Post-it notes. The stories behind how they came to be are often fascinating – for instance, traffic lights used to be manned by humans – and often also quite mundane: the Post-it was invented because Art Fry sang in a choir and the bits of paper he kept putting in his song books used to fall out (this happens to me, a lot. I should use more Post-its.) My favourite story in this book though is the one about the invention of instant noodles, which came about because Momofuku Ando was so sad to see so many starving people after Japan surrendered at the end of the Second World War, who would queue for noodles among the ruins of Osaka. He decided that he had to find a way to make those noodles much more quickly – he did, and those led to today's Pot Noodles. It was Ando's dream to end hunger all over the world. It's nice to think that utopian dreams can lead to something really practical.



How to be a Hero

by Cat Weldon,
illustrated by Katie Kear

Macmillan Children's
Books, £6.99

Review by Hari, age nine

How to be a Hero is about a boy called Whetstone, who wants fame and glory out of stealing. When he actually steals something, he doesn't know the trouble it will cause and the people that will stand in his way. Things get worse when he finds himself on a mission to get a pesky dragon out of his village. What could go wrong? *

My best bits of the book are when Lotta – a Valkyrie who brings back dead people to their land to fight with the gods when the frost giants invade – takes Whetstone, who she thinks is dead, back to her world. I think what makes it funny is that the reader knows that Whetstone's alive but Lotta doesn't and it's hilarious when Lotta realises that he's alive.

I also really enjoyed when they were climbing down Yggdrasil, the giant tree that the different lands are on, because the way they got down was really funny – arguing at every point.

I would recommend this book for seven to nine year olds who like fantasy, adventure and a deceptive plot. If you like books that are set in fantasy but have lots of real-life elements you'll really like this.

* everything

How To Save The World With a Chicken and an Egg

by Emma Shevah

Chicken House, £6.99

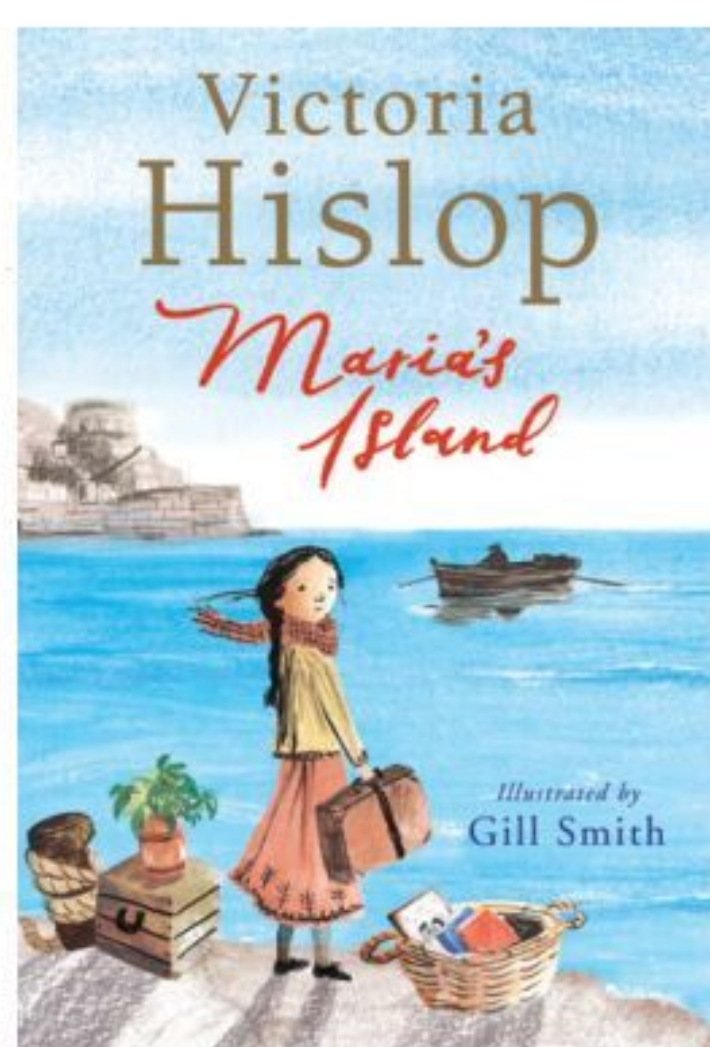
Review by Nancy, age seven



Ivy and Nathaniel are a boy and a girl who are very different, with one common interest: how to save the world. Nathaniel is a boy

with Asperger's Syndrome, who likes things to be neat and orderly, and knows hundreds upon hundreds of facts about animals. Ivy is a girl who wants to help the world's animals, but with just one problem: because of her age she isn't taken seriously. Especially since she can talk to animals, which no one believes. One summer they meet, and their differences become very useful in solving a mystery and saving the world, one animal at a time.

This is a very funny, interesting book that was filled to the brim with amazing animal facts (my little sister's favourite thing about the book!), a must read for anyone who is interested in the environment. It helps readers feel less anxious about the environment by sharing loads of tips about how to make a difference in your everyday life. It highlights that no matter how big and impossible a problem seems, it can be overcome if you put your mind to it, and that not everyone thinks about things in the same way. It shows that skills we take for granted can be more difficult for others, and not to judge a person by a first impression. Overall, it teaches kindness, caring, celebrating differences and hope for the future. A great read for anyone aged eight or above.



Maria's Island

by Victoria Hislop
and illustrated by
Gill Smith

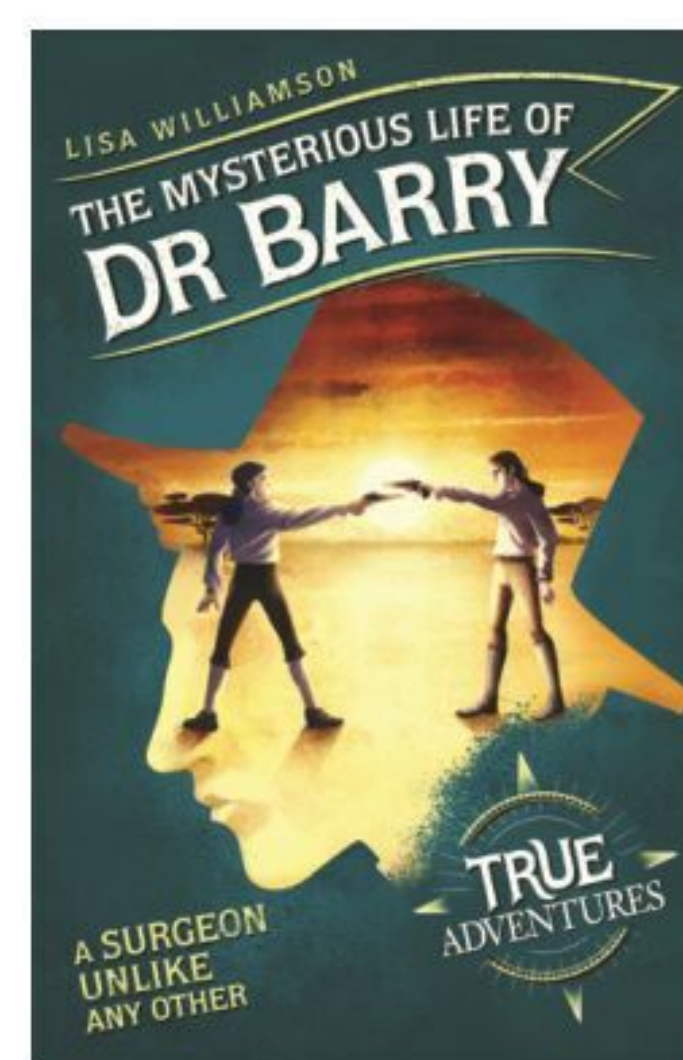
Walker, £10.99

Review by Martha,
age eleven

This beautifully illustrated book tells the story of a young girl who lives next to the Greek island of Spinalonga in the 1950s, where the infected patients of the untreatable disease leprosy are sent to live, a place surrounded by stigma and fear. To Maria, this seems irrelevant to her everyday life until, suddenly, people close to her are sent to the island, soon after followed by her. But hope and love is just around the corner ...

This story effortlessly blends love and hope during a trying time, that in many ways mirrors the problems of today. It is written in the first person and gives a unique perspective into that time in history, as seen through the eyes of a young girl as she grows. It shows that shame and stigma can be unduly founded and that bravery can be rewarded, as well as patience and hard work. It is full of friendship and family, courage and hope. It is about separation and isolation, about bonds that can get through anything, and grief. It is a children's version of an adult book – *The Island* – and could awaken many inquisitive minds.

It is perfect for children aged eight and over, an interesting and beautiful story.



The Mysterious Life of Dr Barry: A Surgeon Unlike Any Other

by Lisa Williamson

Pushkin Children's Books, £6.99

Review by Beatrix, age twelve

'If I can't be a man, then I'll pretend to be one ...' Growing up as a girl in the early nineteenth century, Margaret Bulkley is unable to pursue her dream profession – medicine – at least, not as a female ...

Margaret concocts an impossible, law-defying plan to become a doctor and challenge the very rules that bind Georgian society together. Under her new, male, identity, Dr James Barry navigates the globe, heading off to exotic lands to treat the sick, makes new discoveries about science and medicine, and performs one of the most dangerous operations known to man (and woman). But when his secret threatens to come to light, will his new life be shattered?

This is a story based on the real Dr Barry, who became one of the most respected, admired, and feared figures in the Victorian age. I think that this book is very good: short, educational and easy to read. It tells a compelling story full of fascinating concepts and ideas that children will find they can relate to in real life, helping them see the world through a historical perspective. I would recommend it for ten year olds and up. 8/10!

Puzzle Answers

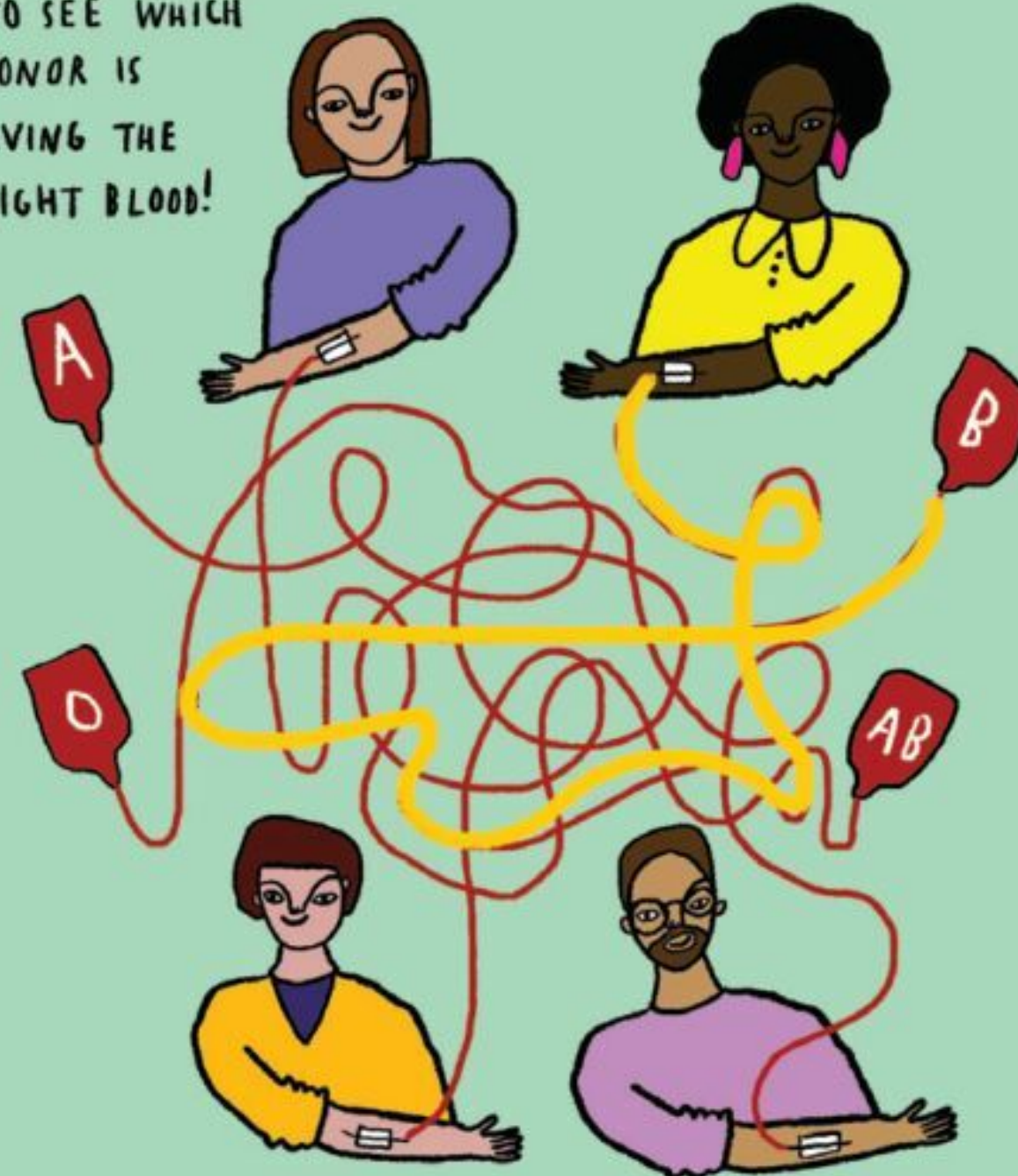
GIVE BLOOD

WORK OUT WHICH BLOOD TYPE THEY ARE BY WORKING OUT WHICH LETTER APPEARS MOST IN THIS GRID!

A	O	B	O	A	AB
B	A	AB	AB	A	B
A	AB	O	O	B	AB
O	A	B	A	O	AB
B	AB	AB	B	A	O
O	B	B	A	O	AB
B	AB	B	A	AB	A
O	O	O	B	O	A
B	B	B	AB	AB	A

THEN, FIND YOUR WAY THROUGH THE TANGLED TUBES

TO SEE WHICH DONOR IS GIVING THE RIGHT BLOOD!



PILL PATTERNS

Pill Patterns

CAN YOU FIND THIS PATTERN OF PILLS IN THE BIG SET OF PILLS?



SCOOP

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FAST FACTS

Science Museum

London Exhibition Road
South Kensington
London
SW7 2DD

In a space the size of 1,500 hospital beds at the Science Museum, you'll find three thousand objects in *Medicine: The Wellcome Galleries*. This collection of medical items is one of the most significant in the world.

Visit to see Fleming's penicillin mould, a professional pianist's prosthetic arm and robotic surgery equipment, and explore our relationship with medicine and health through more than 500 years of history.



Visitors admiring Marc Quinn's 'Self-conscious Gene' in Medicine: The Wellcome Galleries © Science Museum Group

Surgeon's Hall Museum

The Royal College of Surgeons of Edinburgh
Nicolson Street
Edinburgh
EH8 9DW

Opened in 1699, this is one of the oldest museums in Scotland. On show now is the wonderful exhibition *Blood and Guts: the twists and turns of Edinburgh's medical history*. A guide leads you through sites where anatomists, surgeons and physicians worked, and you will hear little-known stories of chloroform (anaesthetic) tea parties, pioneering women, grave robbing and Britain's first serial killers, the infamous Burke and Hare.



History of Surgery Museum

The Museum of Military Medicine

Keogh Barracks
Mytchett Place Road
Mytchett
Surrey
GU12 5RQ

This military museum has over 30,000 objects in its collections, including uniforms, medals, medical equipment and personal artefacts all to do with military medicine and nursing – both human and animal! There are museum quizzes and trails for children too.



From £4
a month

DO YOU KNOW SOMEONE WHO LOVES ORCAS?



ADOPTING AN ORCA HELPS PROTECT THEIR FUTURE...

Orcas are amazing but too many are dying. Poisoned by polluted seas. Accidentally caught in fishing gear. Some are even taken into captivity. **By adopting an orca with Whale and Dolphin Conservation you can help us give orcas the protection they need to survive.** Your support will help us protect them from activities such as industrial development, fish farming,

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



BEND

Bend was a surprise from the time she was born. No one had ever seen an orca quite like her. On the front edge of her dorsal fin was a deep cut and it grew lopsided taking on a comical look of the sorting hat from Harry Potter!

OR

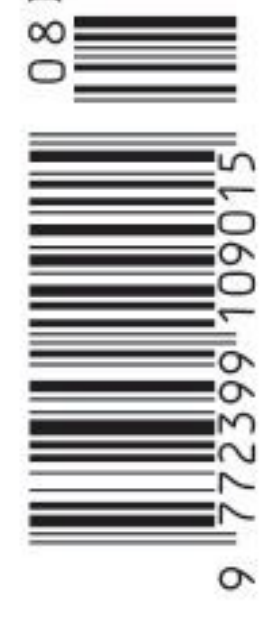


FIFE

Fife is the younger brother of Corky. Tragically, he has never met his sister as she has been held in captivity by SeaWorld. He is quite a character, extremely handsome and easy to recognise by his tall dorsal fin.



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